REASONED OPINION

ADOPTED: 27 September 2019

doi: 10.2903/j.efsa.2019.5862

Review of the existing maximum residue levels for glyphosate according to Article 12 of Regulation (EC) No 396/2005 – revised version to take into account omitted data

European Food Safety Authority (EFSA)

Abstract

The EFSA received from the European Commission a mandate to revise its previous review of the existing maximum residue levels (MRLs) for glyphosate taking into account additional data that were erroneously omitted in the evaluation report supporting the original MRL review. These additional data were evaluated by the Rapporteur Member State (RMS), Germany, and made available to EFSA in an addendum. Based on the assessment of the overall data available, MRL proposals were derived and a consumer risk assessment was carried out. Although no apparent risk to consumers was identified, some information required by the regulatory framework was missing. The consumer risk assessment is considered indicative only and some MRL proposals derived by EFSA still require further consideration by risk managers.

© 2019 European Food Safety Authority. EFSA Journal published by John Wiley and Sons Ltd on behalf of European Food Safety Authority.

Keywords: glyphosate, MRL review, Regulation (EC) No 396/2005, consumer risk assessment, herbicide, AMPA, N-acetyl-AMPA, N-acetyl-glyphosate

Requestor: European Commission

Question number: EFSA-Q-2019-00122

Correspondence: pesticides.mrl@efsa.europa.eu
Acknowledgement: EFSA wishes to thank the Rapporteur Member State, Germany, for the preparatory work on this scientific output.

Note: This version revises the MRLs derived and data gaps identified in the first version of the Reasoned opinion. Some additional data were made available by the Rapporteur Member State to EFSA in an Addendum only after the publication of the Reasoned opinion. To avoid confusion, the older and the revised version will be available on the EFSA Journal. The present Reasoned opinion replaces the previous version which was published in 2018.

Suggested citation: European Food Safety Authority (EFSA), 2019. Review of the existing maximum residue levels for glyphosate according to Article 12 of Regulation (EC) No 396/2005 – revised version to take into account omitted data. EFSA Journal 2019;17(10):5862, 211 pp. https://doi.org/10.2903/j.efsa.2019.5862

ISSN: 1831-4732

© 2019 European Food Safety Authority. EFSA Journal published by John Wiley and Sons Ltd on behalf of European Food Safety Authority.

This is an open access article under the terms of the Creative Commons Attribution-NoDerivs License, which permits use and distribution in any medium, provided the original work is properly cited and no modifications or adaptations are made.

The EFSA Journal is a publication of the European Food Safety Authority, an agency of the European Union.
Review of the existing MRLs for glyphosate - revised version to take into account omitted data

Summary

On 17 May 2018, the European Food Safety Authority (EFSA) published its Reasoned opinion on the review of the existing maximum residue levels (MRLs) for glyphosate according to Article 12(2) of Regulation (EC) No 396/2005.

After the publication of the MRL review, the company Monsanto claimed that certain data had not been taken into account in the MRL review, although it had been available to the Rapporteur Member State (Germany) at the time of preparation of the Evaluation Report supporting the MRL review.

Subsequent investigations by the competent German authorities indeed identified several studies that had not, or not fully, been considered in the evaluation. These missing studies were evaluated by Germany and submitted in an addendum on 17 January 2019.

Subsequently, EFSA received on 19 February 2019 a mandate from the European Commission to revise its Reasoned opinion to reflect these additional studies and to amend the MRLs derived and data gaps identified, where necessary.

The request for revision of the Reasoned opinion was limited to the additional studies that were evaluated by the Rapporteur Member State (RMS) in its addendum and having an impact on the MRLs derived and on the data gaps identified in the previously issued MRL review. The authorised uses and the residue definitions reported in the original MRL review were not reconsidered.

For the purpose of this revision, EFSA mainly relied on its previous Reasoned opinion for glyphosate and the addendum prepared by the RMS (Germany). Moreover, during the commenting period, additional data were submitted by France in the format of an evaluation report (France, 2019).

Toxicological data were not assessed in the current review and the present Reasoned opinion does not address the toxicological profile of glyphosate and its metabolites. In line with the provisions of Regulation (EC) No 396/2005, this review of MRLs is intended to characterise and quantify the residues of glyphosate in food and feed of plant and animal origin (resulting from the uses of glyphosate currently authorised by Member States); estimate dietary exposure of consumers, compare this dietary exposure to the toxicological reference values derived by EFSA in 2015 (for glyphosate and AMPA) and 2018 (for N-acetyl glyphosate and N-acetyl AMPA); and propose MRLs if no concern for consumers is identified, highlighting any uncertainties due to missing data.

The conclusions are as follows.

The metabolism of glyphosate in primary crops was assessed in conventional and glyphosate tolerant crops containing EPSPS and GOX modifications belonging to different crop groups as well as in genetically modified soyabean, maize and oilseed rape containing the GAT modification. Additional metabolism studies performed on conventional and EPSPS modified soyabean, cotton and maize were submitted by the RMS in the framework of this review. The metabolism in rotational crops (leafy vegetables, root and tuber vegetables and cereals) was investigated following glyphosate application directly to the soil or simulating typical agricultural practices.

In September 2016, at a meeting of the Standing Committee on Plants, Animals, Food and Feed (SCoP AFF), the following residue definitions for enforcement were agreed by Member States (MSs) as the basis for the MRL review:

OPTION 1:
- for all plant commodities, including plants with glyphosate tolerant genetically modified varieties currently available on the market: sum of glyphosate, AMPA and N-acetyl-glyphosate, expressed as glyphosate;

OPTION 2:
- for plants with glyphosate tolerant genetically modified varieties currently available on the market (sweet corn, cotton seeds, sugar beets, rapeseeds, maize and soyabean): sum of glyphosate, AMPA and N-acetyl-glyphosate, expressed as glyphosate;
- for all other plant commodities: glyphosate.

For risk assessment, a general residue definition covering both conventional and genetically modified crops was proposed as the sum of glyphosate, AMPA, N-acetyl-glyphosate and N-acetyl-AMPA, expressed as glyphosate.

Although EFSA based this assessment on both residue definitions as agreed by MSs (options 1 and 2), EFSA agrees with the RMS that glyphosate only can be considered a sufficient marker for enforcement in conventional crops. For this reason, in the whole assessment, option 2 is defined as the ‘main’ residue definition, while option 1 is reported as ‘optional’.
Sufficiently validated analytical methods are available for the enforcement of glyphosate (relevant for the main residue definition), with a limit of quantification (LOQ) of 0.05 mg/kg in high water, high oil, acidic and dry matrices. Fully validated analytical methods for the enforcement of glyphosate in complex matrices (relevant for the authorisations on conventional tea, coffee beans, carobs, hops, spices and herbal infusions) are missing and are still required. Furthermore, there are indications that AMPA and N-acetyl-glyphosate (relevant for the optional residue definition proposed for all plant commodities and for genetically modified crops) can be enforced with an LOQ of 0.05 mg/kg. Therefore, the sum of glyphosate, AMPA and N-acetyl-glyphosate, expressed as glyphosate can be enforced at the combined LOQ of 0.2 mg/kg in all matrices. Nevertheless, confirmatory methods for N-acetyl-glyphosate (in high water and high fat content matrices and dry commodities) and for AMPA (in all matrices) are still required.

Regarding the residue in primary crops, the available data on conventional crops are considered sufficient to derive (tentative) MRL proposals as well as risk assessment values for all crops under assessment except for cultivated fungi, mustard seeds, buckwheat, rice (grain and straw), maize straw, millet straw and sorghum stover for which the available data were insufficient to derive MRLs and risk assessment values. Tentative MRLs were also derived for wheat and barley straw, sugar beet tops, fodder beetroots and tops, grass forage, clover forage, alfalfa forage and turnips tops in view of the future need to set MRLs in feed items.

For genetically modified crops, data were sufficient to derive MRL for sweet corn (EPSPS modification) and cotton seed (EPSPS modification), noting that MRLs should be tentative pending submission of confirmatory methods for enforcement of AMPA and N-acetyl-glyphosate. For sugar beetroots, maize and soyabean (EPSPS modification), soyabean (GAT modification) and rapeseeds (GOX modification), the available data were insufficient to derive MRLs and risk assessment values.

When considering the optional residue definition, in the absence of confirmatory methods for enforcement of AMPA (in all matrices) and N-acetyl-glyphosate (in high water content, high fat content and dry matrices), only tentative MRLs could be derived.

Results from residue trials also enabled the following conversion factors from enforcement to risk assessment to be derived: 1 for all commodities where a no residue situation was demonstrated or was tentatively proposed, for crops with glyphosate tolerant genetically modified varieties currently available on the market (sweet corn, cotton seed, sugar beets, rapeseeds, maize and soyabean) and for all MRLs expressed according to the optional residue definition; 2 for dry pulses; 1.1 for linseed; 2.3 for millet and sorghum grain.

According to the results from the confined rotational crop studies performed up to 1.5N the maximum dose rate assessed in the present MRL review, residues of glyphosate or AMPA are not expected in rotational root and leafy crops following annual application of glyphosate, provided that the active substance is used according to the good agricultural practices (GAPs) considered in this review. Residues of glyphosate and its metabolite AMPA above the LOQ of 0.05 mg/kg cannot be excluded in cereal grain (only AMPA), forage and chaff grown in rotation with crops treated with glyphosate. Although these residues can be considered negligible compared to the residues expected according to the most critical GAP for desiccation authorised on cereals, MSs are recommended to implement proper mitigation measures when authorising plant protection products containing glyphosate, in order to avoid residues occurring in rotated cereals. Moreover, as the available studies do not cover the plateau concentration calculated for AMPA, proper mitigation measures should also be implemented to avoid accumulation of AMPA in soil and possible uptake of AMPA in rotational crops. The plateau concentration calculated for AMPA should be in any case confirmed by an additional study performed in acidic soils (data gap identified in the peer review).

Glyphosate is authorised for use on several crops that might be fed to livestock. Dietary burden calculations were therefore performed for different groups of livestock. Because livestock may be exposed to residues originating from conventional and genetically modified crops, the calculation of the dietary burden was performed combining the residues originating from the uses authorised on conventional crops and on genetically modified crops. The dietary burden values calculated for all groups of livestock were found to exceed the trigger value of 0.1 mg/kg dry matter (DM), with the residues in conventional crops representing the main contributor to livestock exposure. Behaviour of residues was therefore assessed in all commodities of animal origin.

Several livestock metabolism studies on goats and hens conducted with glyphosate, glyphosate-trimesium or with a 9:1 glyphosate:AMPA mixture were evaluated during the peer review. In addition, to address the animal metabolism of residues derived from genetically modified crops, metabolism studies on goats and hens using 14C-N-acetyl-glyphosate were also evaluated during the peer review.
The following residue definitions for animal commodities were agreed by MSs at the SCoPAFF meeting in September 2016 as the basis for the MRL review: sum of glyphosate, AMPA and N-acetyl-glyphosate expressed as glyphosate for monitoring, and sum of glyphosate, AMPA, N-acetyl-glyphosate and N-acetyl-AMPA expressed as glyphosate for risk assessment.

During the peer review, an high-performance liquid chromatography with tandem mass spectrometry (HPLC-MS/MS) analytical method and its independent laboratory validation (ILV) were assessed for the enforcement of glyphosate and N-acetyl-glyphosate at the combined LOQ of 0.05 mg/kg in meat, milk and egg, and 0.1 mg/kg in liver, kidney and fat. A confirmatory gas chromatography with mass spectrometry (GC-MS) method is, however, only available for glyphosate in milk, eggs and meat. Therefore, a confirmatory method for glyphosate in fat, liver and kidney and a confirmatory method for AMPA and N-acetyl-glyphosate in all matrices are still missing.

Based on available feeding studies and the estimated residue intakes by livestock, MRLs above the LOQ were proposed for all animal commodities, except for cattle, swine and poultry fat, poultry liver, milk and eggs where no residues are expected and the MRLs can be set at the LOQ. Considering that the N-acetyl compounds are not expected to be present in the animal tissues, a conversion factor from enforcement to risk assessment of 1 is proposed for all animal commodities. Since confirmatory methods for glyphosate in fat, liver and kidney, and for AMPA and N-acetyl-glyphosate in all matrices are still missing, all derived MRLs should be considered tentative.

Chronic and acute consumer exposure resulting from the authorised uses on conventional and genetically modified crops reported in the framework of this review was calculated using revision 2 of the EFSA PRIMo. For each commodity, risk assessment values obtained for conventional and genetically modified crops were compared and the most critical values were selected for the exposure calculations. Hence, for those commodities where an (tentative) MRL could be derived by EFSA in the framework of this revision, input values were derived according to the internationally agreed methodologies. For those plant commodities where data were insufficient to derive (tentative) MRLs, the existing EU MRLs multiplied by the following conversion factors were used for an indicative calculation: for mustard seed, the conversion of 1.1 derived from residue trials performed on other oilseeds was considered; for buckwheat and rice grain, the conversion of 2.3 derived from residue trials performed on other cereals was considered. For cultivated fungi, the highest conversion factor of 2.3 derived from all available trials was considered.

The exposure values calculated were compared with the toxicological reference values for glyphosate and its metabolites, derived by EFSA under Commission Regulation (EU) No 1141/2010 as amended by Commission Implementing Regulation (EU) No 380/2013 and in the framework of the evaluation of the impact of glyphosate and its residues in feed on animal health. The highest chronic exposure was calculated for Irish adults, representing 3.7% of the acceptable daily intake (ADI) and the highest acute exposure was calculated for dry beans, representing 80.4% of the acute reference dose (ARFD).

Consequently, although major uncertainties remain due to the data gaps identified in the previous sections, the indicative exposure calculations did not indicate a risk to consumers.

Although the residue definition for risk assessment is the same for both options assessed in this review, the MRLs derived according to the optional definition and resulting for the summing up of the LOQs of the different compounds included can be higher than the MRLs derived according to the main residue definition. For this reason, an additional scenario, based on the optional residue definition, was performed. According to this second scenario, the highest chronic exposure was calculated for Irish adults, representing 4.4% of the ADI and the highest acute exposure was calculated for dry beans, representing 80.4% of the ARFD.

Apart from the MRLs evaluated in the framework of this review, internationally recommended Codex maximum residue limits (CXLs) have also been established for glyphosate. Additional calculations of the consumer exposure, including these CXLs, were therefore carried out, considering two different scenarios: a first scenario based on the main residue definition and a second scenario based on the optional residue definition.

When considering the main residue definition (scenario 1), the highest chronic exposure was calculated for British toddlers, representing 18.8% of the ADI; the highest acute exposure was calculated for sugar beetroots, representing 91% of the ARFD.

When considering the optional residue definition (scenario 2), the highest chronic exposure was calculated for British toddlers, representing 19.1% of the ADI; the highest acute exposure was calculated for sugar beetroots, representing 91% of the ARFD.
# Table of contents

| Section                                                                 | Page |
|------------------------------------------------------------------------|------|
| Abstract                                                               | 1    |
| Summary                                                                | 3    |
| Background and Terms of Reference                                      | 7    |
| The active substance and its use pattern                               | 7    |
| Assessment                                                              | 9    |
| 1. Residues in plants                                                 | 9    |
|   1.1. Nature of residues and methods of analysis in plants            | 9    |
|   1.1.1. Nature of residues in primary crops                           | 9    |
|   1.1.2. Nature of residues in rotational crops                        | 11   |
|   1.1.3. Nature of residues in processed commodities                  | 11   |
|   1.1.4. Methods of analysis in plants                                | 11   |
|   1.1.5. Stability of residues in plants                              | 13   |
|   1.1.6. Proposed residue definitions                                 | 13   |
|   1.2. Magnitude of residues in plants                                | 13   |
|   1.2.1. Magnitude of residues in primary crops                        | 13   |
|   1.2.2. Magnitude of residues in rotational crops                     | 21   |
|   1.2.3. Magnitude of residues in processed commodities               | 22   |
|   1.2.4. Proposed MRLs                                                | 22   |
| 2. Residues in livestock                                               | 23   |
|   2.1. Nature of residues and methods of analysis in livestock         | 23   |
|   2.2. Magnitude of residues in livestock                              | 24   |
| 3. Consumer risk assessment                                            | 24   |
|   3.1. Consumer risk assessment without consideration of the existing CXLs | 25   |
|   3.2. Consumer risk assessment with consideration of the existing CXLs | 25   |
| Conclusions                                                            | 26   |
| Recommendations                                                         | 29   |
| References                                                              | 42   |
| Abbreviations                                                          | 43   |
| Appendix A – Summary of authorised uses considered for the review of MRLs | 45   |
| Appendix B – List of end points                                       | 111  |
| Appendix C – Pesticide Residue Intake Model (PRIMo)                    | 171  |
| Appendix D – Input values for the exposure calculations                | 181  |
| Appendix E – Decision tree for deriving MRL recommendations            | 200  |
| Appendix F – Used compound codes                                      | 202  |
| Appendix G – Assessment of the uses previously evaluated by EFSA but not yet legally implemented | 203  |
Background and Terms of Reference

On 17 May 2018, the European Food Safety Authority (EFSA) published its Reasoned opinion on the review of the existing maximum residue levels (MRLs) for glyphosate according to Article 12(2) of Regulation (EC) No 396/2005 (EFSA, 2018a).

After the publication of the MRL review, the company Monsanto claimed that certain data had not been taken into account in the MRL review, although it had been available to the Rapporteur Member State, Germany, at the time of preparation of the Evaluation Report supporting the MRL review.

Subsequent investigations by the competent German authorities indeed identified several studies that had not, or not fully, been considered in the original evaluation. On 17 January 2019, Germany as Rapporteur Member State submitted an addendum taking full account of the studies identified as missing.

Subsequently, EFSA received on 19 February 2019 a mandate from the European Commission to revise its Reasoned opinion to reflect these additional studies and to amend the MRLs derived and data gaps identified, where necessary.

The request for revision of the Reasoned opinion was limited to the additional studies that were evaluated by the Rapporteur Member State in its addendum and having an impact on the MRLs derived and on the data gaps identified in the previously issued MRL review. The authorised uses and the residue definitions reported in the original MRL review were not reconsidered in this revision.

For this revision, EFSA relied on its previous Reasoned opinion on the MRL review and the addendum prepared by the Rapporteur Member State (RMS) (Germany).

As a first step, EFSA performed a completeness check of the studies evaluated in the addendum and forwarded a request for further clarifications to the RMS on 20 March 2019. After considering all the information provided, EFSA finalised the completeness check report, which was made available to Member States on June 2019. In the completeness check report, information on the new studies and their relevance to the previous MRL review were detailed.

Based on the additional information identified as relevant in the completeness check report, EFSA prepared in June 2019 a draft revised Reasoned opinion, which was submitted to Member States for comment via a written procedure. All comments received by 9 July 2019 were considered by EFSA during the finalisation of the Reasoned opinion. It is noted that during the commenting period, additional data were submitted by France in the format of an evaluation report (France, 2019).

The addendum submitted by the RMS (Germany, 2019) and the evaluation report submitted by France (France, 2019) are considered as main supporting documents to this Reasoned opinion and are publicly available.

In addition, key supporting documents to this Reasoned opinion are the completeness check report (EFSA, 2019a) and the Member States consultation report (EFSA, 2019b). These reports are developed to address all issues raised in the course of the review, from the initial completeness check to the Reasoned opinion. Also, the chronic and acute exposure calculations for all crops reported in the framework of this review performed using the EFSA PRIMo (Excel file) and the PROFiles as well as the good agricultural practice (GAP) overview files listing all authorised uses collected at the time of the original MRL review, are key supporting documents and made publicly available as background documents to this Reasoned opinion. Furthermore, a screenshot of the Report sheet of the PRIMo is presented in Appendix C.

The active substance and its use pattern

Glyphosate is the ISO common name for N-(phosphonomethyl)glycine (IUPAC).

Glyphosate can be used as an ester or a salt.

It should be mentioned that the salts glyphosate-isopropylammonium, glyphosate-potassium, glyphosate-monoammonium and glyphosate-dimethylammonium are the modified ISO common names for isopropylammonium N-(phosphonomethyl)glycinate, potassium N-[(hydroxyphosphinato)methyl]glycine, ammonium N-[(hydroxyphosphinato)methyl]glycine and dimethylammonium N-(phosphonomethyl) glycinate (IUPAC), respectively. Glyphosate-trimesium is trimethylsulfonium N-[(hydroxyphosphinato)methyl]glycine (IUPAC). These salts are derivatives of the active substance glyphosate.

Glyphosate is a herbicide which is active against all plants by inhibition of the shikimate-cycle required for the formation of essential amino acids. In principle, it is systemic in plants. However, due to its high potency as a herbicide, the translocation within crops is very limited before withering. Uptake of glyphosate solely occurs via treated leaves.

The chemical structure of the active substance and its main metabolites is reported in Appendix F.
Glyphosate (including glyphosate-trimesium) was evaluated in the framework of Commission Regulation (EU) No 1141/2010 as amended by Commission Implementing Regulation (EU) No 380/2013, with Germany designated as RMS. The representative uses considered were spraying applications against emerged annual, perennial and biennial weeds in all crops and foliar spraying for desiccation in cereals and oilseeds (preharvest). Following the original peer review, conducted by the European Commission prior to establishment of EFSA, a decision on inclusion of the active substance in Annex I to Directive 91/414/EEC was published by means of Commission Directive 2001/99/EC, which entered into force on 1 July 2002, and has been deemed to be approved under Regulation (EC) No 1107/2009, in accordance with Commission Implementing Regulation (EU) No 540/2011, as amended by Commission Implementing Regulations (EU) No 541/2012. The conditions of the approval were further amended by Regulations (EU) No 2016/1056 and 2016/1313. The original approval is restricted to uses as herbicide only.

The EU MRLs for glyphosate and for trimethyl-sulfonium (TMS) cation, resulting from the use of glyphosate (including glyphosate-trimesium) are established in Annexes II and IIIB of Regulation (EC) No 396/2005, as amended by Commission Regulation (EC) No 149/2008 and Commission Regulation (EC) No 839/2008. Codex maximum residue limits (CXLs) for glyphosate were also established by the Codex Alimentarius Commission (CAC). An overview of the MRL changes that occurred since the entry into force of the Regulation mentioned above is provided below (Table 1).

**Table 1:** Overview of the MRL changes since the entry into force of Regulation (EC) No 396/2005

| Procedure | Legal implementation | Remarks |
|-----------|----------------------|---------|
| MRL application (EFSA, 2012) | Commission Regulation (EU) No 441/2012(a) | Modification of the existing MRL for glyphosate in lentils |
| Implementation of CAC 2012 | Commission Regulation (EU) No 293/2013(b) | Modification of the MRL for glyphosate in sweet corn and sugar beetroots |

(a): Commission Regulation (EU) No 441/2012 of 24 May 2012 amending Annexes II and III to Regulation (EC) No 396/2005 of the European Parliament and of the Council as regards maximum residue levels for bifenthrin, bifenazate, boscalid, cyprodinil, dinocap, dichlobenil, difenoconazole, dinocap, fipronil, fenpyroximate, flubendiamide, fludioxonil, glyphosate, metalaxyl-M, meptyldinocap, novaluron, thiamethoxam and triazophos in or on certain products, OJ L 135, 25.5.2012, p. 4-56.

(b): Commission Regulation (EU) No 293/2013 of 20 March 2013 amending Annexes II and III to Regulation (EC) No 396/2005 of the European Parliament and of the Council as regards maximum residue levels for emamectin benzoate, etofenprox, fenpyroximate, fludioxonil, glyphosate, phosmet, pyraclostrobin, spinosad and spirotetratram in or on certain products, OJ L 96, 5.4.2013, p. 1-30.

For the purpose of this revision, EFSA considered all the uses of glyphosate (as ester and salts) and/or glyphosate-trimesium on conventional and genetically modified crops (EPSPS, GOX and GAT) authorised within the EU and in third countries that have been collected by the Member States and the RMS at the time of the original MRL review and reported in the GAP overview files. The critical GAP identified in the overview files was then summarised in the PROFiles and considered in the assessment. The details of the authorised critical uses (GAPs) for glyphosate are given in Appendix A. Moreover, information available in the EU Register of authorised GMOs was also considered by EFSA.

According to the information received, glyphosate is authorised in conventional crops either on soil or by foliar spray application (Appendix A.1).

Although the cultivation of genetically modified crops is currently not authorised within the EU, glyphosate can be used in genetically modified glyphosate-tolerant organisms in third countries. In...
particular, import tolerance GAPs were received for EPSPS modified sweet corn, cotton seeds and sugar beets (Appendix A.2) and for GOX modified rapeseeds (Appendix A.3). Furthermore, based on the EU Register of authorised GMOs, the import of genetically modified EPSPS maize and EPSPS soyabeans is authorised in Europe. Nevertheless, no import tolerances were reported by MSs during the GAP collection phase for these specific genetically modified crops. Regarding GAT modified crops, only an import tolerance for rapeseeds was received (Appendix A.4). However, according to the information available in the EU Register of authorised GMOs, GAT genetically modified rapeseed is not authorised for placing on the market in the EU. Therefore, although this GAP has been reported for completeness, it has not been considered further in the assessment. It is also noted that, although according to the EU Register of authorised GMOs the import of genetically modified GAT soyabeans is authorised in Europe and import tolerances on soyabeans, rapeseeds and maize containing this modification were assessed by EFSA in previous Reasoned opinions (EFSA, 2009, 2013), MRLs as derived in these assessments were never legally implemented. Hence, also considering the GAPs notified by Member States (MSs), it is concluded that GAT modified crops are not present on the EU market.

No EU GAPs or import tolerances were reported by MSs for glyphosate-trimesium.

Assessment

EFSA has based its assessment on the PROFile submitted by the RMS under the original MRL review, the evaluation report accompanying the PROFile (Germany, 2017), the renewal assessment report (RAR) and its addenda prepared under Commission Regulation (EU) No 1141/2010 as amended by Commission Implementing Regulation (EU) No 380/2013 (Germany, 2013b, 2015), the conclusion on the peer review of the pesticide risk assessment of the active substance glyphosate (EFSA, 2015), the previous Reasoned opinion on borage seeds (United Kingdom, 2015; EFSA, 2016), the EFSA Reasoned opinion on the review of the existing MRLs under Art. 12 (EFSA, 2018a), the addendum submitted by the RMS under the framework of this revision (Germany, 2019), the evaluation report submitted by France during the Consultation of Member States on the revised Reasoned opinion (France, 2019), as well as the Joint Meeting on Pesticide residues (JMPR) Evaluation reports (FAO, 2005, 2011, 2013). The assessment is performed in accordance with the legal provisions of the uniform principles for evaluation and authorisation of plant protection products as set out in Commission Regulation (EU) No 546/2011 and the currently applicable guidance documents relevant for the consumer risk assessment of pesticide residues (European Commission, 1997a–g, 2000, 2010a,b, 2016; OECD, 2011, 2013).

More detailed information on the available data and on the conclusions derived by EFSA can be retrieved from the list of end points reported in Appendix B.

In order to support risk managers in the decision-making process, EFSA also evaluated the import tolerances on GAT modified rapeseeds, soyabeans and maize not present on the EU market but assessed in previous EFSA Reasoned opinion (EFSA, 2009, 2013; Germany, 2009, 2013a). These uses, the derived MRLs and the outcome of the risk assessment are reported in Appendix G.

It is highlighted that toxicological data were not assessed in the current review and that the present Reasoned opinion does not address the toxicological profile of glyphosate and its metabolites. In line with the provisions of Regulation (EC) No 396/2005, this review of MRLs is intended to characterise and quantify the residues of glyphosate in food and feed of plant and animal origin (resulting from the uses of glyphosate currently authorised by Member States), estimate dietary exposure of consumers, compare this dietary exposure to the toxicological reference values derived by EFSA in 2015 (for glyphosate and AMPA) and in 2018 (for N-acetyl glyphosate and N-acetyl AMPA) (EFSA, 2018b) and propose MRLs in case no concern for consumers is identified, also highlighting the uncertainties due to missing data.

1. Residues in plants

1.1. Nature of residues and methods of analysis in plants

1.1.1. Nature of residues in primary crops

The metabolism of glyphosate in conventional and genetically modified crops (containing EPSPS, GOX and GAT modifications) was assessed during the peer review for the renewal of the approval...
(Germany, 2015). Additional metabolism studies performed on conventional crops (citrus fruits, soyabean and rice) and on EPSPS genetically modified soyabean, cotton and maize were submitted by the RMS in the framework of this review (Germany, 2017).

During the peer review, the metabolism was investigated in conventional plants belonging to the fruit, root, pulses/oilseeds, cereal and miscellaneous crop groups, using either soil, foliar, hydroponic or local direct (on stem, trunk or into fruit peduncle) application of 14C-glyphosate and, in some experiments, with 13C-AMPA. Following soil application, the uptake of glyphosate was very low and mostly amounted to less than 1% of the applied radioactivity (AR) in plant matrices. Limited translocation was also observed after local foliar application, most of the applied radioactivity (80%) remaining in the treated parts of the plants, except for potatoes, where up to 12.4% of the AR was found in the tubers. Hydroponic studies were therefore the key studies to identify the metabolic pattern of glyphosate in conventional plants. Globally, without soil present as substrate, less than 5% of the AR was recovered in the aerial parts, while up to 20% of the AR was recovered in the roots. No significant degradation was observed and unchanged glyphosate was observed as the major component of the residues in most of the samples (ca. 50–80% total radioactive residue (TRR)) with low amounts of AMPA (4–10% TRR) and N-methyl-AMPA (0.3–5% TRR in root samples).

The same metabolic pattern was observed in studies representative of the use of glyphosate as desiccant and performed on wheat with foliar application at 6 kg/ha; actually in this study, glyphosate represented the main compound of the TRR (accounting for up to 91% TRR in grain and up to 83% TRR in straw, corresponding to 2.43 mg eq/kg and 103 mg eq/kg, respectively) and AMPA was identified as the only metabolite (accounting for up to 3.9% TRR corresponding to 12.8 mg eq/kg).

Results from the additional metabolism studies on rice (soil application before flooding and transplanting) and on soyabean plants, direct foliar, soil or hydroponic application) received in the framework of this review confirmed the metabolic pattern observed in the previous studies with limited uptake of glyphosate from the roots to the aerial parts in both soyabean and rice plants and limited translocation from the treated leaves into other parts of the soya plant. Low concentrations of glyphosate (max 3.5% TRR) and AMPA (max 0.7% TRR) were found in rice plants, while no identification and quantification of the residues was performed in soyabean plants.

A similar metabolic pattern as observed with glyphosate was depicted when the studies were performed with glyphosate-trimesium labelled on the PMG-anion. Metabolism studies conducted with the TMS-cation labelling demonstrated that the TMS-cation is not metabolised in plants.

In genetically modified plants, the metabolic pattern of glyphosate is driven by the modifications introduced into the genome of the plant. In the metabolism studies conducted on GM soyabean, cotton and sugar beet containing the EPSPS modification and assessed during the peer review, parent glyphosate was detected as the major component of the residues, accounting for 24–95% TRR in forage, hay, tops and roots for 12–25% TRR in seeds. AMPA was present in lower amounts (mostly 1–13% TRR) up to 49% TRR in soyabeans seeds. Overall, the metabolic pattern was similar to that observed in conventional plants as the EPSPS modification does not affect the metabolism of glyphosate in genetically modified plants. The additional metabolism studies on EPSPS modified crops received in the framework of this review mainly confirm the metabolic pattern observed in the previous studies. Glyphosate was the main component of the TRR in soyabeans forage (99% TRR), soyabeans hay (89% TRR), cotton seeds (70% TRR), maize forage (79% TRR), maize foliage (87% TRR), maize grain (37% TRR) and AMPA was present at much lower amounts (from ‘not detected’ in soyabeans forage to 7.1% TRR in soyabeans hay). In soya beans seeds, glyphosate and AMPA were present at the same level representing 45% and 48% of the TRR, respectively. An additional study on soyabean was performed with glyphosate-trimesium radiolabelled at the trimesium cation, without providing information on the fate of the glyphosate moiety, and was therefore not considered further in this review.

The metabolism resulting from the introduction of the GOX modification was investigated in rape seed and maize in combination with the EPSPS modification. Following two foliar applications, glyphosate was observed in maize forage, silage and fodder (67–83% TRR), but almost not detected in seeds at harvest (7% TRR), where the main component of the residues was identified as AMPA, representing up to 8% TRR in rape seeds and 60% TRR in maize seeds.

The impact of the GAT modification was investigated in three metabolism studies conducted on genetically modified rapeseed, soyabean and maize, following one pre-emergence application and three post-emergence treatments, up to 7 or 14 days before harvest. Parent glyphosate was detected in the soyabeans and maize forage and foliage (9–75% TRR) and in rape seeds (21%), but was almost absent in soyabean and maize seeds at harvest (0.1–3% TRR). In all plant matrices, the main component of the radioactive residues was identified as the N-acetyl-glyphosate, a metabolite formed...
by the action of the GAT enzyme, and accounting for 51–57% of the TRR in seeds and 18–93% TRR in the other plant parts. In addition, N-acetyl-AMPA was also identified as a major metabolite in rape and soyabean seeds, representing 15–24% TRR.

1.1.2. Nature of residues in rotational crops

Glyphosate is authorised for use on crops that can be grown in rotation, and therefore, the possible occurrence of residues in succeeding crops resulting from the use on primary crops has to be assessed. The soil degradation studies demonstrated that the degradation rate of glyphosate is moderate with a maximum field DT$_{90}$ of 387 days, which exceeds the trigger value of 100 days. In addition, DT$_{90}$ field value of the soil metabolite AMPA ranged between 958 and > 1,000 days (EFSA, 2015). Thus, further investigation on the nature and magnitude of the residues in rotational crops are required (European Commission, 1997c).

The metabolism of glyphosate was investigated in rotational crops (leafy vegetables, root and tuber vegetables and cereals) (Germany, 2015). In these studies, glyphosate was applied directly to the soil up to 6.5 kg/ha (corresponding to 1.5N the maximum application rate considered in this review) or simulating typical agricultural practices (treatment of primary crops and planting or sowing of the succeeding crops at different plant back intervals after harvest of the treated primary crop).

According to the results from the confined rotational crop studies, it can be concluded that the metabolism in rotational crops is similar to the metabolism in primary crops with higher relative amounts of AMPA expected due to its formation in soil. In fact, glyphosate and AMPA were the only compounds identified in the rotated crops accounting for up to 33% TRR (wheat chaff) and 29% TRR (wheat grain), respectively.

1.1.3. Nature of residues in processed commodities

Standard hydrolysis studies simulating the processing conditions representative of pasteurisation, baking, brewing, boiling and sterilisation were evaluated during the peer review for the renewal (Germany, 2015). Based on the results of these studies, it was possible to conclude that glyphosate and N-acetyl-glyphosate are hydrolytically stable under the standard conditions (EFSA, 2015). The effect of processing on the nature of AMPA was not investigated. However, considering the extremely simple structure of AMPA without structural elements capable of hydrolysis, AMPA is expected to be stable following processing and no additional studies are required.

1.1.4. Methods of analysis in plants

Analytical methods for the determination of glyphosate residues in plant commodities were assessed during the peer review for the renewal of approval which concluded that glyphosate and N-acetyl-glyphosate can be enforced at the limit of quantification (LOQ) of 0.05 mg/kg for each compound in high water and high oil content, acidic and dry commodities (EFSA, 2015). According to the RMS, the same method has also been sufficiently validated for AMPA in high water and high oil content, acidic and dry matrices, although a confirmatory method for this metabolite is not available (Germany, 2017). A confirmatory method for N-acetyl-glyphosate in high water and high fat content matrices and dry commodities was identified as a data gap during the peer review and no additional data were received in the framework of this review. A fully validated analytical method in complex matrices such as hops, spices, tea, coffee, carobs and herbal infusions is not available and it is still required.

According to the information provided by the European Union Reference Laboratories (EURLs), the following LOQs can be achieved in the different matrices: 0.02 mg/kg (for glyphosate, AMPA and N-acetyl-AMPA) and 0.01 mg/kg (for N-acetyl-glyphosate) in high water and high acid content, acidic and dry commodities (EFSA, 2018a). Nevertheless, detailed information on the analytical methods currently in place for the routine analyses could not be included in this Reasoned opinion since they were not reported in an evaluation report. According to the EURLs, analytical standards for glyphosate, AMPA, N-acetyl-glyphosate and N-acetyl-AMPA are commercially available (EFSA, 2018a).

Analytical methods for the enforcement of trimethyl-sulfonium cation in plant commodities were not assessed during the peer review for renewal and in the MRL review. Nevertheless, according to the information provided by the EURLs, during routine analyses, an LOQ of 0.01 mg/kg can be achieved for the enforcement of trimethyl-sulfonium cation in the four main matrices (EFSA, 2018a).
1.1.5. Stability of residues in plants

During the peer review, residues of glyphosate and AMPA were found to be stable at \(-18/20^\circ C\) for at least 24 months in all matrices, except for high protein content commodities where the storage stability of AMPA was not investigated (Germany, 2015). Nevertheless, considering that the storage stability of AMPA has been demonstrated for at least 24 months in the main matrices including dry commodities, a storage stability study in high protein commodities is considered desirable only in the present assessment. Additional storage stability studies were reported in the framework of this review (Germany, 2017). According to the results from these additional studies, at storage temperature of \(-20^\circ C\), metabolite N-acetyl-glyphosate is stable for at least 1 year in high oil, high water and dry/starch matrices and N-acetyl-AMPA is stable for at least 1 year, 18 months and 23 months in high water, high oil and dry/starch matrices, respectively. Storage stability of N-acetyl-glyphosate and N-acetyl-AMPA in high protein content and acidic matrices has not been investigated.

1.1.6. Proposed residue definitions

In September 2016, during the Standing Committee on Plants, Animals, Food and Feed (SCoPAFF) meeting, the following residue definitions for enforcement were agreed upon by MSs as the basis for the MRL review:

OPTION 1:
- for all plant commodities, including plants with glyphosate tolerant genetically modified varieties currently available on the market: sum of glyphosate, AMPA and N-acetyl-glyphosate, expressed as glyphosate;

OPTION 2:
- for plants with glyphosate tolerant genetically modified varieties currently available on the market (sweet corn, cotton seeds, sugar beets, rapeseeds, maize and soyabeans): sum of glyphosate, AMPA and N-acetyl-glyphosate, expressed as glyphosate;
- for all other plant commodities: glyphosate.

For risk assessment, a general residue definition covering both conventional and genetically modified crops was proposed as the sum of glyphosate, AMPA, N-acetyl-glyphosate and N-acetyl-AMPA, expressed as glyphosate.

Although EFSA based this assessment on both residue definitions as agreed by MSs (options 1 and 2), EFSA agrees with the RMS that glyphosate only can be considered a sufficient marker for enforcement in conventional crops. For this reason, in the whole assessment, the option 2 is defined as the ‘main’ residue definition, while the option 1 is reported as ‘optional’.

Sufficiently validated analytical methods are available for the enforcement of glyphosate (relevant for the main residue definition), with an LOQ of 0.05 mg/kg in high water, high oil, acidic and dry matrices. Fully validated analytical methods for the enforcement of glyphosate in complex matrices (relevant for the authorisations on conventional tea, coffee beans, carobs, hops, spices and herbal infusions) are missing and are still required.

There are indications that AMPA and N-acetyl-glyphosate (relevant for the optional residue definition proposed for all plant commodities and for genetically modified crops) can be enforced with an LOQ of 0.05 mg/kg each. Therefore, the sum of glyphosate, AMPA and N-acetyl-glyphosate, expressed as glyphosate can be enforced at the combined LOQ of 0.2 mg/kg in all matrices. The combined LOQ was calculated considering the sum of LOQs and molecular factors of 1.5 to convert AMPA to glyphosate and 0.8 to convert N-acetyl-AMPA to glyphosate (combined LOQ = 0.05 + 1.5 × 0.05 + 0.8 × 0.05 = 0.165, rounded up to 0.2 mg/kg). Nevertheless, confirmatory methods for N-acetyl-glyphosate (in high water and high fat content matrices and dry commodities) and for AMPA (in all matrices) are still required.

Information on the availability of a fully validated analytical method for the enforcement of trimethyl-sulfonium cation in the plant commodities, against illegal uses, is not available to EFSA.

It is highlighted that, since the acetyl compounds are specific for GAT-modified crops only and GAT-modified crops are currently not present on the EU market (see also Section on the active substance
and its use pattern), the inclusion of N-acetyl-glyphosate in the residue definition for enforcement may be reconsidered and a separate residue definition comprising the N-acetyl glyphosate only could be defined. This would allow risk managers to set a lower LOQ for enforcement in all plant commodities and to identify any possible misuse of genetically modified GAT crops by the analysis of the N-acetyl glyphosate.

The metabolism studies conducted with the TMS-cation labelling demonstrated that the TMS-cation is not metabolised and remains the relevant marker substance in plants. Analytical methods for the enforcement of trimethyl-sulfonium cation in plant commodities were not assessed during the peer review for renewal and in the MRL review. Nevertheless, according to the information provided by the EU-RLs, during routine analyses, an LOQ of 0.01 mg/kg can be achieved for the enforcement of trimethyl-sulfonium cation in the four main matrices (EFSA, 2018a).

1.2. Magnitude of residues in plants

1.2.1. Magnitude of residues in primary crops

To assess the magnitude of residues resulting from the reported GAPs, EFSA considered all residue trials reported by the RMS in the evaluation report and its addendum (Germany, 2017, 2019), including residue trials evaluated in the framework of the peer review (Germany, 2015) and a previous EFSA Reasoned opinion (United Kingdom, 2015) and additional residue trials provided during the consultation of MS on the revised Reasoned opinion (France, 2019). All residue trial samples considered in this framework were stored in compliance with the demonstrated storage conditions, except samples of olives that were stored for up to 32 months and samples of dry peas and beans and borage seeds from northern trials for which the storage conditions were not reported. Although an evaluation report including the summary of the trials on dry beans and peas is still required, considering that the storage stability in the main four matrices was demonstrated for at least 24 months, a significant decline of residues is not expected to have occurred in these samples. The number of residue trials and extrapolations were evaluated in accordance with the European guidelines on comparability, extrapolation, group tolerances and data requirements for setting MRLs (European Commission, 2016).

Regarding the uses on conventional crops, according to the RMS, a no residue situation can be anticipated for all orchards (except olives, since the fruits can be picked from the ground) and for all soil applications done before sowing/planting or as interrow treatment or by wiping or as local treatment by rubbing and dabbing (envelope approach).

It is noted that the envelope approach has been fully supported by EFSA and the MSs in the framework of the peer review. However, EFSA is of the opinion that this approach is not applicable for most of the critical GAPs assessed in the MRL review mainly for the following reasons:

- the application rates assessed during the peer review for the early treatments (BBCH 00-09) were significantly lower (2.16 kg/ha) compared to the most critical uses currently authorised and considered in this review. Moreover, representative uses were supported by residue trials confirming a no residue situation while no residue trials, reflecting the most critical application rate authorised, are available.
- excluding the uses for desiccation, applications close to the harvest were not assessed during the peer review while in most of the critical uses considered in this review, the active substance is applied close to the harvest, when fruits are already formed and may be exposed to glyphosate. When the edible part is growing close or into the soil, according to EFSA, its exposure to glyphosate should be considered possible also for wiping application, especially if there is little space between the rows. Excluding the trials on orchards, also for this type of application, residue trials reflecting the most critical GAPs are not available.

EFSA acknowledges that for all orchards, contamination of the fruits can be avoided by implementing proper risk mitigation measures (e.g. use of equipment with spray shields). A no residue condition is also confirmed by the available metabolism studies showing that there is no uptake from the soil to the fruits and by available residue trials on tree nuts, apricots, peaches, kiwi and bananas reflecting the most critical GAP assessed in this review. This approach is considered also applicable to the soil treatment of grapes and olives when, according to the authorised use, olives are picked only from the trees. Actually also for these uses, available residue trials performed according to the most critical GAP by using a proper equipment to avoid spray drift, confirm a no residue situation.
For applications done close to the harvest (preharvest interval (PHI) of 7–30 days) to all crops other than orchards, grapes and olives, even taking into account the implementation of proper risk mitigation measures to avoid the spray drift of the plant, no residue trials are available to confirm that no residues are taken up from the soil when the application is done close to the harvest. This can be particularly relevant for root crops whose edible parts are formed and are in direct contact with the soil when glyphosate is applied. In all these cases, although the metabolism in primary and rotational crops can give indication that a significant uptake from the soil is not expected to occur, EFSA is still of the opinion that at least two residue trials performed according to the most critical GAP and confirming a no residue situation should be submitted.

Similarly, also for soil application done at pre-emergence or before sowing, planting and after harvest, EFSA is of the opinion that at least two residue trials confirming the no residue situation at the critical GAP considered in this review are still required. This approach is aligned to the current guidance document on MRL setting and extrapolation.

Therefore, considering the criteria presented above, EFSA was not in a position to derive MRL and risk assessment values for the following commodities and the corresponding data gaps were identified:

- Cultivated fungi: available metabolism studies are not considered representative of the metabolism in fungi and possible uptake from soil cannot be excluded. Therefore, four trials compliant with the northern outdoor GAP and four trials compliant with the southern outdoor GAP are still required. Furthermore, analysis in cereals straw shows high residue levels in these matrices and experience with other substances has shown that cultivated fungi (e.g. champignons) may be 'contaminated' when cultivated on cereals straw used as substrate. Therefore, in order to avoid cross-contamination from straw in cultivated fungi, MSs are recommended to implement proper risk mitigation measures (e.g. do not use straw from cereals treated with glyphosate as substrate for the cultivation of fungi), or to reconsider the existing use on cereals;
- Mustard seeds: four trials compliant with the northern outdoor GAP and four trials compliant with the southern outdoor GAP are required;
- Buckwheat: four trials compliant with the northern outdoor GAP, four trials compliant with the southern outdoor GAP and four trials compliant with the import tolerance are required;
- Rice (grain and straw): eight trials compliant with the southern outdoor GAP are required;
- Maize stover, millet straw: four trials compliant with the northern outdoor GAP and four trials compliant with the southern outdoor GAP are required;
- Sorghum stover: four trials compliant with the northern outdoor GAP and four trials compliant with the southern outdoor GAP are required.

For all other commodities, data were sufficient to derive (tentative) MRL and risk assessment values, taking note of the following considerations:

- Citrus fruits, tree nuts, pome fruits, stone fruits, figs, kumquats, kiwi fruits, kaki, litchis, passion fruits, avocados, mango, papayas, pomegranates, cherimoyas: based on residue trials on tree nuts, apricots, peaches, kiwi and bananas compliant with the southern outdoor GAPs, a no residue situation can be anticipated for these crops provided that a proper equipment is used to avoid spray drift. Therefore, MRL and risk assessment values can be derived at the LOQ and no additional trials are required;
- Strawberries: no residue trials are available. Although a no residue situation can be tentatively proposed for this commodity, at least two trials compliant with the northern outdoor GAP, two trials compliant with the southern outdoor GAP and two trials compliant with the indoor GAP are still required;
- Cane fruits: no residue trials are available. Although a no residue situation can be tentatively proposed for these commodities, at least two trials compliant with the northern outdoor GAP and two trials compliant with the southern outdoor GAP are still required;
- Other small fruits and berries: no residue trials are available. Although a no residue situation can be tentatively proposed for these commodities, at least two trials compliant with the northern outdoor GAP and two trials compliant with the southern outdoor GAP are still required;
- Table olives: although a no residue situation can be proposed based on the southern outdoor GAP (tree picked olives only), four trials compliant with the northern outdoor GAP are still required;
- Potatoes: number of trials is not compliant with the data requirements for this crop. Moreover, results from two northern residue trials performed at longer PHI of 17–18 instead of 7 days and
showing higher residues, suggest that longer PHIs may have an effect on the residues in tuber. Although tentative MRL and risk assessment values can be derived from the available data, one additional trial compliant with the northern outdoor GAP is required. This trial should be carried out as a decline study, in order to elucidate why higher residues were found at a longer PHI.

- Cassava roots, yams, arrowroots: no residue trials are available. Although a no residue situation can be tentatively proposed for these commodities, at least two trials compliant with the southern outdoor GAP are required;
- Beetroots, celeriacs, horseradishes, salsifies, swedes and turnips (roots and tops): no residue trials are available. Although a no residue situation can be tentatively proposed for these commodities, at least two trials compliant with the northern outdoor GAP and two trials compliant with the southern outdoor GAP are required;
- Sweet potatoes: no residue trials are available. Although a no residue situation can be tentatively proposed for these commodities, at least two trials compliant with the southern outdoor GAP are required;
- Carrots: although MRL and risk assessment values can be derived from the southern outdoor GAP (no residues are expected in the crops following local treatments by dabbing and rubbing), at least two trials compliant with the northern outdoor GAP are required;
- Jerusalem artichokes, parsnips, parsley roots, radishes: no residue trials are available. Although a no residue situation can be tentatively proposed for these commodities, at least two trials compliant with the northern outdoor GAP and two trials compliant with the southern outdoor GAP are required;
- Garlic, onions, shallots: no residue trials are available. Although a no residue situation can be tentatively proposed for these commodities, at least two trials on onions compliant with the northern outdoor GAP, two trials on onions compliant with the southern outdoor GAP and two trials on onions compliant with the indoor GAP are required;
- Leeks and spring onions: no residue trials are available. Although a no residue situation can be tentatively proposed for these commodities, at least two trials on leek compliant with the northern outdoor GAP, two trials on leek compliant with the southern outdoor GAP and two trials on leek compliant with the indoor GAP are required;
- Tomatoes, aubergines: although MRL and risk assessment values can be derived from the southern outdoor GAP (no residues are expected in the crops following local treatments by dabbing and rubbing), at least two trials on tomatoes compliant with the northern outdoor GAP and eight trials on tomatoes compliant with the indoor GAP are required;
- Sweet peppers: no residue trials are available. Although a no residue situation can be tentatively proposed for this commodity, at least two trials on sweet peppers compliant with the northern outdoor GAP, two trials compliant with the southern outdoor GAP and two trials compliant with the indoor GAP are required;
- Okras: no residue trials are available. Although a no residue situation can be tentatively proposed for this commodity, at least two trials compliant with the southern outdoor GAP and two trials compliant with the indoor GAP are required;
- Cucurbits with edible peel: no residue trials are available. Although a no residue situation can be tentatively proposed for these commodities, at least two trials on cucumber/courgettes compliant with the northern outdoor GAP, two trials on cucumber/courgettes compliant with the southern outdoor GAP and two trials on cucumber/courgettes compliant with the indoor GAP are required;
- Cucurbits with inedible peel: no residue trials are available. Although a no residue situation can be tentatively proposed for these commodities, at least two trials on melons compliant with the northern outdoor GAP, two trials on melons compliant with the southern outdoor GAP and two trials on melons compliant with the indoor GAP are still required;
- Sweet corn: although MRL and risk assessment values can be derived from the northern outdoor GAP, at least two trials compliant with the southern outdoor GAP are still required;
- Broccoli, cauliflower: no residue trials are available. Although a no residue situation can be tentatively proposed for these commodities, at least two trials compliant with the northern outdoor GAP, two trials compliant with the southern outdoor GAP and two trials compliant with the indoor GAP are still required;
- Brussels sprouts: no residue trials are available. Although a no residue situation can be tentatively proposed for this commodity, at least two trials compliant with the northern outdoor
GAP, two trials compliant with the southern outdoor GAP and two trials compliant with the indoor GAP are still required;

- Head cabbage: no residue trials are available. Although a no residue situation can be tentatively proposed for this commodity, at least two trials compliant with the northern outdoor GAP, two trials compliant with the southern outdoor GAP and two trials compliant with the indoor GAP are still required;

- Leafy brassica: no residue trials are available. Although a no residue situation can be tentatively proposed for these commodities, at least two trials compliant with the northern outdoor GAP, two trials compliant with the southern outdoor GAP and two trials compliant with the indoor GAP are still required;

- Kohlrabies: no residue trials are available. Although a no residue situation can be tentatively proposed for this commodity, at least two trials compliant with the northern outdoor GAP, two trials compliant with the southern outdoor GAP and two trials compliant with the indoor GAP are still required;

- Lamb’s lettuce: no residue trials are available. Although a no residue situation can be tentatively proposed for this commodity, at least two trials compliant with the northern outdoor GAP, two trials compliant with the southern outdoor GAP and two trials compliant with the indoor GAP are still required;

- Lettuces, scaroles, cresses, land cresses, Roman rocket, Red mustards, baby leaf crops (including brassica species), purslane, chards, fresh herbs: no residue trials are available. Although a no residue situation can be tentatively proposed for these commodities, at least two trials on lettuce (open-leaf) compliant with the northern outdoor GAP, two trials on lettuce (open-leaf) compliant with the southern outdoor GAP and two trials on lettuce (open-leaf) compliant with the indoor GAP are required;

- Spinaches: no residue trials are available. Although a no residue situation can be tentatively proposed for this commodity, at least two trials compliant with the northern outdoor GAP, two trials compliant with the southern outdoor GAP and two trials compliant with the indoor GAP are still required;

- Grape leaves: no residue trials are available. Although a no residue situation can be tentatively proposed for this commodity, at least two trials compliant with the northern outdoor GAP, two trials compliant with the southern outdoor GAP and two trials compliant with the indoor GAP are still required;

- Watercress: no residue trials are available. Although a no residue situation can be tentatively proposed for this commodity, at least two trials on lettuce (open-leaf) compliant with the northern outdoor GAP, two trials on lettuce (open-leaf) compliant with the southern outdoor GAP and two trials on lettuce (open-leaf) compliant with the indoor GAP are required;

- Witloof: no residue trials are available. Although a no residue situation can be tentatively proposed for this commodity, at least two trials compliant with the northern outdoor GAP and two trials compliant with the southern outdoor GAP are still required;

- Beans and peas (with pods): although MRL and risk assessment values can be derived from the southern outdoor GAP (no residues are expected in the crops following local treatments by dabbing and rubbing), at least two trials on beans/peas (with pods) compliant with the northern outdoor GAP and two trials on beans/peas (with pods) compliant with the indoor GAP are required;

- Beans and peas (without pods): although MRL and risk assessment values can be derived from the southern outdoor GAP (local treatments by dabbing and rubbing), at least two trials on beans/peas (without pods) compliant with the northern outdoor GAP and two trials on beans/peas (without pods) compliant with the indoor GAP are required;

- Lentils (fresh): although MRL and risk assessment values can be derived from the southern outdoor GAP (no residues are expected in the crops following local treatments by dabbing and rubbing), at least two trials compliant with the northern outdoor GAP and two trials compliant with the indoor GAP are required;

- Celeries, cardoons, Florence fennels, rhubarbs: no residue trials are available. Although a no residue situation can be tentatively proposed for these commodities, at least two trials on celeries compliant with the northern outdoor GAP, two trials on celeries compliant with the southern outdoor GAP and two trials on celeries compliant with the indoor GAP are required;

- Asparagus: although a no residue situation can be tentatively proposed for this commodity, at least one additional trial compliant with the northern outdoor GAP, two trials compliant with the southern outdoor GAP and two trials compliant with the indoor GAP are required;
Globe artichokes: although MRL and risk assessment values can be derived from the southern outdoor GAP (no residues are expected in the crops following local treatments by dabbing and rubbing), at least two trials compliant with the northern outdoor GAP are still required;

Bamboo shoots: no residue trials are available. Although a no residue situation can be tentatively proposed for this commodity, at least two trials compliant with the northern outdoor GAP, two trials compliant with the southern outdoor GAP and two trials compliant with the indoor GAP are required;

Palm hearts: no residue trials are available. Although a no residue situation can be tentatively proposed for this commodity, at least two trials compliant with the northern outdoor GAP, two trials compliant with the southern outdoor GAP and two trials compliant with the indoor GAP are required;

Wild fungi: underdosed trials performed on wild fungi (simulating applications on forest and non-cultivated areas but not compliant with the GAPs received in this review) were reported by the RMS in the evaluation report (Germany, 2017) and show that significant residues can be observed after such treatments. Nevertheless, EFSA is of the opinion that, provided that a proper risk mitigation measure is in place in order to avoid cross-contamination of wild fungi, a no residue situation can be anticipated in this commodity. Therefore, the MRL and risk assessment values are proposed at the LOQ and no additional trials are required.

Beans (dry) and peas (dry): the import tolerance GAP is supported by 12 trials performed on dry beans with two applications instead of 1. Considering that the first application (performed at emergence) is not expected to have an impact on the final residue levels, these trials are deemed acceptable to derive MRL and risk assessment values from the import tolerance GAP. As regards the northern GAP, a complete evaluation report including the summary of the residue trials mentioned in Germany, 2017 is still required (Germany, 2017). Furthermore, eight trials compliant with the southern outdoor GAP are also required;

Lentils (dry) and lupins (dry): an evaluation report including the summary of the northern residue trials considered to derive the MRL is still required (Germany, 2017); in the meanwhile, MRL and risk assessment values are derived on a tentative basis only;

Rapeseeds and linseeds: although MRL and risk assessment values could be derived from the northern data set, four additional trials on rapeseeds compliant with the southern outdoor GAP are still required;

Peanuts: no residue trials are available. Although a no residue situation can be tentatively proposed for this commodity, at least two trials compliant with the northern outdoor GAP and two trials compliant with the southern outdoor GAP are required;

Poppy seeds: no residue trials are available. Although a no residue situation can be tentatively proposed for this commodity, at least two trials compliant with the northern outdoor GAP and two trials compliant with the southern outdoor GAP are required;

Sunflower seeds: 10 trials are available to support the northern GAP for desiccation. However, only three of these trials provide data for metabolite AMPA. Therefore, five additional trials compliant with the northern outdoor GAP and analysing for the residue definition for enforcement and risk assessment are still required. In the meanwhile, MRL and risk assessment are derived on a tentative basis. In addition, eight trials compliant with the southern outdoor GAP and eight trials compliant with the import tolerance are also required;

Sesame seeds, pumpkins seeds, safflower seeds, gold of pleasure seeds, hemp seeds and castor beans: no residue trials are available. Although a no residue situation can be tentatively proposed for these commodities, at least two trials compliant with the northern outdoor GAP and two trials compliant with the southern outdoor GAP are required;

Borage seeds: no residue trials supporting the SEU outdoor GAP are available. Nevertheless, as the NEU GAP is clearly more critical, no additional trials supporting the SEU outdoor GAP are required;

Cotton seeds: only seven residue trials are available. Nevertheless, since the result of one additional trial is not expected to have significant impact on the derived MRL and risk assessment values, one additional trial compliant with the southern outdoor GAP is only desirable (minor deficiency);

Soyabeans: the import tolerance GAP for desiccation is supported by eight trials compliant with GAP (Germany, 2019). However, one additional trial performed with a sampling at a longer PHI (30 days instead of 7 days, all other parameters being compliant with GAP) showed a higher residue level (3.4 mg/kg) indicating that higher residue might be expected at longer PHI
(mainly due to concentration following dehydration of the crop). Considering that no decline studies were available, it was decided to consider also, this trial to derive MRL and risk assessment values. Nevertheless, at least four decline studies supporting the import tolerance GAP are still required and the MRL should be considered tentative. Furthermore, eight trials compliant with the northern outdoor GAP and eight trials compliant with the southern outdoor GAP are also still required;

- Olives for oil production: residues of AMPA were analysed only in four southern residue trials available. However, as AMPA was never detected at levels above the LOQ, no additional trials are required to support the southern outdoor GAP. Nevertheless, four additional trials compliant with the northern outdoor GAP are still required;

- Oil palm kernel: no residue trials are available. Nevertheless, residues are not expected in palm oil kernel after soil treatment on this crop (kernel is not directly exposed to possible spray drift and limited translocation has been observed in the metabolism studies). Therefore, a no residue situation can be anticipated for this crop and no additional trials are required.

- Oil palm fruits: no residue trials are available. Although a no residue situation can be tentatively proposed for this commodity, at least two trials compliant with the southern outdoor GAP are still required;

- Kapok: no residue trials are available. Nevertheless, residues are not expected in fruits after soil treatment on this crop (morphology of kapok trees prevent from drift contamination). Therefore, a no residue situation can be anticipated for this crop and no additional trials are required.

- Barley and oat (grain): although MRL and risk assessment values can be derived from the northern outdoor GAP, eight trials compliant with the import tolerance GAP are still required;

- Maize grain: the available trials supporting the import tolerance GAP on conventional maize were performed on genetically modified varieties maize. However, the RMS indicated that the genetic modification of those varieties is not linked to tolerance to glyphosate (Germany, 2019). Therefore, it can be reasonably expected that these varieties do not alter the metabolic pathway of glyphosate in plants. Thus, the data were deemed sufficient to derive MRL and risk assessment values and no further data are required to support this GAP. Nevertheless, four additional trials compliant with the northern GAP and eight trials compliant with the southern outdoor GAP are still required.

- Millet grain: the available trials supporting the import tolerance GAP on conventional millet were performed on genetically modified maize. However, the RMS indicated that the genetic modification of those varieties is not linked to tolerance to glyphosate (Germany, 2019). Therefore, it can be reasonably expected that these varieties do not alter the metabolic pathway of glyphosate in plants. Thus, the data were deemed sufficient to derive MRL and risk assessment values and no further data are required to support this GAP. Nevertheless, four trials compliant with the southern outdoor GAP are still required.

- Sorghum grain: tentative MRL and risk assessment values can be derived from the five trials supporting the import tolerance GAP. However, three additional trials supporting this GAP and eight trials compliant with the southern outdoor GAP are still required.

- Wheat and rye (grain): although MRL and risk assessment values can be derived from the northern outdoor GAP, eight trials compliant with the import tolerance are still required;

- Teas: residue trials which may support the import tolerance GAP were reported by the RMS (Germany, 2019). However, as the GAP for import tolerance is not clearly defined (growth stage at application or PHI is missing), it is not possible to use these trials to derive MRL and risk assessment values. Therefore, a clarification on the authorised GAP (growth stage at last treatment or PHI) and eight trials supporting this GAP are still required. In the meanwhile, a no residue situation can be tentatively proposed for this commodity on the basis of the southern outdoor GAP, provided that at least two trials compliant with the southern outdoor GAP could confirm this assumption; such trials are therefore also still required;

- Coffee beans: no residue trials are available. Nevertheless, since the application is done on soil before seedling, transplanting and after harvest, based on the metabolism study a no residue situation can be anticipated for this crop and no additional residue trials are required;

- Herbal infusions (from roots): no residue trials are available. Although a no residue situation can be tentatively proposed for this commodity, at least two trials compliant with the northern outdoor GAP and two trials compliant with the southern outdoor GAP are still required;

- Herbal infusions (from flowers), herbal infusions (from leaves and herbs): no residue trials are available. Although a no residue situation can be tentatively proposed for this commodity, at
least two trials compliant with the northern outdoor GAP and two trials compliant with the southern outdoor GAP are still required;

• Root and rhizome spices: no residue trials are available. Although a no residue situation can be tentatively proposed for this commodity, at least two trials compliant with the northern outdoor GAP and two trials compliant with the southern outdoor GAP are still required;

• Seed and fruits spices: no residue trials are available. Although a no residue situation can be tentatively proposed for this commodity, at least two trials compliant with the northern outdoor GAP and two trials compliant with the southern outdoor GAP are still required;

• Bark spices, bud spices, flower pistil spices, aril spices: no residue trials are available. Although a no residue situation can be tentatively proposed for this commodity, at least two trials compliant with the southern outdoor GAP are still required;

• Carobs: no residue trials are available. Nevertheless, residues are not expected in fruits after soil treatment on this crop (morphology of carob trees prevent from drift contaminations). Therefore, a no residue situation can be anticipated for this crop and no additional trials are required;

• Sugar beets (root and leaves): although MRL and risk assessment values can be derived from the northern outdoor GAP, eight residue trials compliant with the southern outdoor GAP are still required.

• Sugar canes: no residue trials are available. Although a no residue situation can be tentatively proposed for this commodity, at least two trials compliant with the southern outdoor GAP and eight trials compliant with the import tolerance are still required;

• Chicory roots: no residue trials are available. Although a no residue situation can be tentatively proposed for this commodity, at least two trials compliant with the northern outdoor GAP and the southern outdoor GAP are still required;

• Hops: no residue trials are available. Although a no residue situation can be tentatively proposed for this commodity, at least two trials compliant with the northern outdoor GAP and two trials compliant with the southern outdoor GAP are still required;

• Alfalfa forage: no residue trials are available. Although a no residue situation can be tentatively proposed for this commodity, at least two trials compliant with the northern outdoor GAP and two trials compliant with the southern outdoor GAP are still required;

• Clover forage: no residue trials are available. Although a no residue situation can be tentatively proposed for this commodity, at least two trials compliant with the northern outdoor GAP and two trials compliant with the southern outdoor GAP are still required;

• Grass forage: although MRL and risk assessment values can be derived from the northern outdoor GAP, two trials compliant with the southern outdoor GAP are still required.

It is noted that for the northern uses on fresh legumes, for the southern uses on cassava roots, yams, arrowroots, Jerusalem artichokes, parsnips, parsley, radishes, spring onions, sweet peppers, okra, cucurbits with edible and inedible peel, sweet corn, Chinese cabbages, kales, leafy vegetables and fresh herbs (except lamb’s lettuce, spinach, grape leaves, watercress and witloof), stem vegetables (except globe artichokes) and for the indoor GAPs on bulb vegetables, tomatoes, peppers, aubergines, okra, cucurbits with edible and inedible peel, leafy vegetables and fresh herbs (except watercress) and stem vegetables, the reported PHI of 30 days seems to be inconsistent with the information available in the comment field of the GAP table (application done in-between production period). Therefore, pending on the confirmation that the soil application is done pre-planting, pre-sowing and post-harvest, EFSA considered the PHI as the most relevant parameter for assessing the GAP.

EFSA highlight that for most of the crops under assessment, a no residue situation is strictly dependent on the risk mitigation measures that MSs will put in place to avoid spray drift. For this reason, MSs are strongly recommended to implement an adequate monitoring program allowing to verify the appropriateness of the risk mitigation in place.

Regarding the uses on EPSPS genetically modified crops, all available residue trials performed analysing only for glyphosate and AMPA were considered acceptable since N-acetyl-glyphosate and N-acetyl-AMPA are not expected in EPSPS crops. For most of the crops, available residue trials are sufficient to derive MRL and risk assessment values, taking note of the following considerations:

• Sweet corn: trials on sweet corn with three applications at 4, 0.86 and 1.7 kg/ha or with four applications at 1.5–1.8 kg/ha were considered acceptable since the first applications done at an early growth stage are not expected to have a significant impact on the final residue level.
Cotton seeds: trials on cotton seeds performed with higher dose rate at first application (3.3 instead of 1.7 kg/ha) considered acceptable since the first application done at an early growth stage is not expected to have a significant impact on the final residue level. Residues analysed only for glyphosate and AMPA are acceptable since N-acetyl-glyphosate and N-acetyl-AMPA are not expected in EPSPS crops.

Only one residue trial was available to support the GAP on sugar beetroots. Therefore, the following data gap was identified:

- Seven residue trials compliant with the import tolerance GAP for EPSPS-modified sugar beets.

Moreover, according to the EU Register of authorised GMOs, the import of EPSPS maize and EPSPS soyabean is authorised in EU. Nevertheless, as no import tolerances on these GM crops were reported by MSs during the GAP collection phase, it was not possible to derive an MRL based on these uses and the following data gaps were identified:

- Maize: GAP details and supporting residue trials for the currently authorised import tolerance on EPSPS maize;
- Soyabean: GAP details and supporting residue trials for the currently authorised import tolerance on EPSPS soyabean.

Regarding the uses on GOX genetically modified crops, an import tolerance GAP on rapeseed was reported by the RMS. This GAP was not supported by residue trials and the following data gap was identified:

- Eight residue trials compliant with the import tolerance GAP for GOX-modified rapeseeds.

Regarding the uses on GAT genetically modified crops, an import tolerance GAP and the supporting residue trials on rapeseed were reported by the RMS. However, according to the information available in the EU Register of authorised GMOs, GAT genetically modified rapeseed is currently not authorised for placing on the market within the EU. Therefore, GAP and supporting residue trials were reported for completeness but not considered further in the assessment.

Considering that the residue definitions for enforcement and risk assessment are different (see Section 1.1.6), EFSA also derived conversion factor from enforcement to risk assessment (CF). For all commodities other than sweet corn, cotton seed, sugar beets, rapeseed, maize and soyabean, the proposed residue definition for enforcement is glyphosate only (main proposal) while the residue definition for risk assessment also includes AMPA, N-acetyl-glyphosate and N-acetyl-AMPA. As none of the MRL derived under this section refer to GAP authorised on GAT genetically modified crop, the metabolites N-acetyl-glyphosate and N-acetyl-AMPA are not expected to be present. Therefore, CFs for these crops were derived based on the residue data available for metabolite AMPA:

- For all commodities where a no residue situation was demonstrated (based on residue trials) or tentatively assumed (based on waiver to be confirmed by data), neither glyphosate nor AMPA are expected to be present. Therefore, a CF of 1 could be (tentatively) proposed for these crops;
- For all commodities where metabolite AMPA was analysed in the residue trials and demonstrated to remain below LOQ (e.g. wheat grain), a CF of 1 was derived;
- Dry pulses (beans, peas, lentils, lupins): based on metabolism studies performed with applications as desiccant, the potential presence of AMPA cannot be excluded in these crops. In the available trials supporting the import tolerance GAP on dry beans and dry peas, metabolite AMPA was below the LOQ in all trials, except in one where it accounted for 10% of the parent compound. However, considering the uncertainty on the storage stability of AMPA in high protein matrices and the data gap for a detailed evaluation of the northern residue trials performed on dry beans, a conservative CF from enforcement to risk assessment of 2, as derived from the southern trials, was tentatively proposed. This CF may be refined in the future when data gaps identified for these crops will be fulfilled;
- Linseed: the available residue trials performed on rapeseed and compliant with GAP allow deriving a CF of 1.1 for this commodity. It is noted that residue levels of AMPA above the LOQ were quantified in one trial sample only;

10 At the time of finalisation of the present review, it is currently under assessment in the framework of Regulation (EC) No 1829/2003.
Review of the existing MRLs for glyphosate - revised version to take into account omitted data

- Sunflower seed: only three trials were performed with residue analysis for metabolite AMPA and they all indicate levels of AMPA to remain below the LOQ. However, as additional trials analysing for parent and AMPA are still required (see above) and considering that a CF of 1.1 was derived for other oilseed commodities (see linseed), a tentative CF of 1.1 is also applied to sunflower seed;
- Millet and sorghum grain: four trials supporting the northern outdoor GAP on these crops and analysing simultaneously for glyphosate and AMPA were available. In addition, 21 trials supporting the import tolerance GAP for millet and four trials supporting the import tolerance GAP for sorghum with simultaneous analysis of glyphosate and AMPA were available. Most of these trials indicate AMPA to be present above the LOQ and allow deriving a CF of 2.3 (for the northern outdoor GAP on millet and sorghum grain), a CF of 2 (for the import tolerance on millet) and a CF of 1 (for the import tolerance on sorghum).

For sweet corn, cotton seed, sugar beets, rapeseeds, maize and soyabean (crops with glyphosate tolerant genetically modified varieties currently available on the market) and for all MRLs expressed according to the optional residue definition, the proposed residue definition for enforcement already includes glyphosate, AMPA and N-acetyl-glyphosate. As none of the MRL derived for these commodities refer to GAP authorised on GAT genetically modified crops, metabolite N-acetyl-AMPA is not expected to be present. Therefore, CF of 1 was considered appropriate.

1.2.2. Magnitude of residues in rotational crops

Considering the degradation rates of glyphosate and its main soil metabolite AMPA (see Section 1.1.2), the maximum application rate of 4.32 kg/ha per year assessed in this review, a soil density of 1.5 kg/L, soil depth of 15 cm and no crop interception, the plateau concentration in soil (taking into account accumulation over the years) has been calculated as 0.2140 mg/kg for glyphosate and as 1.0359 mg/kg for AMPA. However, it is noted that a data gap for information regarding the degradation/dissipation rate of AMPA in acidic soils (pH 5–6) has been identified during the peer review (EFSA, 2015). Therefore, the plateau calculation for AMPA may need to be reconsidered once the confirmatory data addressing this data gap will be made available.

In the confined rotational crop study by Hattermann (Germany, 2015) performed with a bare soil application at 6.5 kg/ha (representing 1.5N the maximum application rate assessed in this review), samples contained substantial total radioactivity residues equivalent to glyphosate concentrations of up to 4.8 mg eq/kg (radish leaf planted at 30 days plant back interval (PBI) following bare soil application at 6.5 kg/ha and sampled 75 days after treatment (DAT)). However, in this sample, most of the radioactivity remained unextracted due to the incorporation of $^{14}$CO$_2$ from the degradation of glyphosate in soil. In the rotated leafy and root crops (radish leaf and roots and lettuce), absolute levels of glyphosate and AMPA were below the LOQ of 0.05 mg/kg at all PBIs and at all sampling times. In rotated cereals, residues of glyphosate were found at levels above the LOQ only in wheat forage (0.4 mg eq/kg at PBI of 120 days) and chaff (0.3 and 0.06 mg eq/kg at PBIs 120 and 365 days, respectively). Metabolite AMPA was present at absolute amounts of 0.2, 0.4 and 0.3 mg eq/kg in wheat forage, chaff and grain at PBI of 30 days; at absolute amounts of 0.1, 0.2 and 0.2 mg eq/kg in wheat forage, chaff and grain at 120 days PBI, while at the longest PBI of 365 days, AMPA decreased below the LOQ of 0.05 mg/kg in all wheat parts.

Although in the study by Hattermann, only TRR expressed as mg eq/kg soil were reported, individual levels of glyphosate and AMPA were available in other confined rotational crop studies where a characterisation of the residue in the soil was performed (studies by Spiller and Bowler, 1993 by Nicholls, 1990 reported in Germany, 2015). In particular, in the study by Spiller and Bowler, following application of glyphosate at 3.87 kg/ha, glyphosate accounted for a maximum of 2.11 mg/kg soil (at 0 DAT, immediately after application) and AMPA for a maximum of 0.84 mg/kg soil (34 DAT). In general, in these studies, immediately after the application, glyphosate and AMPA in soil account for an average of 60% and 4% of the TRR, respectively. After soil ageing, a degradation of glyphosate to AMPA is observed with glyphosate accounting for an average of 9% of the TRR in soil and AMPA for an average of 44% of the TRR. When considering this information, the maximum concentrations of glyphosate and AMPA in soil from the study by Hattermann could be estimated as 2.4 mg eq/kg soil for glyphosate (60% of the maximum TRR measured in 15 cm soil layer at day 0) and as 0.81 mg eq/kg soil for AMPA (44% of the maximum TRR measured in 15 cm soil layer at plant back interval of 120 days).

Hence, it can be concluded that the available rotational crop studies cover the plateau concentration in soil calculated for glyphosate and, therefore, the multiannual applications of
glyphosate. However, residues estimated in the soil for AMPA are not covering the calculated plateau concentration. As a consequence, following multiannual applications, accumulation of AMPA and possible uptake by crops grown in rotation cannot be excluded.

In conclusion, according to the results from the confined rotational crop studies performed up to 1.5N the maximum dose rate assessed in the present MRL review, residues of glyphosate or AMPA are not expected in rotational root and leafy crops following annual application of glyphosate, provided that the active substance is used according to the GAPs considered in this review. Residues of glyphosate and its metabolite AMPA above the LOQ of 0.05 mg/kg cannot be excluded in cereals grain (only AMPA), forage and chaff grown in rotation with crops treated with glyphosate. Although these residues can be considered negligible compared to the residues expected according to the most critical GAP for desiccation authorised on cereals, MSs are recommended to implement proper mitigation measures when granting authorisation of plant protection products containing glyphosate, in order to avoid residues to occur in rotated cereals. Moreover, as the available studies do not cover the plateau concentration calculated for AMPA, proper mitigation measures should also be implemented to avoid accumulation of AMPA in soil and possible uptake of AMPA in rotational crops. The plateau concentration calculated for AMPA should be in any case confirmed by an additional study performed in acidic soils (data gap identified in the peer review).

1.2.3. Magnitude of residues in processed commodities

Studies investigating the effect of processing on the magnitude of glyphosate residues in processed commodities from conventional crops were assessed in the conclusion on the peer review for the renewal of the approval (EFSA, 2015). Additional processing studies on conventional grass, soyabeans and sugar cane and on GAT modified crops were provided in the framework of this review and in its update (Germany, 2017, 2019). Regarding the conventional crops, robust processing factors for glyphosate could be derived for citrus juice, peel, dry pomace and press liquor; crude and refined olive oil; linseed oil and press cake; rye bran, flour, bread and middlings; wheat bran and flour and grass hay and silage; sugar cane bagasse, molasses, raw and refined sugar. When considering the residue definition for enforcement applicable to crops with glyphosate tolerant varieties available on the market (sum of glyphosate and N-acetyl glyphosate, expressed as glyphosate), robust processing factors were derived for crude and refined rapeseed oil and rape seed press cake; crude and refined maize oil and maize meal; soyabeans fat, hulls and crude oil. In all processing studies on conventional crops, residues were analysed for glyphosate and AMPA, allowing to derive CFs from enforcement to risk assessment. When residues of AMPA were below the LOQ, a CF of 1 was proposed for risk assessment.

No robust processing factors for enforcement and risk assessment could be derived for maize flour (sum of glyphosate and N-acetyl glyphosate, expressed as glyphosate); wheat wholemeal flour and bread, middlings, semolina and semolina bran (glyphosate), as they were not sufficiently supported by studies; a minimum of three processing studies is normally required. The processing factors reported in Appendix B for these commodities should therefore be considered as indicative only.

For genetically modified crops (GAT modification), robust processing factors could be derived for rapeseed refined oil and press cake only. For all other genetically modified crops, the number of studies was sufficient only to derive indicative processing factors.

Further processing studies are not required as they are not expected to affect the outcome of the risk assessment. However, if more robust processing factors were to be required by risk managers, in particular for enforcement purposes, additional processing studies would be needed.

1.2.4. Proposed MRLs

MRL and risk assessment values can be derived according to the two different residue definitions proposed in this review (main and optional).

The available data on conventional crops are considered sufficient to derive (tentative) MRL proposals as well as risk assessment values for all crops under assessment except for cultivated fungi, mustard seeds, buckwheat, rice (grain and straw), maize straw, millet straw and sorghum stover for which the available data were insufficient to derive MRLs and risk assessment values. Tentative MRLs were also derived for wheat and barley straw, sugar beet tops, fodder beetroots and tops, grass forage, clover forage, alfalfa forage and turnips tops in view of the future need to set MRLs in feed items.

For genetically modified crops, data were sufficient to derive MRL for sweet corn (EPSPS modification) and cotton seed (EPSPS modification), noting that MRLs should be tentative pending on
the submission of confirmatory methods for enforcement of AMPA and N-acetyl-glyphosate. For sugar beetroots, maize and soya beans (EPSPS modification) and rapeseeds (GOX modification), the available data were insufficient to derive MRLs and risk assessment values.

When considering the optional residue definition, in the absence of confirmatory methods for enforcement of AMPA (in all matrices) and N-acetyl-glyphosate (in high water content, high fat content and dry matrices), only tentative MRLs could be derived.

2. Residues in livestock

Glyphosate is authorised for use on several crops that might be fed to livestock. Livestock dietary burden calculations were therefore performed for different groups of livestock according to OECD guidance (OECD, 2013), which has now also been agreed upon at European level. Considering that livestock may be exposed to residues originating from conventional and genetically modified crops, the calculation of the livestock dietary burden was performed combining the residues originating from the uses authorised on conventional crops and on genetically modified crops. Therefore, for each feed item, risk assessment values obtained for conventional and genetically modified crops were compared and the most critical values selected for the exposure calculation. For the calculation of the dietary burden, EFSA considered a worst-case scenario where, for each crop, the highest calculated CF was applied to the risk assessment values (highest residue (HR) and supervised trials median residue (STMR)) from the more critical GAP. The input values for all relevant commodities are summarised in Appendix D.1. The dietary burden values calculated for all groups of livestock were found to exceed the trigger value of 0.1 mg/kg dry matter (DM), with the residues in conventional crops representing the main contributors to livestock exposure. Behaviour of residues was therefore assessed in all commodities of animal origin.

It is highlighted that for several feed items, no residue data were available (e.g. maize stover, millet straw, rice grain and straw and sorghum stover). The animal intake of glyphosate residues via these commodities has therefore not been assessed and may have been underestimated. However, this is not expected to have a major impact on the outcome of the dietary burden considering the overwhelming contribution of grass forage and wheat straw.

2.1. Nature of residues and methods of analysis in livestock

Several livestock metabolism studies on goat and hen using glyphosate and AMPA labelled on the phosphonomethyl-moiety and conducted with glyphosate, glyphosate-trimesium or with a 9:1 glyphosate:AMPA mixture were evaluated during the peer review (Germany, 2015). In these studies, parent glyphosate was identified as the major component of the radioactive residues, accounting for 21–99% TRR in all animal matrices and AMPA was detected in significant proportions in liver (up to 36% TRR), muscle and fat (up to 19% TRR) and egg yolk (14% TRR). Additional metabolism studies on goat and hens were also provided in the framework of this review (Germany, 2017). Although these studies can only be used as additional information, due to the poor methodology used for the identification of radioactive residues, they confirmed that glyphosate is not significantly metabolised in ruminants and poultry, accounting for 88–91% TRR. It is noted that all the available metabolism studies on ruminants were performed with a lower dose rate compared to the calculated dietary burdens. Nevertheless, considering that in the available studies residues were well characterised and the metabolic pattern clearly elucidated, additional metabolism studies are not required.

In addition, in order to address the animal metabolism of residues derived from genetically modified crops, metabolism studies on goat and hen using 14C-N-acetyl-glyphosate were also evaluated during the peer review. In these studies, N-acetyl-glyphosate was identified as the major component of the radioactive residues, accounting for 17–77% TRR. Degradation to N-acetyl-AMPA was observed in fat (10–15% TRR), to glyphosate in liver (15% TRR), poultry fat (37% TRR) and egg white (11% TRR) and to AMPA in poultry muscle and fat (11–17% TRR).

The following residue definitions were agreed upon by MSs at the SCOPAFF meeting in September 2016 and are considered in this review: sum of glyphosate, AMPA and N-acetyl-glyphosate expressed as glyphosate for monitoring, and sum of glyphosate, AMPA, N-acetyl-glyphosate and N-acetyl-AMPA expressed as glyphosate for risk assessment. No information on the metabolism of the trimethyl-sulfonium cation has been submitted in the framework of this MRL review and in the peer review for the renewal.
During the peer review, a high-performance liquid chromatography with tandem mass spectrometry (HPLC-MS/MS) analytical method and its independent laboratory validation (ILV) were assessed for the enforcement of glyphosate, AMPA and N-acetyl-glyphosate at the combined LOQs\(^{11}\) of 0.1 mg/kg (corresponding to an LOQ of 0.025 mg/kg for each compound) in meat, milk and egg and 0.2 mg/kg (corresponding to an LOQ of 0.05 mg/kg for each compound) in liver, kidney and fat. A confirmatory gas chromatography with mass spectrometry (GC-MS) method is, however, only available for glyphosate in milk, eggs and meat. Therefore, a confirmatory method for glyphosate in fat and liver and kidney, as well as a confirmatory method for AMPA and N-acetyl-glyphosate in all matrices, are still missing. According to the information provided by the EURLs, sufficient validation data are not currently available for the routine enforcement of the proposed residue definition in animal commodities (EFSA, 2018a).

Information on the availability of a fully validated analytical method for the enforcement of trimethyl-sulfonium cation in the animal commodities, against illegal uses, is not available to EFSA.

During the peer review, the storage stability of glyphosate and AMPA was investigated in all animal commodities and it was concluded that glyphosate and AMPA are stable in meat, fat, liver and kidney for up to 26 months when samples were stored at \(\text{–}20^\circ\text{C}\). At the same storage temperature, residues of glyphosate and AMPA were found to be stable for 16 and 14 months in milk and eggs, respectively. The storage stability of N-acetyl-AMPA and N-acetyl-glyphosate was not investigated.

It is noted that, as underlined for plants, since the acetyl compounds are specific for GAT-modified crops only and GAT-modified crops are currently not on the EU market, the inclusion of N-acetyl-glyphosate in the residue definition for enforcement may be reconsidered and a separate residue definition comprising N-acetyl glyphosate only could be defined. This would allow risk managers to set a lower LOQ for the enforcement in all animal commodities and to identify any possible misuses of genetically modified GAT crops by the analysis of the N-acetyl glyphosate.

### 2.2. Magnitude of residues in livestock

Feeding studies conducted on dairy cows and laying hens fed with either glyphosate, glyphosate-trimesium or a 9:1 glyphosate:AMPA mixture were evaluated in the framework of the peer review. A feeding study on pig using the glyphosate:AMPA mixture was also provided (Germany, 2015). In all the available feeding studies, residues were analysed for glyphosate and AMPA only while N-acetyl-compounds were not analysed. As GAT modified crops are currently not on the EU market, all feeding studies can be considered suitable to derive MRL and risk assessment values. Nevertheless, the study on cows dosed with glyphosate-trimesium at 1.4, 7.38 and 19.4 mg glyphosate equivalent/kg body weight (bw) per day was considered the most suitable to derive MRL and risk assessment values for ruminants since dose spacing matches the calculated dietary burdens as best as possible. For poultry and pigs, the studies performed with glyphosate and AMPA were considered instead. The results of AMPA from these studies were recalculated as glyphosate considering the molecular factor of 1.5\(^{12}\). All samples from the livestock feeding studies were stored in compliance with the demonstrated storage stability conditions.

Based on these studies and the estimated residue intakes by livestock, MRLs above the LOQ were proposed for all animal commodities, except for cattle, swine and poultry fat, poultry liver, milk and eggs where no residues are expected and the MRLs can be set at the LOQ. Considering that the N-acetyl compounds are not expected to be present in the animal tissues, a CF from enforcement to risk assessment of 1 has been proposed for all animal commodities. Since confirmatory methods for glyphosate in fat, liver and kidney, and for AMPA and N-acetyl-glyphosate in all matrices are still missing, all derived MRLs should be considered tentative only.

### 3. Consumer risk assessment

In the framework of this revised review, only the uses of glyphosate reported by the RMS in Appendix A were considered; however, the use of glyphosate was previously also assessed by the JMPR (FAO, 2005, 2011, 2013). The CXLs, resulting from these assessments by JMPR and adopted by the CAC, are now international recommendations that need to be considered by European risk managers when establishing MRLs. To facilitate consideration of these CXLs by risk managers, the consumer exposure was calculated both with and without consideration of the existing CXLs.

\(^{11}\) The combined LOQ was calculated considering the sum of LOQs and molecular factors of 1.5 (to convert AMPA to glyphosate) and 0.8 (to convert N-acetyl-AMPA to glyphosate).

\(^{12}\) Molecular weight of glyphosate (169.1 g/mol)/molecular weight of AMPA (111.1 g/mol).
3.1. Consumer risk assessment without consideration of the existing CXLs

Chronic and acute exposure calculations for all crops reported in the framework of this review were performed using revision 2 of the EFSA PRIMo (EFSA, 2007). For each commodity, risk assessment values obtained for conventional and genetically modified crops were compared and the most critical values were selected for the exposure calculations. Input values for the exposure calculations were derived in compliance with the decision tree reported in Appendix E. Hence, for those commodities where an (tentative) MRL could be derived by EFSA in the framework of this review, input values were derived according to the internationally agreed methodologies (FAO, 2009).

The CFs derived in Sections 1 and 2 were used to convert the residues from enforcement to risk assessment residue definition. EFSA considered a worst-case scenario where, for each commodity, the highest calculated CF was applied to the risk assessment values (HR and STMR) of the more critical GAP. For those plant commodities where data were insufficient to derive MRLs in Section 1, the existing EU MRLs multiplied by the following CFs were used for an indicative calculation: for mustard seed, the conversion of 1.1 derived from residue trials performed on other oilseeds was considered; for buckwheat and rice grain, the conversion of 2.3 derived from residue trials performed on other cereals was considered. For cultivated fungi, the highest CF of 2.3 derived from all available trials was considered. All input values included in the exposure calculations are summarised in Appendix D.2.

The exposure values calculated were compared with the toxicological reference values for glyphosate and its metabolites, derived by EFSA (2015) under Commission Regulation (EU) No 1141/2010 as amended by Commission Implementing Regulation (EU) No 380/2013 and in the framework of the evaluation of the impact of glyphosate and its residues in feed on animal health (EFSA, 2018b). The highest chronic exposure was calculated for Irish adults, representing 3.7% of the acceptable daily intake (ADI) and the highest acute exposure was calculated for dry beans, representing 80.4% of the acute reference dose (ARfD).

Consequently, although major uncertainties remain due to the data gaps identified in the previous sections, the indicative exposure calculations did not indicate a risk to consumers.

It is noted that MRLs were derived for two different monitoring residue definitions (main and optional). Although the residue definition for risk assessment is the same in both cases, the MRLs as derived according to the optional definition (i.e. including glyphosate, AMPA and N-acetyl-glyphosate) can be higher than the MRLs as derived according to the main residue definition (glyphosate only). In particular, with the optional residue definition, a higher LOQ applies to all commodities for which a no residue situation can be anticipated. For this reason, an additional scenario, based on the optional residue definition, was performed. According to this second scenario, the highest chronic exposure was calculated for Irish adults, representing 4.4% of the ADI and the acute highest exposure was calculated for dry beans, representing 80.4% of the ARfD.

3.2. Consumer risk assessment with consideration of the existing CXLs

To include the CXLs in the calculations of the consumer exposure, CXLs were compared with the EU MRL proposals in compliance with Appendix E and all data relevant to the consumer exposure assessment have been collected from JMPR valuations. An overview of the input values used for this exposure calculation is also provided in Appendix D.3.

As done in Section 3.1, also for the assessment of the existing CXLs, two different scenarios were considered: a first scenario based on the main residue definition for monitoring and a second scenario based on the optional residue definition for monitoring.

When considering the main residue definition for monitoring, CXLs for bananas, dry beans, dry lentils, dry peas, sunflower seeds, barley, buckwheat, millet, oats, rye, sorghum, wheat and sugar canes, which are defined for glyphosate only, are in line with the residue definition derived by EFSA under this review. Therefore, for these commodities, comparison between existing CXLs and the EU MRLs derived according to the main residue definition was possible and these CXLs could be considered in an exposure scenario (scenario 1).

When considering the optional residue definition for monitoring (sum of glyphosate, AMPA and N-acetyl-glyphosate, expressed as glyphosate also extended to conventional crops), commodities for which residues of AMPA and/or N-acetyl compounds above the LOQ may occur according to the data available in the JMPR report(s), could not be considered comparable with the EU MRLs. Therefore, CXLs for dry beans, dry lentils, dry peas, sunflower seeds and sugar canes could not be included in the risk assessment (scenario 2).
For commodities where glyphosate tolerant varieties are currently available on the market (sweet corn, cotton seeds, sugar beets, rapeseeds, maize and soyabeans) and for the animal commodities, it is noted that the residue definition proposed by EFSA is the same in both scenarios (sum of glyphosate, AMPA and N-acetyl-glyphosate, expressed as glyphosate). Therefore, considerations on the comparability of the EU MRLs and these CXLs are the same in both scenarios. For these commodities, the residue definitions applying to CXLs differ from the residue definition derived by EFSA. The residue definition for monitoring proposed by EFSA is the sum of glyphosate, AMPA and N-acetyl-glyphosate, expressed as glyphosate, while the residue definitions for monitoring for the CXLs are more restrictive. In particular, the CXL residue definition for monitoring does not include AMPA for all commodities and is even more restrictive for sweet corn, cottons seeds, soyabeans and sugar beets for which is defined as glyphosate only. Possible inclusion of CXLs in the consumer exposure was assessed on a case-by-case basis:

- Rape seed and sugar beets: the absence of AMPA (and N-acetyl-glyphosate) in the CXL residue definitions is not considered as an issue since the available data in the JMPR report indicate that these metabolites are not expected in these commodities. Indeed, a CF of 1 for enforcement to risk assessment was considered by the JMPR (FAO, 2011, 2013). Therefore, it was possible to include these CXLs in the risk assessment assuming that the residue definition derived by EFSA can also apply to the CXLs of rapeseed and sugar beets. It should be noted that the CXL for rapeseed is derived from trials compliant with a GAP on GAT modified rapeseeds.
- Sweet corn, cotton seeds, soyabeans and maize: the JMPR assessment indicates that significant levels of metabolite AMPA and/or N-acetyl-glyphosphate may occur (CF > 1 were derived by JMPR). Therefore, these CXLs could not be considered further in the assessment.
- Livestock commodities: metabolite AMPA is not included in the CXL residue definition while it was considered relevant in the EU assessment. However, only the CXLs for liver of swine, ruminants and poultry were found to be higher than the MRLs derived in Section 2. Since the dietary burden calculations based on the EU GAPs were found to be higher or comparable with the dietary burden reported in the JMPR assessment (FAO, 2005), this difference is considered linked to different approach in the extrapolation rules between EU and JMPR. Therefore, the MRLs for livestock as derived from the EU uses and import tolerance are expected to cover the residues in livestock derived by the JMPR and no further consideration of these CXLs is necessary.

When considering the main residue definition (scenario 1), the highest chronic exposure was calculated for British toddlers, representing 18.8% of the ADI; the highest acute exposure was calculated for sugar beetroots, representing 91% of the ARfD.

When considering the optional residue definition (scenario 2), the highest chronic exposure was calculated for British toddlers, representing 19.1% of the ADI; the highest acute exposure was calculated for sugar beetroots, representing 91% of the ARfD.

Based on these calculations, EFSA considers that the CXLs for glyphosate that could be assessed in this review are not expected to pose a risk to European consumers.

Conclusions

It is highlighted that toxicological data were not assessed in the current review and that the present Reasoned opinion does not address the toxicological profile of glyphosate and its metabolites. In line with the provisions of Regulation (EC) No 396/2005, this review of MRLs is intended to characterise and quantify the residues of glyphosate in food and feed of plant and animal origin (resulting from the uses of glyphosate currently authorised by Member States), estimate dietary exposure of consumers, compare this dietary exposure to the toxicological reference values derived by EFSA in 2015 (for glyphosate and AMPA) and in 2018 (for N-acetyl glyphosate and N-acetyl AMPA) and propose MRLs in case no concern for consumers is identified, also highlighting the uncertainties due to missing data.

The metabolism of glyphosate in primary crops was assessed in conventional and glyphosate tolerant crops containing EPSPS and GOX modifications belonging to different crop groups as well as in genetically modified soyabeans, maize and oilseed rape containing the GAT modification. Additional metabolism studies performed on conventional and EPSPS modified soyabeans, cotton and maize were submitted by the RMS in the framework of this review. The metabolism in rotational crops (leafy vegetables, root and tuber vegetables and cereals) was investigated following glyphosate application directly to the soil or simulating typical agricultural practices.
In September 2016, during the Standing Committee on Plants, Animals, Food and Feed (SCoPAFF) meeting, the following residue definitions for enforcement were agreed upon by MSs as the basis for the MRL review:

**OPTION 1:**
- for all plant commodities, including plants with glyphosate tolerant genetically modified varieties currently available on the market: sum of glyphosate, AMPA and \( N \)-acetyl-glyphosate, expressed as glyphosate;

**OPTION 2:**
- for plants with glyphosate tolerant genetically modified varieties currently available on the market (sweet corn, cotton seeds, sugar beets, rapeseed, maize and soyabeans): sum of glyphosate, AMPA and \( N \)-acetyl-glyphosate, expressed as glyphosate;
- for all other plant commodities: glyphosate.

For risk assessment, a general residue definition covering both conventional and genetically modified crops was proposed as the sum of glyphosate, AMPA, \( N \)-acetyl-glyphosate and \( N \)-acetyl-AMPA, expressed as glyphosate.

Although EFSA based this assessment on both residue definitions as agreed by MSs (options 1 and 2), EFSA agrees with the RMS that glyphosate only can be considered a sufficient marker for enforcement in conventional crops. For this reason, in the whole assessment, the option 2 is defined as the ‘main’ residue definition, while the option 1 is reported as ‘optional’.

Sufficiently validated analytical methods are available for the enforcement of glyphosate (relevant for the main residue definition), with a LOQ of 0.05 mg/kg in high water, high oil, acidic and dry matrices. Fully validated analytical methods for the enforcement of glyphosate in complex matrices (relevant for the authorisations on conventional tea, coffee beans, carobs, hops, spices and herbal infusions) are missing and are still required. Furthermore, there are indications that AMPA and \( N \)-acetyl-glyphosate (relevant for the optional residue definition proposed for all plant commodities and for genetically modified crops) can be enforced with an LOQ of 0.05 mg/kg, each. Therefore, the sum of glyphosate, AMPA and \( N \)-acetyl-glyphosate, expressed as glyphosate can be enforced at the combined LOQ of 0.2 mg/kg in all matrices. Nevertheless, confirmatory methods for \( N \)-acetyl-glyphosate (in high water and high fat content matrices and dry commodities) and for AMPA (in all matrices) are still required.

Regarding the residue in primary crops, the available data on conventional crops are considered sufficient to derive (tentative) MRL proposals as well as risk assessment values for all crops under assessment except for cultivated fungi, mustard seeds, buckwheat, rice (grain and straw), maize straw, millet straw and sorghum stover for which the available data were insufficient to derive MRLs and risk assessment values. Tentative MRLs were also derived for wheat and barley straw, sugar beet tops, fodder beetroots and tops, grass forage, clover forage, alfalfa forage and turnips tops in view of the future need to set MRLs in feed items.

For genetically modified crops, data were sufficient to derive MRL for sweet corn (EPSPS modification) and cotton seed (EPSPS modification), noting that MRLs should be tentative pending on the submission of confirmatory methods for enforcement of AMPA and \( N \)-acetyl-glyphosate. For sugar beetroots, maize and soyabeans (EPSP modification) and rapeseed (GOX modification), the available data were insufficient to derive MRLs and risk assessment values.

When considering the optional residue definition, in the absence of confirmatory methods for enforcement of AMPA (in all matrices) and \( N \)-acetyl-glyphosate (in high water content, high fat content and dry matrices), only tentative MRLs could be derived.

Available residue trials also allowed to derive the following CFs from enforcement to risk assessment:
- 1 for all commodities where a no residue situation was demonstrated or was tentatively proposed, for crops with glyphosate tolerant genetically modified varieties currently available on the market (sweet corn, cotton seed, sugar beets, rapeseed, maize and soyabeans) and for all MRLs expressed according to the optional residue definition; 2 for dry pulses; 1.1 for linseed; 2.3 for millet and sorghum grain.

According to the results from the confined rotational crop studies performed up to 1.5N the maximum dose rate assessed in the present MRL review, residues of glyphosate or AMPA are not expected in rotational root and leafy crops following annual application of glyphosate, provided that the active substance is used according to the GAPs considered in this review. Residues of glyphosate and its metabolite AMPA above the LOQ of 0.05 mg/kg cannot be excluded in cereals grain (only AMPA), forage and chaff grown in rotation with crops treated with glyphosate. Although these residues
can be considered negligible compared to the residues expected according to the most critical GAP for desiccation authorised on cereals, MSs are recommended to implement proper mitigation measures when granting authorisation of plant protection products containing glyphosate, in order to avoid residues to occur in rotated cereals. Moreover, as the available studies do not cover the plateau concentration calculated for AMPA, proper mitigation measures should also be implemented to avoid accumulation of AMPA in soil and possible uptake of AMPA in rotational crops. The plateau concentration calculated for AMPA should be in any case confirmed by an additional study performed in acidic soils (data gap identified in the peer review).

Glyphosate is authorised for use on several crops that might be fed to livestock. Livestock dietary burden calculations were therefore performed for different groups of livestock. Considering that livestock may be exposed to residues originating from conventional and genetically modified crops, the calculation of the livestock dietary burden was performed combining the residues originating from the uses authorised on conventional crops and on genetically modified crops. The dietary burden values calculated for all groups of livestock were found to exceed the trigger value of 0.1 mg/kg DM, with the residues in conventional crops representing the main contributor to livestock exposure. Behaviour of residues was therefore assessed in all commodities of animal origin.

Several livestock metabolism studies on goat and hen using glyphosate and AMPA labelled on the phosphonomethyl-moiety and conducted with glyphosate, glyphosate-trimesium or with a 9:1 glyphosate:AMPA mixture were evaluated during the peer review. In addition, in order to address the animal metabolism of residues derived from genetically modified crops, metabolism studies on goat and hen using 14C-N-acetyl-glyphosate were also evaluated during the peer review.

The following residue definitions for animal commodities were agreed upon by MSs at the SCOPAFF meeting in September 2016 and are considered in this MRL review: sum of glyphosate, AMPA and N-acetyl-glyphosate expressed as glyphosate for monitoring, and sum of glyphosate, AMPA, N-acetyl-glyphosate and N-acetyl-AMPA expressed as glyphosate for risk assessment.

During the peer review, a HPLC-MS/MS analytical method and its ILV were assessed for the enforcement of glyphosate and N-acetyl-glyphosate at the combined LOQ of 0.05 mg/kg in meat, milk and egg, and 0.1 mg/kg in liver, kidney and fat. A confirmatory GC-MS method is, however, only available for glyphosate in milk, eggs and meat. Therefore, a confirmatory method for glyphosate in fat, liver and kidney, as well as a confirmatory method for AMPA and N-acetyl-glyphosate in all matrices, are still missing.

Based on available feeding studies and the estimated residue intakes by livestock, MRLs above the LOQ were proposed for all animal commodities, except for cattle, swine and poultry fat, poultry liver, milk and eggs where no residues are expected and the MRLs can be set at the LOQ. Considering that the N-acetyl compounds are not expected to be present in the animal tissues, a CF from enforcement to risk assessment of 1 has been proposed for all animal commodities. Since confirmatory methods for glyphosate in fat, liver and kidney, and for AMPA and N-acetyl-glyphosate in all matrices are still missing, all derived MRLs should be considered tentative only.

Chronic and acute consumer exposure resulting from the authorised uses on conventional and genetically modified crops reported in the framework of this revised review was calculated using revision 2 of the EFSA PRIMO. For each commodity, risk assessment values obtained for conventional and genetically modified crops were compared and the most critical values were selected for the exposure calculations. Hence, for those commodities where an (tentative) MRL could be derived by EFSA in the framework of this review, input values were derived according to the internationally agreed methodologies. For those plant commodities where data were insufficient to derive (tentative) MRLs, the existing EU MRLs multiplied by the following CFs were used for an indicative calculation: for mustard seed, the conversion of 1.1 derived from residue trials performed on other oilseeds was considered; for buckwheat and rice grain, the conversion of 2.3 derived from residue trials performed on other cereals was considered. For cultivated fungi, the highest CF of 2.3 derived from all available trials was considered.

The exposure values calculated were compared with the toxicological reference values for glyphosate and its metabolites, derived by EFSA under Commission Regulation (EU) No 1141/2010 as amended by Commission Implementing Regulation (EU) No 380/2013 and in the framework of evaluation of the impact of glyphosate and its residues in feed on animal health. The highest chronic exposure was calculated for Irish adults, representing 3.7% of the ADI and the highest acute exposure was calculated for dry beans, representing 80.4% of the ARFD.

Consequently, although major uncertainties remain due to the data gaps identified in the previous sections, the indicative exposure calculations did not indicate a risk to consumers.
Although the residue definition for risk assessment is the same for both options assessed in this review, the MRLs as derived according to the optional definition and resulting for the summing up of the LOQs of the different compounds included, can be higher than the MRLs as derived according to the main residue definition. For this reason, an additional scenario, based on the optional residue definition, was performed. According to this second scenario, the highest chronic exposure was calculated for Irish adults, representing 4.4% of the ADI and the highest acute exposure was calculated for dry beans, representing 80.4% of the ARfD.

Apart from the MRLs evaluated in the framework of this review, internationally recommended CXLs have also been established for glyphosate. Additional calculations of the consumer exposure, including these CXLs, were therefore carried out, considering two different scenarios: a first scenario based on the main residue definition and a second scenario based on the optional residue definition.

When considering the main residue definition (scenario 1), the highest chronic exposure was calculated for British toddlers, representing 18.8% of the ADI; the highest acute exposure was calculated for sugar beetroots, representing 91% of the ARfD.

When considering the optional residue definition (scenario 2), the highest chronic exposure was calculated for British toddlers, representing 19.1% of the ADI; the highest acute exposure was calculated for sugar beetroots, representing 91% of the ARfD.

In order to support risk managers in the decision-making process, EFSA also evaluated the import tolerances on GAT modified rapeseeds, soyabeans and maize not present on the EU market but assessed in previous EFSA Reasoned opinions. Based on the results of the studies on the magnitude of residues in plant and animal commodities, the MRLs proposed in the MRL review for plant and animal commodities are expected to cover the intended uses on GAT crops for rapeseed and maize but not for soyabeans. Therefore, the consumer risk assessment performed in the MRL review was updated considering the higher residues levels potentially arising from GAT modified soyabeans. It was concluded that the short-term and long-term intake of residues resulting from the intended uses on GAT soyabeans, maize and rapeseeds is unlikely to present a risk to consumer health.

**Recommendations**

Considering that two separate residue definitions were derived for enforcement purposes, two lists of MRLs are proposed:

- **Main residue definition:** MRL recommendations were derived in compliance with the decision tree reported in Appendix E of the Reasoned opinion (see Table 2). All MRL values listed as ‘Recommended’ in the table are sufficiently supported by data and are therefore proposed for inclusion in Annex II to the Regulation. The remaining MRL values listed in the table are not recommended for inclusion in Annex II because they require further consideration by risk managers (see Table 2 footnotes for details).

- **Optional residue definition:** MRLs derived for this residue definition take into account AMPA and N-acetyl-glyphosate in all plant and animal commodities and are listed in Table 3. Due to the major data gaps identified in the assessment, MRL values listed in this table are not recommended for inclusion in Annex II because they require further consideration by risk managers (see Table 3 for details). The indicative risk assessment for this optional residue definition showed similar outcome compared to the main proposal. It is also noted that glyphosate only is a sufficient marker in all commodities other than sweet corn, cotton seeds, rapeseeds, maize, soyabeans and sugar beets. However, if risk managers consider that enforcement of AMPA and N-acetyl-glyphosate in all commodities is necessary, the optional list of MRLs is available below.

**Tentative MRLs and existing EU MRLs need to be confirmed by the following data:**

- Additional residue trials on strawberries, cane fruits, other small fruits and berries, potatoes, tropical roots and tuber vegetables, beetroots, celeriacs, horseradishes, Jerusalem artichokes, parsnips, parsley roots, radishes, salsifies, swedes, turnips, sweet potatoes, bulb vegetables, sweet peppers, cultivated fungi, okras, cucurbits with edible and inedible peel, brassica vegetables, leafy vegetables and fresh herbs, asparagus, leeks, celeries, cardoons, Florence fennels, rhubarbs, bamboo shoots, palm hearts, peanuts, poppy seeds, sesame seeds, sunflower seeds, soyabeans, mustard seeds, pumpkin seeds, safflower seeds, gold of pleasure seeds, hemp seeds, castor beans, oil palm fruits, rice, maize, teas, herbal infusions and spices, hops and chicory roots (relevant for main and optional residue definition);
Fully validated analytical methods for the enforcement of glyphosate in complex matrices (relevant for the authorisations on hops, tea, coffee beans, carobs, spices and herbal infusions);

Confirmatory methods for N-acetyl-glyphosate (in high water and high fat content matrices and dry commodities) and for AMPA (in all matrices) (relevant for all commodities when considering the optional residue definition and for the authorisations on genetically modified crops currently on the market: sweet corn, cotton seeds, rapeseeds, maize, soyabeans and sugar beets);

Summaries of the trials supporting the northern outdoor GAP for dry pulses (relevant for main and optional residue definition);

A confirmatory method for glyphosate in fat and liver and kidney, as well as a confirmatory method for AMPA and N-acetyl-glyphosate in all animal matrices (relevant for main and optional residue definition).

It is highlighted that some of the MRLs derived result from a CXL or from a GAP in one climatic zone only, whereas other GAPs reported by the RMS were not fully supported by data. EFSA therefore identified the following data gaps which are not expected to impact on the validity of the MRLs derived but which might have an impact on national authorisations:

- Additional residue trials on table olives, carrots, tomatoes, aubergines, sweet corn, beans and peas (with pods), beans and peas (without pods), lentils (fresh), globe artichoke, dry pulses, rapeseeds, linseeds, olives for oil production, barley, oats, millet, sorghum, wheat, rye, buckwheat, sugar beets root and leaves, sugar cane, alfalfa, clover and grass forage, rape seed (import tolerance for GOX), sugar beets (import tolerance for EPSPS) (relevant for main and optional residue definition);

- GAP details and supporting residue trials for the currently authorised import tolerance on the following genetically modified crops: ESPSP soyabeans and ESPSP maize (relevant for main and optional residue definition).

If the above reported data gaps are not addressed in the future, Member States are recommended to withdraw or modify the relevant authorisations at national level.

Minor deficiencies were also identified in the assessment, but these deficiencies are not expected to impact either on the validity of the MRLs derived or on the national authorisations. The following data are therefore considered desirable but not essential:

- Studies investigating the storage stability of AMPA in high protein content matrices (relevant for the authorisations on dry pulses; relevant for main and optional residue definition);

- One additional trial compliant with the southern outdoor GAP for cotton seeds (relevant for main and optional residue definition).

It is also noted that for the northern uses on fresh legumes, for the southern uses on cassava roots, yams, arrowroots, Jerusalem artichokes, parsnips, parsley, radishes, spring onions, sweet peppers, okra, cucurbits with edible and inedible peel, sweet corn, Chinese cabbages, kales, leafy vegetables and fresh herbs (except lamb's lettuce, spinaches, grape leaves, watercress and witloof), stem vegetables (except globe artichokes) and for the indoor GAPs on bulb vegetables, tomatoes, peppers, aubergines, okra, cucurbits with edible and inedible peel, leafy vegetables and fresh herbs (except watercress) and stem vegetables, the reported PHI of 30 days seems to be inconsistent with the information available in the comment field of the GAP table (application done in-between production period). Therefore, the confirmation that the soil application is done pre-planting, pre-sowing and post-harvest is still required from MSs authorising these GAPs. For the time being, EFSA considered the PHI as the most relevant parameter for assessing these GAPs.

When granting plant protection products containing glyphosate, MSs are recommended to implement proper risk mitigation measures, in order to avoid the spray drift and cross-contamination in the primary crops, residues to occur in rotated cereals and possible uptake of AMPA by rotational crops.

EFSA emphasises that for most of the crops under assessment, a no residue situation is strictly dependent on the risk mitigation measures that MSs will put in place. For this reason, MSs are strongly recommended to implement an adequate monitoring program allowing to verify the appropriateness of the risk mitigation in place.

Furthermore, analysis in cereals straw show high residue levels in these matrices and experience with other substances has shown that cultivated fungi (e.g. champignons) may be ‘contaminated’ when cultivated on cereals straw used as substrate. Therefore, in order to avoid cross-contamination from straw in cultivated fungi, MSs are recommended to implement proper risk mitigation measures

www.efsa.europa.eu/efsajournal 30 EFSA Journal 2019;17(10):5862
(e.g. do not use straw from cereals treated with glyphosate as substrate for the cultivation of fungi), or to reconsider the more critical uses currently authorised on cereals.

It is highlighted that GAT modified crops are currently not present on the EU market. As a consequence, the inclusion of N-acetyl-glyphosate in the residue definitions for enforcement in plant and animal may be reconsidered and a separate residue definition comprising N-acetyl glyphosate only could be defined. This would allow risk managers to set a lower LOQ for the enforcement in genetically modified crops and in animal commodities, and to identify any possible misuses of genetically modified GAT crops by the analysis of the N-acetyl glyphosate. It is noted that, in case risk managers wish to restrict the residue definition to glyphosate and AMPA only, this is not expected to have an impact on the risk assessment performed in the present review.

Furthermore, according to the information received in this review, glyphosate-trimesium is currently not authorised for use and existing EU MRLs for trimethyl-sulfonium cation higher than the LOQ are in principle no longer required. Considering that the enforcement against potential illegal uses falls under the remit of risk managers, EFSA is not in a position to recommend whether the default MRL of 0.01 mg/kg, as defined by Regulation (EC) No 396/2005, should apply or whether the setting of a specific LOQ is necessary. Available data indicate that trimethyl-sulfonium is the most relevant indicator for enforcement against potential illegal uses in primary crops. The metabolism of the trimethyl-sulfonium cation in livestock and the analytical methods for the enforcement of this compound in plant and animal commodities were not assessed during the peer review for renewal and in the MRL review. Nevertheless, according to the information provided by the EURLs, during routine analyses, an LOQ of 0.01 mg/kg can be achieved for the enforcement of trimethyl-sulfonium cation in the four main matrices of plant origin.

Table 2: Summary table – main residue definition

| Code number | Commodity                | Existing EU MRL (mg/kg) | Existing CXL (mg/kg) | Outcome of the review |
|-------------|--------------------------|-------------------------|----------------------|-----------------------|
|             | Enforcement residue definition: glyphosate |                          |                      |                       |
| 110010      | Grapefruits              | 0.1*                    | –                    | 0.05* Recommended(a)  |
| 110020      | Oranges                  | 0.5                     | –                    | 0.05* Recommended(a)  |
| 110030      | Lemons                   | 0.1*                    | –                    | 0.05* Recommended(a)  |
| 110040      | Limes                    | 0.1*                    | –                    | 0.05* Recommended(a)  |
| 110050      | Mandarins                | 0.5                     | –                    | 0.05* Recommended(a)  |
| 120010      | Almonds                  | 0.1*                    | –                    | 0.05* Recommended(a)  |
| 120020      | Brazil nuts              | 0.1*                    | –                    | 0.05* Recommended(a)  |
| 120030      | Cashew nuts              | 0.1*                    | –                    | 0.05* Recommended(a)  |
| 120040      | Chestnuts                | 0.1*                    | –                    | 0.05* Recommended(a)  |
| 120050      | Coconuts                 | 0.1*                    | –                    | 0.05* Recommended(a)  |
| 120060      | Hazelnuts/cobnuts        | 0.1*                    | –                    | 0.05* Recommended(a)  |
| 120070      | Macadamias               | 0.1*                    | –                    | 0.05* Recommended(a)  |
| 120080      | Pecans                   | 0.1*                    | –                    | 0.05* Recommended(a)  |
| 120090      | Pine nut kernels         | 0.1*                    | –                    | 0.05* Recommended(a)  |
| 120100      | Pistachios               | 0.1*                    | –                    | 0.05* Recommended(a)  |
| 120110      | Walnuts                  | 0.1*                    | –                    | 0.05* Recommended(a)  |
| 130010      | Apples                   | 0.1*                    | –                    | 0.05* Recommended(a)  |
| 130020      | Pears                    | 0.1*                    | –                    | 0.05* Recommended(a)  |
| 130030      | Quinces                  | 0.1*                    | –                    | 0.05* Recommended(a)  |
| 130040      | Medlars                  | 0.1*                    | –                    | 0.05* Recommended(a)  |
| 130050      | Loquats/Japanese medlars | 0.1*                    | –                    | 0.05* Recommended(a)  |
| 140010      | Apricots                 | 0.1*                    | –                    | 0.05* Recommended(a)  |
| 140020      | Cherries (sweet)         | 0.1*                    | –                    | 0.05* Recommended(a)  |
| 140030      | Peaches                  | 0.1*                    | –                    | 0.05* Recommended(a)  |
| 140040      | Plums                    | 0.1*                    | –                    | 0.05* Recommended(a)  |
| 151010      | Table grapes             | 0.5                     | –                    | 0.05* Recommended(a)  |
| Code number | Commodity                      | Existing EU MRL (mg/kg) | Existing CXL (mg/kg) | Outcome of the review | Comment                |
|-------------|--------------------------------|-------------------------|----------------------|-----------------------|------------------------|
| 151020      | Wine grapes                    | 0.5                     | –                    | 0.05*                 | Recommended(a)         |
| 152000      | Strawberries                   | 0.1*                    | –                    | 0.05*                 | Further consideration needed(b) |
| 153010      | Blackberries                   | 0.1*                    | –                    | 0.05*                 | Further consideration needed(b) |
| 153020      | Dewberries                     | 0.1*                    | –                    | 0.05*                 | Further consideration needed(b) |
| 153030      | Raspberries (red and yellow)   | 0.1*                    | –                    | 0.05*                 | Further consideration needed(b) |
| 154010      | Blueberries                    | 0.1*                    | –                    | 0.05*                 | Further consideration needed(b) |
| 154020      | Cranberries                    | 0.1*                    | –                    | 0.05*                 | Further consideration needed(b) |
| 154030      | Currants (black, red and white)| 0.1*                    | –                    | 0.05*                 | Further consideration needed(b) |
| 154040      | Gooseberries (green, red and yellow) | 0.1*                  | –                    | 0.05*                 | Further consideration needed(b) |
| 154050      | Rose hips                      | 0.1*                    | –                    | 0.05*                 | Further consideration needed(b) |
| 154060      | Mulberries (black and white)   | 0.1*                    | –                    | 0.05*                 | Further consideration needed(b) |
| 154070      | Azaroles/Mediterranean medlars | 0.1*                    | –                    | 0.05*                 | Further consideration needed(b) |
| 154080      | Elderberries                   | 0.1*                    | –                    | 0.05*                 | Further consideration needed(b) |
| 161020      | Figs                           | 0.1*                    | –                    | 0.05*                 | Recommended(a)         |
| 161030      | Table olives                   | 1                       | –                    | 0.05*                 | Recommended(a)         |
| 161040      | Kumquats                       | 0.1*                    | –                    | 0.05*                 | Recommended(a)         |
| 161060      | Kaki/Japanese persimmons       | 0.1*                    | –                    | 0.05*                 | Recommended(a)         |
| 162010      | Kiwi fruits (green, red, yellow) | 0.1*                  | –                    | 0.05*                 | Recommended(a)         |
| 162020      | Litchis/lychees                | 0.1*                    | –                    | 0.05*                 | Recommended(a)         |
| 162030      | Passionfruits/maracujas        | 0.1*                    | –                    | 0.05*                 | Recommended(a)         |
| 163010      | Avocados                       | 0.1*                    | –                    | 0.05*                 | Recommended(a)         |
| 163020      | Bananas                        | 0.1*                    | 0.05*                | 0.05*                 | Recommended(f)         |
| 163030      | Mangoes                        | 0.1*                    | –                    | 0.05*                 | Recommended(a)         |
| 163040      | Papayas                        | 0.1*                    | –                    | 0.05*                 | Recommended(a)         |
| 163050      | Granate apples/ pomegranates   | 0.1*                    | –                    | 0.05*                 | Recommended(a)         |
| 163060      | Cherimoyas                     | 0.1*                    | –                    | 0.05*                 | Recommended(a)         |
| 211000      | Potatoes                       | 0.5                     | –                    | 1                     | Further consideration needed(b) |
| 212010      | Cassava roots/manioc           | 0.1*                    | –                    | 0.05*                 | Further consideration needed(b) |
| 212020      | Sweet potatoes                 | 0.1*                    | –                    | 0.05*                 | Further consideration needed(b) |
| 212030      | Yams                           | 0.1*                    | –                    | 0.05*                 | Further consideration needed(b) |
| 212040      | Arrowroots                     | 0.1*                    | –                    | 0.05*                 | Further consideration needed(b) |
| 213010      | Beetroots                      | 0.1*                    | –                    | 0.05*                 | Further consideration needed(b) |
| 213020      | Carrots                        | 0.1*                    | –                    | 0.05*                 | Recommended(a)         |
| 213030      | Celeriacs/tunip rooted celeries | 0.1*                  | –                    | 0.05*                 | Further consideration needed(b) |
| 213040      | Horseradishes                  | 0.1*                    | –                    | 0.05*                 | Further consideration needed(b) |
| 213050      | Jerusalem artichokes           | 0.1*                    | –                    | 0.05*                 | Further consideration needed(b) |
| 213060      | Parsnips                       | 0.1*                    | –                    | 0.05*                 | Further consideration needed(b) |
| 213070      | Parsley roots/Hamburg roots parsley | 0.1*               | –                    | 0.05*                 | Further consideration needed(b) |
| 213080      | Radishes                       | 0.1*                    | –                    | 0.05*                 | Further consideration needed(b) |
| 213090      | Salsifles                      | 0.1*                    | –                    | 0.05*                 | Further consideration needed(b) |
| Code number | Commodity                                                   | Existing EU MRL (mg/kg) | Existing CXL (mg/kg) | Outcome of the review | Comment                        |
|-------------|-------------------------------------------------------------|-------------------------|----------------------|-----------------------|--------------------------------|
| 213100      | Swedes/rutabagas                                            | 0.1*                    | –                    | 0.05*                | Further consideration needed(b) |
| 213110      | Turnips                                                     | 0.1*                    | –                    | 0.05*                | Further consideration needed(b) |
| 220010      | Garlic                                                      | 0.1*                    | –                    | 0.05*                | Further consideration needed(b) |
| 220020      | Onions                                                      | 0.1*                    | –                    | 0.05*                | Further consideration needed(b) |
| 220030      | Shallots                                                    | 0.1*                    | –                    | 0.05*                | Further consideration needed(b) |
| 220040      | Spring onions/green onions and Welsh onions                 | 0.1*                    | –                    | 0.05*                | Further consideration needed(b) |
| 231010      | Tomatoes                                                    | 0.1*                    | –                    | 0.05*                | Recommended(a)                |
| 231020      | Sweet peppers/bell peppers                                  | 0.1*                    | –                    | 0.05*                | Further consideration needed(b) |
| 231030      | Aubergines/eggplants                                        | 0.1*                    | –                    | 0.05*                | Recommended(a)                |
| 231040      | Okra/lady’s fingers                                         | 0.1*                    | –                    | 0.05*                | Further consideration needed(b) |
| 232010      | Cucumbers                                                   | 0.1*                    | –                    | 0.05*                | Further consideration needed(b) |
| 232020      | Gherkins                                                    | 0.1*                    | –                    | 0.05*                | Further consideration needed(b) |
| 232030      | Courgettes                                                  | 0.1*                    | –                    | 0.05*                | Further consideration needed(b) |
| 233010      | Melons                                                      | 0.1*                    | –                    | 0.05*                | Further consideration needed(b) |
| 233020      | Pumpkins                                                    | 0.1*                    | –                    | 0.05*                | Further consideration needed(b) |
| 233030      | Watermelons                                                 | 0.1*                    | –                    | 0.05*                | Further consideration needed(b) |
| 241010      | Broccoli                                                    | 0.1*                    | –                    | 0.05*                | Further consideration needed(b) |
| 241020      | Cauliflowers                                                | 0.1*                    | –                    | 0.05*                | Further consideration needed(b) |
| 242010      | Brussels sprouts                                            | 0.1*                    | –                    | 0.05*                | Further consideration needed(b) |
| 242020      | Head cabbages                                               | 0.1*                    | –                    | 0.05*                | Further consideration needed(b) |
| 243010      | Chinese cabbages/pe-tsai                                    | 0.1*                    | –                    | 0.05*                | Further consideration needed(b) |
| 243020      | Kales                                                       | 0.1*                    | –                    | 0.05*                | Further consideration needed(b) |
| 244000      | Kohlrabies                                                  | 0.1*                    | –                    | 0.05*                | Further consideration needed(b) |
| 251010      | Lamb’s lettuces/corn salads                                 | 0.1*                    | –                    | 0.05*                | Further consideration needed(b) |
| 251020      | Lettuces                                                    | 0.1*                    | –                    | 0.05*                | Further consideration needed(b) |
| 251030      | Escaroles/broad-leaved endives                              | 0.1*                    | –                    | 0.05*                | Further consideration needed(b) |
| 251040      | Cresses and other sprouts and shoots                        | 0.1*                    | –                    | 0.05*                | Further consideration needed(b) |
| 251050      | Land cresses                                                | 0.1*                    | –                    | 0.05*                | Further consideration needed(b) |
| 251060      | Roman rocket/rucola                                         | 0.1*                    | –                    | 0.05*                | Further consideration needed(b) |
| 251070      | Red mustards                                                | 0.1*                    | –                    | 0.05*                | Further consideration needed(b) |
| 251080      | Baby leaf crops (including brassica species)                | 0.1*                    | –                    | 0.05*                | Further consideration needed(b) |
| 252010      | Spinaches                                                   | 0.1*                    | –                    | 0.05*                | Further consideration needed(b) |
| 252020      | Purslanes                                                   | 0.1*                    | –                    | 0.05*                | Further consideration needed(b) |
| 252030      | Chards/beet leaves                                          | 0.1*                    | –                    | 0.05*                | Further consideration needed(b) |
| 253000      | Grape leaves and similar species                            | 0.1*                    | –                    | 0.05*                | Further consideration needed(b) |
| 254000      | Watercresses                                                | 0.1*                    | –                    | 0.05*                | Further consideration needed(b) |
| 255000      | Witloofs/Belgian endives                                    | 0.1*                    | –                    | 0.05*                | Further consideration needed(b) |
| 256010      | Chervil                                                     | 0.1*                    | –                    | 0.05*                | Further consideration needed(b) |
| 256020      | Chives                                                      | 0.1*                    | –                    | 0.05*                | Further consideration needed(b) |
| 256030      | Celery leaves                                               | 0.1*                    | –                    | 0.05*                | Further consideration needed(b) |
| 256040      | Parsley                                                     | 0.1*                    | –                    | 0.05*                | Further consideration needed(b) |
| 256050      | Sage                                                        | 0.1*                    | –                    | 0.05*                | Further consideration needed(b) |
| 256060      | Rosemary                                                    | 0.1*                    | –                    | 0.05*                | Further consideration needed(b) |
| Code number | Commodity                  | Existing EU MRL (mg/kg) | Existing CXL (mg/kg) | Outcome of the review MRL (mg/kg) | Comment                                      |
|-------------|----------------------------|-------------------------|---------------------|----------------------------------|----------------------------------------------|
| 256070      | Thyme                      | 0.1*                    | –                   | 0.05*                            | Further consideration needed(b)              |
| 256080      | Basil and edible flowers   | 0.1*                    | –                   | 0.05*                            | Further consideration needed(b)              |
| 256090      | Laurel/bay leave           | 0.1*                    | –                   | 0.05*                            | Further consideration needed(b)              |
| 256100      | Tarragon                   | 0.1*                    | –                   | 0.05*                            | Further consideration needed(b)              |
| 260010      | Beans (with pods)          | 0.1*                    | –                   | 0.05*                            | Recommended(a)                               |
| 260020      | Beans (without pods)       | 0.1*                    | –                   | 0.05*                            | Recommended(a)                               |
| 260030      | Peas (with pods)           | 0.1*                    | –                   | 0.05*                            | Recommended(a)                               |
| 260040      | Peas (without pods)        | 0.1*                    | –                   | 0.05*                            | Recommended(a)                               |
| 260050      | Lentils (fresh)            | 0.1*                    | –                   | 0.05*                            | Recommended(a)                               |
| 270010      | Asparagus                  | 0.1*                    | –                   | 0.05*                            | Further consideration needed(b)              |
| 270020      | Cardoons                   | 0.1*                    | –                   | 0.05*                            | Further consideration needed(b)              |
| 270030      | Celeries                   | 0.1*                    | –                   | 0.05*                            | Further consideration needed(b)              |
| 270040      | Florence fennels           | 0.1*                    | –                   | 0.05*                            | Further consideration needed(b)              |
| 270050      | Globe artichokes           | 0.1*                    | –                   | 0.05*                            | Recommended(a)                               |
| 270060      | Leeks                      | 0.1*                    | –                   | 0.05*                            | Further consideration needed(b)              |
| 270070      | Rhubarbs                   | 0.1*                    | –                   | 0.05*                            | Further consideration needed(b)              |
| 270080      | Bamboo shoots              | 0.1*                    | –                   | 0.05*                            | Further consideration needed(b)              |
| 270090      | Palm hearts                | 0.1*                    | –                   | 0.05*                            | Further consideration needed(b)              |
| 280010      | Cultivated fungi           | 0.1*                    | –                   | 0.05*                            | Further consideration needed(b)              |
| 280020      | Wild fungi                 | 50                      | –                   | 0.05*                            | Recommended(a)                               |
| 300010      | Beans (dry)                | 2                       | 2                   | 15                               | Further consideration needed(b)              |
| 300020      | Lentils (dry)              | 10                      | 5                   | 10                               | Further consideration needed(b)              |
| 300030      | Peas (dry)                 | 10                      | 5                   | 15                               | Further consideration needed(b)              |
| 300040      | Lupins/lupine beans (dry)  | 10                      | –                   | 10                               | Further consideration needed(b)              |
| 401010      | Linseeds                   | 10                      | –                   | 15                               | Recommended(a)                               |
| 401020      | Peanuts/groundnuts         | 0.1*                    | –                   | 0.05*                            | Further consideration needed(b)              |
| 401030      | Poppy seeds                | 0.1*                    | –                   | 0.05*                            | Further consideration needed(b)              |
| 401040      | Sesame seeds               | 0.1*                    | –                   | 0.05*                            | Further consideration needed(b)              |
| 401050      | Sunflower seeds            | 20                      | 7                   | 30                               | Further consideration needed(b)              |
| 401080      | Mustard seeds              | 10                      | –                   | 10                               | Further consideration needed(b)              |
| 401100      | Pumpkin seeds              | 0.1*                    | –                   | 0.05*                            | Further consideration needed(b)              |
| 401110      | Safflower seeds            | 0.1*                    | –                   | 0.05*                            | Further consideration needed(b)              |
| 401120      | Borage seeds               | 0.1                     | –                   | 10                               | Recommended(a)                               |
| 401130      | Gold of pleasure seeds     | 0.1                     | –                   | 0.05*                            | Further consideration needed(b)              |
| 401140      | Hemp seeds                 | 0.1*                    | –                   | 0.05*                            | Further consideration needed(b)              |
| 401150      | Castor beans               | 0.1                     | –                   | 0.05*                            | Further consideration needed(b)              |
| 402010      | Olives for oil production  | 1                       | –                   | 30                               | Recommended(a)                               |
| 402020      | Oil palms kernels          | 0.1                     | –                   | 0.05*                            | Recommended(a)                               |
| 402030      | Oil palms fruits           | 0.1                     | –                   | 0.05*                            | Further consideration needed(b)              |
| 402040      | Kapok                      | 0.1                     | –                   | 0.05*                            | Recommended(a)                               |
| 500010      | Barley grains              | 20                      | 30                  | 30                               | Recommended(a)                               |
| 500020      | Buckwheat and other pseudo-cereal grains | 0.1* | 30 | 30 | Recommended(a) | |
| 500040      | Common millet/proso millet grains | 0.1* | 30 | 30 | Recommended(a) | |
| 500050      | Oat grains                 | 20                      | 30                  | 30                               | Recommended(a)                               |
| 500060      | Rice grains                | 0.1*                    | –                   | 0.1                               | Further consideration needed(c)              |
| 500070      | Rye grains                 | 10                      | 30                  | 30                               | Recommended(a)                               |
| Code number | Commodity                                      | Existing EU MRL (mg/kg) | Existing CXL (mg/kg) | Outcome of the review | Comment |
|-------------|-----------------------------------------------|-------------------------|----------------------|-----------------------|---------|
| 500080      | Sorghum grains                                | 20                      | 30                   | 30                    | Recommended (m) |
| 500090      | Wheat grains                                  | 10                      | 30                   | 30                    | Recommended (h) |
| 610000      | Teas                                          | 2                       | –                    | 0.05*                 | Further consideration needed (b) |
| 620000      | Coffee beans                                  | 0.1                     | –                    | 0.05*                 | Further consideration needed (b) |
| 631000      | Herbal infusions from flowers                 | 2*                      | –                    | 0.05*                 | Further consideration needed (b) |
| 632000      | Herbal infusions from leaves and herbs        | 2*                      | –                    | 0.05*                 | Further consideration needed (b) |
| 633000      | Herbal infusions from roots                   | 2*                      | –                    | 0.05*                 | Further consideration needed (b) |
| 650000      | Carobs/Saint John’s breads                    | 0.1                     | –                    | 0.05*                 | Further consideration needed (b) |
| 700000      | Hops                                          | 0.1                     | –                    | 0.05*                 | Further consideration needed (b) |
| 810000      | Seed spices                                   | 0.1*                    | –                    | 0.05*                 | Further consideration needed (b) |
| 820000      | Fruit spices                                  | 0.1*                    | –                    | 0.05*                 | Further consideration needed (b) |
| 830000      | Bark spices                                   | 0.1*                    | –                    | 0.05*                 | Further consideration needed (b) |
| 840000      | Root and rhizome spices                       | 0.1*                    | –                    | 0.05*                 | Further consideration needed (b) |
| 850000      | Bud spices                                    | 0.1*                    | –                    | 0.05*                 | Further consideration needed (b) |
| 860000      | Flower pistil spices                          | 0.1*                    | –                    | 0.05*                 | Further consideration needed (b) |
| 870000      | Aril spices                                   | 0.1*                    | –                    | 0.05*                 | Further consideration needed (b) |
| 900020      | Sugar canes                                   | 0.1*                    | 2                    | 2                     | Recommended (m) |
| 900030      | Chicory roots                                 | 0.1*                    | –                    | 0.05*                 | Further consideration needed (b) |
|             | Other commodities of plant origin             | –                       | –                    | –                     | Further consideration needed (b) |

**Enforcement residue definition (existing):** glyphosate

**Enforcement residue definition (proposed):** sum of glyphosate, AMPA and N-acetyl-glyphosate, expressed as glyphosate

| Code number | Commodity        | Existing EU MRL (mg/kg) | Existing CXL (mg/kg) | Outcome of the review | Comment |
|-------------|------------------|-------------------------|----------------------|-----------------------|---------|
| 234000      | Sweet corn       | 3                       | 3                    | 3                     | Further consideration needed (i) |
| 401060      | Rapeseeds/canola seeds | 10          | 30                   | 30                    | Further consideration needed (i) |
| 401070      | Soyabees         | 20                      | 20                   | 5                     | Further consideration needed (i) |
| 401090      | Cotton seeds     | 10                      | 40                   | 60                    | Further consideration needed (i) |
| 500030      | Maize/corn grains| 1                       | 5                    | 4                     | Further consideration needed (i) |
| 900010      | Sugar beetroot   | 15                      | 15                   | 15                    | Further consideration needed (i) |
| 1011010     | Swine muscle     | 0.05*                   | 0.05*                | 0.2                   | Further consideration needed (i) |
| 1011020     | Swine fat tissue | 0.05*                   | 0.05*                | 0.2*                  | Further consideration needed (i) |
| 1011030     | Swine liver      | 0.05*                   | 0.5                  | 0.4                   | Further consideration needed (i) |
| 1011040     | Swine kidney     | 0.5                     | 0.5                  | 3                     | Further consideration needed (i) |
| 1012010     | Bovine muscle    | 0.05*                   | 0.05*                | 0.2                   | Further consideration needed (i) |
| 1012020     | Bovine fat tissue| 0.05*                   | 0.05*                | 0.2*                  | Further consideration needed (i) |
| 1012030     | Bovine liver     | 0.2                     | 5                    | 0.7                   | Further consideration needed (i) |
| 1012040     | Bovine kidney    | 2                       | 5                    | 7                     | Further consideration needed (i) |
| 1013010     | Sheep muscle     | 0.05*                   | 0.05*                | 0.2                   | Further consideration needed (i) |
| 1013020     | Sheep fat tissue | 0.05*                   | 0.05*                | 0.3                   | Further consideration needed (i) |
| 1013030     | Sheep liver      | 0.05*                   | 0.5                  | 0.9                   | Further consideration needed (i) |
| 1013040     | Sheep kidney     | 0.05*                   | 5                    | 10                    | Further consideration needed (i) |
| 1014010     | Goat muscle      | 0.05*                   | 0.05*                | 0.2                   | Further consideration needed (i) |
| 1014020     | Goat fat tissue  | 0.05*                   | 0.05*                | 0.3                   | Further consideration needed (i) |
| 1014030     | Goat liver       | 0.05*                   | 5                    | 0.9                   | Further consideration needed (i) |
| 1014040     | Goat kidney      | 0.05*                   | 5                    | 10                    | Further consideration needed (i) |
| 1015010     | Equine muscle    | 0.05*                   | 0.05*                | 0.2                   | Further consideration needed (i) |
Code number | Commodity           | Existing EU MRL (mg/kg) | Existing CXL (mg/kg) | Outcome of the review MRL (mg/kg) | Comment                        |
|-------------|---------------------|-------------------------|---------------------|----------------------------------|--------------------------------|
| 1015020     | Equine fat tissue   | 0.05*                   | 0.05*               | 0.2*                             | Further consideration needed(1) |
| 1015030     | Equine liver        | 0.05*                   | 5                   | 0.7                              | Further consideration needed(1) |
| 1015040     | Equine kidney       | 0.05*                   | 5                   | 7                                | Further consideration needed(1) |
| 1016010     | Poultry muscle      | 0.05*                   | 0.05*               | 0.2                              | Further consideration needed(1) |
| 1016020     | Poultry fat tissue  | 0.05*                   | 0.05*               | 0.2                              | Further consideration needed(1) |
| 1016030     | Poultry liver       | 0.05*                   | 0.5                 | 0.2                              | Further consideration needed(1) |
| 1020010     | Cattle milk         | 0.05*                   | 0.05                | 0.1                              | Further consideration needed(1) |
| 1020020     | Sheep milk          | 0.05*                   | 0.05                | 0.1                              | Further consideration needed(1) |
| 1020030     | Goat milk           | 0.05*                   | 0.05                | 0.1                              | Further consideration needed(1) |
| 1020040     | Horse milk          | 0.05*                   | 0.05                | 0.1                              | Further consideration needed(1) |
| 1030000     | Birds eggs          | 0.05*                   | 0.05                | 0.1                              | Further consideration needed(1) |
| –           | Other commodities of animal origin | – | – | – | Further consideration needed(1) |

MRL: maximum residue level; CXL: codex maximum residue limit.
*: Indicates that the MRL is set at the limit of quantification.
(a): MRL is derived from a GAP evaluated at EU level, which is fully supported by data and for which no risk to consumers is identified; no CXL is available (combination G-I in Appendix E).
(b): Tentative MRL is derived from a GAP evaluated at EU level, which is not fully supported by data but for which no risk to consumers was identified; no CXL is available (combination E-I in Appendix E).
(c): GAP evaluated at EU level is not supported by data but no risk to consumers was identified for the existing EU MRL; no CXL is available (combination C-I in Appendix E).
(d): Tentative MRL is derived from a GAP evaluated at EU level, which is not fully supported by data but for which no risk to consumers was identified; existing CXL is covered by the tentative MRL (combination E-III in Appendix E).
(e): GAP evaluated at EU level is not supported by data but no risk to consumers was identified for the existing EU MRL; existing CXL is covered by the existing EU MRL (combination G-III in Appendix E).
(f): MRL is derived from a GAP evaluated at EU level, which is fully supported by data and for which no risk to consumers is identified; existing CXL is covered by the recommended MRL (combination G-III in Appendix E).
(g): MRL is derived from the existing CXL, which is supported by data and for which no risk to consumers is identified; GAP evaluated at EU level is not supported by data but the existing EU MRL is lower than the existing CXL (combination C-VII in Appendix E).
(h): MRL is derived from the existing CXL, which is supported by data and for which no risk to consumers is identified; GAP evaluated at EU level, which is also fully supported by data, leads to a lower MRL (combination G-VII in Appendix E).
(i): There are no relevant authorisations or import tolerances reported at EU level; no CXL is available. Either a specific LOQ or the default MRL of 0.01 mg/kg may be considered (combination A-I in Appendix E).
(j): Tentative MRL is derived from a GAP evaluated at EU level, which is not fully supported by data but for which no risk to consumers was identified; GAP evaluated at EU level, which is also not fully supported by data, would lead to a lower tentative MRL (combination E-V in Appendix E).
(k): MRL is derived from the existing CXL, which is not sufficiently supported by data but for which no risk to consumers is identified; GAP evaluated at EU level, which is also not fully supported by data, leads to a lower tentative MRL (combination E-VII in Appendix E).

Table 3: Summary table – Optional residue definition

| Code number | Commodity  | Existing EU MRL (mg/kg) | Existing CXL (mg/kg) | Outcome of the review MRL (mg/kg) | Comment                        |
|-------------|------------|-------------------------|---------------------|----------------------------------|--------------------------------|
| 110010      | Grapefruits| 0.1*                   | –                   | 0.2*                             | Further consideration needed(1) |
| 110020      | Oranges    | 0.5                    | –                   | 0.2*                             | Further consideration needed(1) |

Enforcement residue definition (existing): glyphosate
Enforcement residue definition (proposed – optional): sum of glyphosate, AMPA and N-acetyl-glyphosate, expressed as glyphosate.
| Code number | Commodity                  | Existing EU MRL (mg/kg) | Existing CXL (mg/kg) | Outcome of the review | Comment |
|-------------|----------------------------|------------------------|----------------------|----------------------|---------|
| 110030      | Lemons                     | 0.1*                   | –                    | 0.2*                 | Further consideration needed(a) |
| 110040      | Limes                      | 0.1*                   | –                    | 0.2*                 | Further consideration needed(a) |
| 110050      | Mandarins                  | 0.5                    | –                    | 0.2*                 | Further consideration needed(a) |
| 120010      | Almonds                    | 0.1*                   | –                    | 0.2*                 | Further consideration needed(a) |
| 120020      | Brazil nuts                | 0.1*                   | –                    | 0.2*                 | Further consideration needed(a) |
| 120030      | Cashew nuts                | 0.1*                   | –                    | 0.2*                 | Further consideration needed(a) |
| 120040      | Chestnuts                  | 0.1*                   | –                    | 0.2*                 | Further consideration needed(a) |
| 120050      | Coconuts                   | 0.1*                   | –                    | 0.2*                 | Further consideration needed(a) |
| 120060      | Hazelnuts/cobnuts          | 0.1*                   | –                    | 0.2*                 | Further consideration needed(a) |
| 120070      | Macadamias                 | 0.1*                   | –                    | 0.2*                 | Further consideration needed(a) |
| 120080      | Pecans                     | 0.1*                   | –                    | 0.2*                 | Further consideration needed(a) |
| 120090      | Pine nut kernels           | 0.1*                   | –                    | 0.2*                 | Further consideration needed(a) |
| 120100      | Pistachios                 | 0.1*                   | –                    | 0.2*                 | Further consideration needed(a) |
| 120110      | Walnuts                    | 0.1*                   | –                    | 0.2*                 | Further consideration needed(a) |
| 130010      | Apples                     | 0.1*                   | –                    | 0.2*                 | Further consideration needed(a) |
| 130020      | Pears                      | 0.1*                   | –                    | 0.2*                 | Further consideration needed(a) |
| 130030      | Quinces                    | 0.1*                   | –                    | 0.2*                 | Further consideration needed(a) |
| 130040      | Medlars                    | 0.1*                   | –                    | 0.2*                 | Further consideration needed(a) |
| 130050      | Loquats/Japanese medlars   | 0.1*                   | –                    | 0.2*                 | Further consideration needed(a) |
| 140010      | Apricots                   | 0.1*                   | –                    | 0.2*                 | Further consideration needed(a) |
| 140020      | Cherries (sweet)           | 0.1*                   | –                    | 0.2*                 | Further consideration needed(a) |
| 140030      | Peaches                    | 0.1*                   | –                    | 0.2*                 | Further consideration needed(a) |
| 140040      | Plums                      | 0.1*                   | –                    | 0.2*                 | Further consideration needed(a) |
| 151010      | Table grapes               | 0.5                    | –                    | 0.2*                 | Further consideration needed(a) |
| 151020      | Wine grapes                | 0.5                    | –                    | 0.2*                 | Further consideration needed(a) |
| 152000      | Strawberries               | 0.1*                   | –                    | 0.2*                 | Further consideration needed(a) |
| 153010      | Blackberries              | 0.1*                   | –                    | 0.2*                 | Further consideration needed(a) |
| 153020      | Dewberries                 | 0.1*                   | –                    | 0.2*                 | Further consideration needed(a) |
| 153030      | Raspberries (red and yellow)| 0.1*                   | –                    | 0.2*                 | Further consideration needed(a) |
| 154010      | Blueberries                | 0.1*                   | –                    | 0.2*                 | Further consideration needed(a) |
| 154020      | Cranberries                | 0.1*                   | –                    | 0.2*                 | Further consideration needed(a) |
| 154030      | Currants (black, red and white)| 0.1*                   | –                    | 0.2*                 | Further consideration needed(a) |
| 154040      | Gooseberries (green, red and yellow)| 0.1*                   | –                    | 0.2*                 | Further consideration needed(a) |
| 154050      | Rose hips                  | 0.1*                   | –                    | 0.2*                 | Further consideration needed(a) |
| 154060      | Mulberries (black and white)| 0.1*                   | –                    | 0.2*                 | Further consideration needed(a) |
| 154070      | Azaroles/Mediterranean medlars| 0.1*                   | –                    | 0.2*                 | Further consideration needed(a) |
| 154080      | Elderberries               | 0.1*                   | –                    | 0.2*                 | Further consideration needed(a) |
| 161020      | Figs                       | 0.1*                   | –                    | 0.2*                 | Further consideration needed(a) |
| 161030      | Table olives               | 1                      | –                    | 0.2*                 | Further consideration needed(a) |
| 161040      | Kumquats                   | 0.1*                   | –                    | 0.2*                 | Further consideration needed(a) |
| 161060      | Kaki/Japanese persimmons   | 0.1*                   | –                    | 0.2*                 | Further consideration needed(a) |
| 162010      | Kiwi fruits (green, red, yellow)| 0.1*                   | –                    | 0.2*                 | Further consideration needed(a) |
| Code number | Commodity                              | Existing EU MRL (mg/kg) | Existing CXL (mg/kg) | MRL (mg/kg) | Comment                          |
|-------------|----------------------------------------|-------------------------|----------------------|-------------|----------------------------------|
| 162020      | Litchis/lychees                         | 0.1*                    | –                    | 0.2*        | Further consideration needed(a)  |
| 162030      | Passionfruits/maracujas                 | 0.1*                    | –                    | 0.2*        | Further consideration needed(a)  |
| 163010      | Avocados                                | 0.1*                    | –                    | 0.2*        | Further consideration needed(a)  |
| 163020      | Bananas                                 | 0.1* 0.05*             | –                    | 0.2*        | Further consideration needed(a)  |
| 163030      | Mangoes                                 | 0.1*                    | –                    | 0.2*        | Further consideration needed(a)  |
| 163040      | Papayas                                 | 0.1*                    | –                    | 0.2*        | Further consideration needed(a)  |
| 163050      | Granate apples/pomegranates             | 0.1*                    | –                    | 0.2*        | Further consideration needed(a)  |
| 163060      | Cherimoyas                              | 0.1*                    | –                    | 0.2*        | Further consideration needed(a)  |
| 211000      | Potatoes                                | 0.5                     | –                    | 1           | Further consideration needed(a)  |
| 212010      | Cassava roots/manioc                    | 0.1*                    | –                    | 0.2*        | Further consideration needed(a)  |
| 212020      | Sweet potatoes                          | 0.1*                    | –                    | 0.2*        | Further consideration needed(a)  |
| 212030      | Yams                                    | 0.1*                    | –                    | 0.2*        | Further consideration needed(a)  |
| 212040      | Arrowroots                              | 0.1*                    | –                    | 0.2*        | Further consideration needed(a)  |
| 213010      | Beetroots                               | 0.1*                    | –                    | 0.2*        | Further consideration needed(a)  |
| 213020      | Carrots                                 | 0.1*                    | –                    | 0.2*        | Further consideration needed(a)  |
| 213030      | Celeriacs/turpin rooted celeries        | 0.1*                    | –                    | 0.2*        | Further consideration needed(a)  |
| 213040      | Horseradishes                           | 0.1*                    | –                    | 0.2*        | Further consideration needed(a)  |
| 213050      | Jerusalem artichokes                    | 0.1*                    | –                    | 0.2*        | Further consideration needed(a)  |
| 213060      | Parsnips                                | 0.1*                    | –                    | 0.2*        | Further consideration needed(a)  |
| 213070      | Parsley roots/Hamburg roots parsley     | 0.1*                    | –                    | 0.2*        | Further consideration needed(a)  |
| 213080      | Radishes                                | 0.1*                    | –                    | 0.2*        | Further consideration needed(a)  |
| 213090      | Salsifies                               | 0.1*                    | –                    | 0.2*        | Further consideration needed(a)  |
| 213100      | Swedes/rutabagas                        | 0.1*                    | –                    | 0.2*        | Further consideration needed(a)  |
| 213110      | Turnips                                 | 0.1*                    | –                    | 0.2*        | Further consideration needed(a)  |
| 220010      | Garlic                                  | 0.1*                    | –                    | 0.2*        | Further consideration needed(a)  |
| 220020      | Onions                                  | 0.1*                    | –                    | 0.2*        | Further consideration needed(a)  |
| 220030      | Shallots                                | 0.1*                    | –                    | 0.2*        | Further consideration needed(a)  |
| 220040      | Spring onions/green onions and Welsh onions | 0.1*                    | –                    | 0.2*        | Further consideration needed(a)  |
| 231010      | Tomatoes                                | 0.1*                    | –                    | 0.2*        | Further consideration needed(a)  |
| 231020      | Sweet peppers/bell peppers              | 0.1*                    | –                    | 0.2*        | Further consideration needed(a)  |
| 231030      | Aubergines/eggplants                    | 0.1*                    | –                    | 0.2*        | Further consideration needed(a)  |
| 231040      | Okra/lady’s fingers                     | 0.1*                    | –                    | 0.2*        | Further consideration needed(a)  |
| 232010      | Cucumbers                               | 0.1*                    | –                    | 0.2*        | Further consideration needed(a)  |
| 232020      | Gherkins                                | 0.1*                    | –                    | 0.2*        | Further consideration needed(a)  |
| 232030      | Courgettes                              | 0.1*                    | –                    | 0.2*        | Further consideration needed(a)  |
| 233010      | Melons                                  | 0.1*                    | –                    | 0.2*        | Further consideration needed(a)  |
| 233020      | Pumpkins                                | 0.1*                    | –                    | 0.2*        | Further consideration needed(a)  |
| 233030      | Watermelons                             | 0.1*                    | –                    | 0.2*        | Further consideration needed(a)  |
| 234000      | Sweet corn                              | 3 3                    | –                    | 3           | Further consideration needed(c)  |
| 241010      | Broccoli                                | 0.1*                    | –                    | 0.2*        | Further consideration needed(a)  |
| 241020      | Cauliflowers                            | 0.1*                    | –                    | 0.2*        | Further consideration needed(a)  |
| 242010      | Brussels sprouts                        | 0.1*                    | –                    | 0.2*        | Further consideration needed(a)  |
| 242020      | Head cabbages                           | 0.1*                    | –                    | 0.2*        | Further consideration needed(a)  |
| 243010      | Chinese cabbages/pe-tsai                | 0.1*                    | –                    | 0.2*        | Further consideration needed(a)  |
| Code number | Commodity | Existing EU MRL (mg/kg) | Existing CXL (mg/kg) | Outcome of the review | Comment |
|-------------|-----------|------------------------|----------------------|-----------------------|---------|
| 243020      | Kales     | 0.1*                   | –                    | 0.2*                  | Further consideration needed(a) |
| 244000      | Kohlrabies | 0.1*                   | –                    | 0.2*                  | Further consideration needed(a) |
| 251010      | Lamb's lettuces/corn salads | 0.1* | – | 0.2* | Further consideration needed(a) |
| 251020      | Lettuces  | 0.1*                   | –                    | 0.2*                  | Further consideration needed(a) |
| 251030      | Escaroles/broad-leaved endives | 0.1* | – | 0.2* | Further consideration needed(a) |
| 251040      | Cresses and other sprouts and shoots | 0.1* | – | 0.2* | Further consideration needed(a) |
| 251050      | Land cresses | 0.1* | – | 0.2* | Further consideration needed(a) |
| 251060      | Roman rocket/rucola | 0.1* | – | 0.2* | Further consideration needed(a) |
| 251070      | Red mustards | 0.1* | – | 0.2* | Further consideration needed(a) |
| 251080      | Baby leaf crops (including brassica species) | 0.1* | – | 0.2* | Further consideration needed(a) |
| 252010      | Spinaches | 0.1*                   | –                    | 0.2*                  | Further consideration needed(a) |
| 252020      | Purslanes | 0.1*                   | –                    | 0.2*                  | Further consideration needed(a) |
| 252030      | Chards/beet leaves | 0.1* | – | 0.2* | Further consideration needed(a) |
| 253000      | Grape leaves and similar species | 0.1* | – | 0.2* | Further consideration needed(a) |
| 254000      | Watercresses | 0.1* | – | 0.2* | Further consideration needed(a) |
| 255000      | Witloofs/Belgian endives | 0.1* | – | 0.2* | Further consideration needed(a) |
| 256010      | Chervil   | 0.1*                   | –                    | 0.2*                  | Further consideration needed(a) |
| 256020      | Chives    | 0.1*                   | –                    | 0.2*                  | Further consideration needed(a) |
| 256030      | Celery leaves | 0.1* | – | 0.2* | Further consideration needed(a) |
| 256040      | Parsley   | 0.1*                   | –                    | 0.2*                  | Further consideration needed(a) |
| 256050      | Sage      | 0.1*                   | –                    | 0.2*                  | Further consideration needed(a) |
| 256060      | Rosemary  | 0.1*                   | –                    | 0.2*                  | Further consideration needed(a) |
| 256070      | Thyme     | 0.1*                   | –                    | 0.2*                  | Further consideration needed(a) |
| 256080      | Basil and edible flowers | 0.1* | – | 0.2* | Further consideration needed(a) |
| 256090      | Laurel/bay leave | 0.1* | – | 0.2* | Further consideration needed(a) |
| 256100      | Tarragon  | 0.1*                   | –                    | 0.2*                  | Further consideration needed(a) |
| 260010      | Beans (with pods) | 0.1* | – | 0.2* | Further consideration needed(a) |
| 260020      | Beans (without pods) | 0.1* | – | 0.2* | Further consideration needed(a) |
| 260030      | Peas (with pods) | 0.1* | – | 0.2* | Further consideration needed(a) |
| 260040      | Peas (without pods) | 0.1* | – | 0.2* | Further consideration needed(a) |
| 260050      | Lentils (fresh) | 0.1* | – | 0.2* | Further consideration needed(a) |
| 270010      | Asparagus | 0.1*                   | –                    | 0.2*                  | Further consideration needed(a) |
| 270020      | Cardoons  | 0.1*                   | –                    | 0.2*                  | Further consideration needed(a) |
| 270030      | Celeris   | 0.1*                   | –                    | 0.2*                  | Further consideration needed(a) |
| 270040      | Florence fennels | 0.1* | – | 0.2* | Further consideration needed(a) |
| 270050      | Globe artichokes | 0.1* | – | 0.2* | Further consideration needed(a) |
| 270060      | Leeks     | 0.1*                   | –                    | 0.2*                  | Further consideration needed(a) |
| 270070      | Rhubarbs  | 0.1*                   | –                    | 0.2*                  | Further consideration needed(a) |
| 270080      | Bamboo shoots | 0.1* | – | 0.2* | Further consideration needed(a) |
| 270090      | Palm hearts | 0.1* | – | 0.2* | Further consideration needed(a) |
| 280010      | Cultivated fungi | 0.1* | – | 0.2* | Further consideration needed(a) |
| 280020      | Wild fungi | 50 | – | 0.2* | Further consideration needed(a) |
| 300010      | Beans (dry) | 2 | 2 | 30 | Further consideration needed(a) |
| 300020      | Lentils (dry) | 10 | 5 | 20 | Further consideration needed(a) |
| Code number | Commodity | Existing EU MRL (mg/kg) | Existing CXL (mg/kg) | Outcome of the review | Comment |
|-------------|-----------|------------------------|---------------------|----------------------|---------|
| 300030      | Peas (dry) | 10                     | 5                   | 30                   | Further consideration needed © |
| 300040      | Lupins/lupini beans (dry) | 10             | –                   | 20                   | Further consideration needed © |
| 401010      | Linseeds  | 10                     | –                   | 15                   | Further consideration needed © |
| 401020      | Peanuts/groundnuts | 0.1*             | –                   | 0.2*                 | Further consideration needed © |
| 401030      | Poppy seeds | 0.1*                | –                   | 0.2*                 | Further consideration needed © |
| 401040      | Sesame seeds | 0.1*             | –                   | 0.2*                 | Further consideration needed © |
| 401050      | Sunflower seeds | 20              | 7                   | 30                   | Further consideration needed © |
| 401060      | Rapeseeds/canola seeds | 10             | 30                  | 30                   | Further consideration needed © |
| 401070      | Soyabeans  | 20                     | 20                  | 5                    | Further consideration needed © |
| 401080      | Mustard seeds | 10                | –                   | 10                   | Further consideration needed © |
| 401090      | Cotton seeds | 10                 | 40                  | 60                   | Further consideration needed © |
| 401100      | Pumpkin seeds | 0.1*                | –                   | 0.2*                 | Further consideration needed © |
| 401110      | Safflower seeds | 0.1*              | –                   | 0.2*                 | Further consideration needed © |
| 401120      | Borage seeds | 0.1                | –                   | 10                   | Further consideration needed © |
| 401130      | Gold of pleasure seeds | 0.1              | –                   | 0.2*                 | Further consideration needed © |
| 401140      | Hemp seeds | 0.1*                | –                   | 0.2*                 | Further consideration needed © |
| 401150      | Castor beans | 0.1                | –                   | 0.2*                 | Further consideration needed © |
| 402010      | Olives for oil production | 1            | –                   | 30                   | Further consideration needed © |
| 402020      | Oil palms kernels | 0.1             | –                   | 0.2*                 | Further consideration needed © |
| 402030      | Oil palms fruits | 0.1              | –                   | 0.2*                 | Further consideration needed © |
| 402040      | Kapok      | 0.1                | –                   | 0.2*                 | Further consideration needed © |
| 500010      | Barley grains | 20                | 30                  | 30                   | Further consideration needed © |
| 500020      | Buckwheat and other pseudo-cereal grains | 0.1*         | 30                  | 30                   | Further consideration needed © |
| 500030      | Maize/corn grains | 1                | 5                   | 4                    | Further consideration needed © |
| 500040      | Common millet/proso millet grains | 0.1*         | 30                  | 30                   | Further consideration needed © |
| 500050      | Oat grains | 20                   | 30                  | 30                   | Further consideration needed © |
| 500060      | Rice grains | 0.1*               | –                   | 0.2*                 | Further consideration needed © |
| 500070      | Rye grains | 10                   | 30                  | 30                   | Further consideration needed © |
| 500080      | Sorghum grains | 20                | 30                  | 30                   | Further consideration needed © |
| 500090      | Wheat grains | 10                | 30                  | 30                   | Further consideration needed © |
| 610000      | Teas       | 2                   | –                   | 0.2*                 | Further consideration needed © |
| 620000      | Coffee beans | 0.1                | –                   | 0.2*                 | Further consideration needed © |
| 631000      | Herbal infusions from flowers | 2*             | –                   | 0.2*                 | Further consideration needed © |
| 632000      | Herbal infusions from leaves and herbs | 2*            | –                   | 0.2*                 | Further consideration needed © |
| 633000      | Herbal infusions from roots | 2*             | –                   | 0.2*                 | Further consideration needed © |
| 650000      | Carobs/Saint John's breads | 0.1*         | –                   | 0.2*                 | Further consideration needed © |
| 700000      | Hops       | 0.1*               | –                   | 0.2*                 | Further consideration needed © |
| 810000      | Seed spices | 0.1*              | –                   | 0.2*                 | Further consideration needed © |
| 820000      | Fruit spices | 0.1*             | –                   | 0.2*                 | Further consideration needed © |
| 830000      | Bark spices | 0.1*              | –                   | 0.2*                 | Further consideration needed © |
| 840000      | Root and rhizome spices | 0.1*           | –                   | 0.2*                 | Further consideration needed © |
| 850000      | Bud spices | 0.1*               | –                   | 0.2*                 | Further consideration needed © |
| 860000      | Flower pistil spices | 0.1*            | –                   | 0.2*                 | Further consideration needed © |
| 870000      | Aril spices | 0.1*              | –                   | 0.2*                 | Further consideration needed © |
| Code number | Commodity          | Existing EU MRL (mg/kg) | Existing CXL (mg/kg) | Outcome of the review | Comment |
|------------|-------------------|------------------------|---------------------|-----------------------|---------|
| 900010     | Sugar beetroots   | 15                     | 15                  | Further consideration needed<sup>(e)</sup> |         |
| 900020     | Sugar canes       | 0.1*                   | 2                   | Further consideration needed<sup>(c)</sup> |         |
| 900030     | Chicory roots     | 0.1*                   | –                   | Further consideration needed<sup>(a)</sup> |         |
| 1011010    | Swine muscle      | 0.05*                  | 0.05*               | Further consideration needed<sup>(c)</sup> |         |
| 1011020    | Swine fat tissue  | 0.05*                  | 0.05*               | Further consideration needed<sup>(c)</sup> |         |
| 1011030    | Swine liver       | 0.05*                  | 0.5                 | Further consideration needed<sup>(c)</sup> |         |
| 1011040    | Swine kidney      | 0.5                    | 0.5                 | Further consideration needed<sup>(c)</sup> |         |
| 1012010    | Bovine muscle     | 0.05*                  | 0.05*               | Further consideration needed<sup>(c)</sup> |         |
| 1012020    | Bovine fat tissue | 0.05*                  | 0.5                 | Further consideration needed<sup>(c)</sup> |         |
| 1012030    | Bovine liver      | 0.2                    | 5                   | Further consideration needed<sup>(c)</sup> |         |
| 1012040    | Bovine kidney     | 2                      | 5                   | Further consideration needed<sup>(c)</sup> |         |
| 1013010    | Sheep muscle      | 0.05*                  | 0.05*               | Further consideration needed<sup>(c)</sup> |         |
| 1013020    | Sheep fat tissue  | 0.05*                  | 0.05*               | Further consideration needed<sup>(c)</sup> |         |
| 1013030    | Sheep liver       | 0.05*                  | 5                   | Further consideration needed<sup>(c)</sup> |         |
| 1013040    | Sheep kidney      | 0.05*                  | 5                   | Further consideration needed<sup>(c)</sup> |         |
| 1014010    | Goat muscle       | 0.05*                  | 0.05*               | Further consideration needed<sup>(c)</sup> |         |
| 1014020    | Goat fat tissue   | 0.05*                  | 0.05*               | Further consideration needed<sup>(c)</sup> |         |
| 1014030    | Goat liver        | 0.05*                  | 5                   | Further consideration needed<sup>(c)</sup> |         |
| 1014040    | Goat kidney       | 0.05*                  | 5                   | Further consideration needed<sup>(c)</sup> |         |
| 1015010    | Equine muscle     | 0.05*                  | 0.05*               | Further consideration needed<sup>(c)</sup> |         |
| 1015020    | Equine fat tissue | 0.05*                  | 0.05*               | Further consideration needed<sup>(c)</sup> |         |
| 1015030    | Equine liver      | 0.05*                  | 5                   | Further consideration needed<sup>(c)</sup> |         |
| 1015040    | Equine kidney     | 0.05*                  | 5                   | Further consideration needed<sup>(c)</sup> |         |
| 1016010    | Poultry muscle    | 0.05*                  | 0.05*               | Further consideration needed<sup>(c)</sup> |         |
| 1016020    | Poultry fat tissue | 0.05*               | 0.05*              | Further consideration needed<sup>(c)</sup> |         |
| 1016030    | Poultry liver     | 0.05*                  | 0.5                 | Further consideration needed<sup>(c)</sup> |         |
| 1020010    | Cattle milk       | 0.05*                  | 0.05               | Further consideration needed<sup>(c)</sup> |         |
| 1020020    | Sheep milk        | 0.05*                  | 0.05               | Further consideration needed<sup>(c)</sup> |         |
| 1020030    | Goat milk         | 0.05*                  | 0.05                 | Further consideration needed<sup>(c)</sup> |         |
| 1020040    | Horse milk        | 0.05*                  | 0.05               | Further consideration needed<sup>(c)</sup> |         |
| 1030000    | Birds eggs        | 0.05*                  | 0.05*              | Further consideration needed<sup>(c)</sup> |         |
|           | Other commodities of animal origin | – | – | Further consideration needed<sup>(h)</sup> |         |

MRL: maximum residue level; CXL: codex maximum residue limit.

*: Indicates that the MRL is set at the limit of quantification.

(a): Tentative MRL is derived from a GAP evaluated at EU level, which is not fully supported by data but for which no risk to consumers was identified; no CXL is available (combination E-I in Appendix E).

(b): Tentative MRL is derived from a GAP evaluated at EU level, which is not fully supported by data but for which no risk to consumers was identified; existing CXL is covered by the tentative MRL (combination E-III in Appendix E).

(c): Tentative MRL is derived from a GAP evaluated at EU level, which is not fully supported by data but for which no risk to consumers was identified; CXL is not compatible with EU residue definitions (combination E-II in Appendix E).

(d): GAP evaluated at EU level is not supported by data but no risk to consumers was identified for the existing EU MRL; CXL is not compatible with EU residue definitions (combination C-II in Appendix E).

(e): MRL is derived from the existing CXL, which is not sufficiently supported by data but for which no risk to consumers is identified; GAP evaluated at EU level, which is also not fully supported by data, would lead to a lower tentative MRL (combination E-V in Appendix E).

(f): GAP evaluated at EU level is not supported by data but no risk to consumers was identified for the existing EU MRL; no CXL is available (combination C-I in Appendix E).

(g): MRL is derived from the existing CXL, which is not sufficiently supported by data but for which no risk to consumers is identified; GAP evaluated at EU level is not supported by data but the existing EU MRL is lower than the CXL (combination C-V in Appendix E).

(h): There are no relevant authorisations or import tolerances reported at EU level; no CXL is available. Either a specific LOQ or the default MRL of 0.01 mg/kg may be considered (combination A-I in Appendix E).
References

EFSA (European Food Safety Authority), 2007. Reasoned opinion on the potential chronic and acute risk to consumers’ health arising from proposed temporary EU MRLs. EFSA Journal 2007;5(3):32r, 1141 pp. https://doi.org/10.2903/j.efsa.2007.32r

EFSA (European Food Safety Authority), 2009. Reasoned opinion on the modification of the residue definition of glyphosate in genetically modified maize grain and soybeans, and in products of animal origin on request from the European Commission. EFSA Journal 2009;7(9):2009, 42 pp. https://doi.org/10.2903/j.efsa.2009.1310

EFSA (European Food Safety Authority), 2012. Reasoned Opinion on modification of the existing MRL for glyphosate in lentils. EFSA Journal 2012;10(1):2550, 25 pp. https://doi.org/10.2903/j.efsa.2012.2550. Available online: www.efsa.europa.eu

EFSA (European Food Safety Authority), 2013. Reasoned opinion on the import tolerance for glyphosate in genetically modified oilseed rape. EFSA Journal 2013;11(11):3456, 30 pp. https://doi.org/10.2903/j.efsa.2013.3456

EFSA (European Food Safety Authority), 2015. Conclusion on the peer review of the pesticide risk assessment of the active substance glyphosate. EFSA Journal 2015;13(11):4302, 107 pp. https://doi.org/10.2903/j.efsa.2015.4302. Available online: www.efsa.europa.eu

EFSA (European Food Safety Authority), 2016. Reasoned opinion on the modification of the existing maximum residue levels for glyphosate in borage and corn gromwell seeds. EFSA Journal 2016;14(4):4468, 20 pp. https://doi.org/10.2903/j.efsa.2016.4468

EFSA (European Food Safety Authority), 2018a. Reasoned Opinion on the review of the existing maximum residue levels for glyphosate according to Article 12 of Regulation (EC) No 396/2005. EFSA Journal 2018;16(5):5263, 230 pp. Available online: www.efsa.europa.eu

EFSA (European Food Safety Authority), 2018b. Evaluation of the impact of glyphosate and its residues in feed on animal health. EFSA Journal 2018; 16(5):5283, 25 pp. https://doi.org/10.2903/j.efsa.2018.5283. Available online: www.efsa.europa.eu

EFSA (European Food Safety Authority), 2019a. Completeness check report on the review of the existing MRLs of glyphosate prepared by EFSA in the framework of Article 12 of Regulation (EC) No 396/2005, 12 June 2019. Available online: www.efsa.europa.eu

EFSA (European Food Safety Authority), 2019b. Member States consultation report on the review of the existing MRLs of glyphosate prepared by EFSA in the framework of Article 12 of Regulation (EC) No 396/2005, 27 September 2019. Available online: www.efsa.europa.eu

European Commission, 1997a. Appendix A. Metabolism and distribution in plants. 7028/IV/95-rev., 22 July 1996.

European Commission, 1997b. Appendix B. General recommendations for the design, preparation and realization of residue trials. Annex 2. Classification of (minor) crops not listed in the Appendix of Council Directive 90/642/EEC. 7029/VI/95-rev. 6, 22 July 1997.

European Commission, 1997c. Appendix C. Testing of plant protection products in rotational crops. 7524/VI/95-rev. 2, 22 July 1997.

European Commission, 1997d. Appendix E. Processing studies. 7035/VI/95-rev. 5, 22 July 1997.

European Commission, 1997e. Appendix F. Metabolism and distribution in domestic animals. 7030/VI/95-rev. 3, 22 July 1997.

European Commission, 1997f. Appendix H. Storage stability of residue samples. 7032/VI/95-rev. 5, 22 July 1997.

European Commission, 1997g. Appendix I. Calculation of maximum residue level and safety intervals.7039/VI/95–22 July 1997. As amended by the document: classes to be used for the setting of EU pesticide maximum residue levels (MRLs). SANCO 10634/2010, finalised in the Standing Committee on the Food Chain and Animal Health at its meeting of 23–24 March 2010.

European Commission, 2000. Residue analytical methods. For pre-registration data requirement for Annex II (part A, section 4) and Annex III (part A, section 5 of Directive 91/414. SANCO/3029/99-rev. 4.

European Commission, 2010a. Classes to be used for the setting of EU pesticide Maximum Residue Levels (MRLs). SANCO 10634/2010-rev. 0, Finalised in the Standing Committee on the Food Chain and Animal Health at its meeting of 23–24 March 2010.

European Commission, 2010b. Residue analytical methods. For post-registration control. SANCO/825/00-rev. 8.1, 16 November 2010.

European Commission, 2016. Appendix D. Guidelines on comparability, extrapolation, group tolerances and data requirements for setting MRLs. 7525/VI/95-rev. 10.2, September 2016.

FAO (Food and Agriculture Organization of the United Nations), 2005. Glyphosate. In: Pesticide residues in food – 2005. Report of the Joint Meeting of the FAO Panel of Experts on Pesticide Residues in Food and the Environment and the WHO Core Assessment Group on Pesticides residues. 20 - 29 September 2005. FAO Plant Production and Protection Paper 183.

FAO (Food and Agriculture Organization of the United Nations), 2009. Submission and evaluation of pesticide residues data for the estimation of Maximum Residue Levels in food and feed. Pesticide Residues. 2nd Edition. FAO Plant Production and Protection Paper 197, 264 pp.
FAO (Food and Agriculture Organization of the United Nations), 2011. Glyphosate. In: Pesticide residues in food – 2011. Report of the Joint Meeting of the FAO Panel of Experts on Pesticide Residues in Food and the Environment and the WHO Core Assessment Group on Pesticides residues. 20 - 29 September 2011. FAO Plant Production and Protection Paper 211.

FAO (Food and Agriculture Organization of the United Nations), 2013. Glyphosate. In: Pesticide residues in food – 2013. Report of the Joint Meeting of the FAO Panel of Experts on Pesticide Residues in Food and the Environment and the WHO Core Assessment Group on Pesticides residues. 17 - 26 September 2013. FAO Plant Production and Protection Paper 219.

France, 2019. Clarifications on the FR comments on the draft reasoned opinion related to the review of the existing MRLs for glyphosate, 26 July 2019. Available online: www.efsa.europa.eu

Germany, 2009. Evaluation Report prepared under Article 8 of Regulation (EC) No 396/2005. MRLs for glyphosate in genetically modified soybeans and maize. 23 January 2009.

Germany, 2013a. Evaluation Report prepared under Article 8 of Regulation (EC) No 396/2005. MRLs for glyphosate in genetically modified rapeseeds. 13 May 2013.

Germany, 2013b. Renewal assessment report (RAR) on the active substance glyphosate prepared by the rapporteur Member State Germany in the framework of Regulation (EU) No 1141/2010, December 2013. Available at www.efsa.europa.eu

Germany, 2015. Final addendum to the renewal assessment report (RAR) on the active substance glyphosate prepared by the rapporteur Member State Germany in the framework of Commission Regulation (EU) No 1141/2010, compiled by EFSA in October 2015. Available online: www.efsa.europa.eu

Germany, 2017. Evaluation report prepared under Article 12 of Regulation (EC) No 396/2005. Review of the existing MRLs for glyphosate, 9 June 2017. Available online: www.efsa.europa.eu

Germany, 2019. Evaluation report prepared under Article 12 of Regulation (EC) No 396/2005. Revised Addendum of the existing MRLs for glyphosate, 17 January 2019 revised on 1 April 2019. Available online: www.efsa.europa.eu

OECD (Organisation for Economic Co-operation and Development), 2011. OECD MRL calculator: spreadsheet for single data set and spreadsheet for multiple data set, 2 March 2011. In: Pesticide Publications/Publications on Pesticide Residues. Available online: http://www.oecd.org

OECD (Organisation for Economic Co-operation and Development), 2013. Guidance document on residues in livestock. In: Series on Pesticides No 73. ENV/JM/MONO(2013)8, 04 September 2013.

United Kingdom, 2015. Evaluation Report prepared under Article 8 of Regulation (EC) No 396/2005. MRLs for glyphosate in corn gromwell seeds. 25 June 2015.

Abbreviations

| Abbreviation | Definition |
|--------------|------------|
| a.i.         | active ingredient |
| a.s.         | active substance |
| ADI          | acceptable daily intake |
| AR           | applied radioactivity |
| ARfD         | acute reference dose |
| BBCH         | growth stages of mono- and dicotyledonous plants |
| bw           | body weight |
| CAC          | Codex Alimentarius Commission |
| CEN          | European Committee for Standardization (Comité Européen de Normalisation) |
| CF           | conversion factor for enforcement residue definition to risk assessment residue definition |
| cGAP         | critical GAP |
| CXL          | code maximum residue limit |
| DALA         | days after last application |
| DAT          | days after treatment |
| DM           | dry matter |
| DT90         | period required for 90% dissipation (define method of estimation) |
| EMS          | evaluating Member State |
| EPSPS        | 5-enolpyruvylshikimate-3-phosphate (EPSP) synthase |
| Eq           | residue expressed as a.s. equivalent |
| EURPs        | European Union Reference Laboratories for Pesticide Residues (former CRLs) |
| FAO          | Food and Agriculture Organization of the United Nations |
| GAP          | Good Agricultural Practice |
| GAT          | glycine N-phenylacetyltransferase |
| GC-MS        | gas chromatography with mass spectrometry |
| GOX          | glucose oxidase |
Review of the existing MRLs for glyphosate - revised version to take into account omitted data

HPLC-MS/MS high-performance liquid chromatography with tandem mass spectrometry
HR highest residue
IEDI international estimated daily intake
IESTI international estimated short-term intake
ILV independent laboratory validation
ISO International Organisation for Standardization
IUPAC International Union of Pure and Applied Chemistry
JMPR Joint Meeting of the FAO Panel of Experts on Pesticide Residues in Food and the Environment and the WHO Expert Group on Pesticide Residues (Joint Meeting on Pesticide Residues)
LC-MS/MS liquid chromatography with tandem mass spectrometry
LOQ limit of quantification
Mo monitoring
MRL maximum residue level
MS Member States
NEU northern European Union
OECD Organisation for Economic Co-operation and Development
PBI plant back interval
PF processing factor
PHI preharvest interval
PRIMo(EFSA) Pesticide Residues Intake Model
PROFile(EFSA) Pesticide Residues Overview File
RA risk assessment
RAC raw agricultural commodity
RD residue definition
RMS rapporteur Member State
SANCO Directorate-General for Health and Consumers
SCoPAFF Standing Committee on Plants, Animals, Food and Feed (formerly: Standing Committee on the Food Chain and Animal Health SCFCAH)
SEU southern European Union
SMILES simplified molecular-input line-entry system
STMR supervised trials median residue
TRR total radioactive residue
WHO World Health Organization
# Appendix A – Summary of authorised uses considered for the review of MRLs

## A.1. Authorised uses on conventional crops

### Critical outdoor GAPs for Northern Europe

| Crop | Common name | Scientific name | Region | Outdoor/ indoor | Member state or country | Pest controlled | Formulation | Application | PHI or waiting period (days) | Comments |
|------|-------------|-----------------|--------|-----------------|--------------------------|-----------------|--------------|-------------|-----------------------------|----------|
|      |             |                 |        |                 |                          |                 | Content Type | Method | Growth stage | Number | Interval (days) | Rate | Unit |                      |          |
|      |             |                 |        |                 |                          |                 | Conc. Unit   |         | From BBCH | Until BBCH | Min. | Max. | Min. | Max. | Unit |                      |          |
| Grapefruits | Citrus paradisi | NEU Outdoor SI | Weeds | sl | 360.0 g/L | Soil treatment – general (see also comment field) | n.a. | n.a. | 1 | 2 | 0.54 | 3.60 kg | a.i./ha | 7 | During the intensive growth of weeds |
| Oranges | Citrus sinensis | NEU Outdoor SI | Weeds | sl | 360.0 g/L | Soil treatment – general (see also comment field) | n.a. | n.a. | 1 | 2 | 0.54 | 3.60 kg | a.i./ha | 7 | During the intensive growth of weeds |
| Lemons | Citrus limon | NEU Outdoor SI | Weeds | sl | 360.0 g/L | Soil treatment – general (see also comment field) | n.a. | n.a. | 1 | 2 | 0.54 | 3.60 kg | a.i./ha | 7 | During the intensive growth of weeds |
| Mandarins | Citrus reticulata, syn: Citrus deliciosa | NEU Outdoor SI | Weeds | sl | 360.0 g/L | Soil treatment – general (see also comment field) | n.a. | n.a. | 1 | 2 | 0.54 | 3.60 kg | a.i./ha | 7 | During the intensive growth of weeds |
| Almonds | Amygdalus communis, syn: Prunus dulcis | NEU Outdoor SI | Weeds | sl | 360.0 g/L | Soil treatment – general (see also comment field) | n.a. | n.a. | 1 | 2 | 0.54 | 3.60 kg | a.i./ha | 7 | During the intensive growth of weeds |
| Brazil nuts | Bertholletia excelsa | NEU Outdoor CZ | Weeds | SL | 360.0 g/L | Soil treatment – spraying | 95 | 0 | 1 | 2 | 0.72 | 2.16 kg | a.i./ha | n.a. | Up to 2,160 g a.i./ha per season |
| Cashew nuts | Anacardium occidentale | NEU Outdoor CZ | Weeds | SL | 360.0 g/L | Soil treatment – spraying | 95 | 0 | 1 | 2 | 0.72 | 2.16 kg | a.i./ha | n.a. | Up to 2,160 g a.i./ha per season |
| Chestnuts | Castanea crenata; Castanea dentata; Castanea mollissima; Castanea sativa | NEU Outdoor DE | Monocotyledonous weeds, dicotyledonous weeds | EW | 360.0 g/L | Soil treatment – general (see also comment field) | 1 | | | | | | 1.44 | kg a.i./ha | 7 | After emergence of weeds, spring bis summer |
## Critical outdoor GAPs for Northern Europe

### Conventional crops

| Crop | Scientific name | Region | Outdoor/indoor | Member state or country | Pest controlled | Formulation | Application | PHI or waiting period (days) | Comments |
|------|-----------------|--------|----------------|-------------------------|----------------|-------------|-------------|------------------------------|----------|
| Coconuts | Cocos nucifera | NEU | Outdoor CZ | Weeds | SL 360.0 g/L | Soil treatment - spraying | 95 | 0 | 1-2 | 0.72 | 2.16 | kg a.i./ha | n.a. | Up to 2,160 g a.i./ha per season |
| Hazelnuts | Corylus avellana | NEU | Outdoor DE | Monocotyledonous weeds, dicotyledonous weeds | EW 360.0 g/L | Soil treatment - general (see also comment field) | 1 | 1.44 | kg a.i./ha | 7 | After emergence of weeds, spring bis summer |
| Macadamias | Macadamia ternifolia, syn: Macadamia integrifolia; Macadamia tetraphylla | NEU | Outdoor CZ | Weeds | SL 360.0 g/L | Soil treatment - spraying | 95 | 0 | 1-2 | 0.72 | 2.16 | kg a.i./ha | n.a. | Up to 2,160 g a.i./ha per season |
| Pecans | Carya illinoinensis | NEU | Outdoor CZ | Weeds | SL 360.0 g/L | Soil treatment - spraying | 95 | 0 | 1-2 | 0.72 | 2.16 | kg a.i./ha | n.a. | Up to 2,160 g a.i./ha per season |
| Pine nut kernels | Pinus pinea | NEU | Outdoor CZ | Weeds | SL 360.0 g/L | Soil treatment - spraying | 95 | 0 | 1-2 | 0.72 | 2.16 | kg a.i./ha | n.a. | Up to 2,160 g a.i./ha per season |
| Pistachios | Pistacia vera | NEU | Outdoor CZ | Weeds | SL 360.0 g/L | Soil treatment - spraying | 95 | 0 | 1-2 | 0.72 | 2.16 | kg a.i./ha | n.a. | Up to 2,160 g a.i./ha per season |
| Walnuts | Juglans nigra; Juglans regia | NEU | Outdoor DE | Monocotyledonous weeds, dicotyledonous weeds | EW 360.0 g/L | Soil treatment - general (see also comment field) | 1 | 1.44 | kg a.i./ha | 7 | After emergence of weeds, spring bis summer |
| Apples | Malus domestica | NEU | Outdoor SI | Weeds | SL 360.0 g/L | Soil treatment - general (see also comment field) | n.a. | n.a. | 1-2 | 0.54 | 3.60 | kg a.i./ha | 7 | During the intensive growth of weeds |
| Pears | Pyrus communis | NEU | Outdoor SI | Weeds | SL 360.0 g/L | Soil treatment - general (see also comment field) | n.a. | n.a. | 1-2 | 0.54 | 3.60 | kg a.i./ha | 7 | During the intensive growth of weeds |
### Critical outdoor GAPs for Northern Europe

#### Conventional crops

| Crop | Common name | Scientific name | Region | Outdoor/indoor | Member state or country | Pest controlled | Formulation | Application | PHI or waiting period (days) |
|------|-------------|-----------------|--------|----------------|-------------------------|----------------|-------------|-------------|-----------------------------|
| Quinces | Cydonia oblonga | NEU Outdoor AT | Monocotyledonous and dicotyledonous weeds | SL 360.0 g/L Soil treatment - general (see also comment field) | 1 2 1.08 3.60 kg a.i./ha | 35 2 applications as split-application max. 1.8 kg a.i./ha |
| Medlars | Mespilus germanica | NEU Outdoor AT | Monocotyledonous and dicotyledonous weeds | SL 360.0 g/L Soil treatment - general (see also comment field) | 1 2 1.08 3.60 kg a.i./ha | 35 2 applications as split-application max. 1.8 kg a.i./ha |
| Loquats | Eriobotrya japonica | NEU Outdoor AT | Monocotyledonous and dicotyledonous weeds | SL 360.0 g/L Soil treatment - general (see also comment field) | 1 2 1.08 3.60 kg a.i./ha | 35 2 applications as split-application max. 1.8 kg a.i./ha |
| Apricots | Armeniaca vulgaris, syn: Prunus armeniaca | NEU Outdoor SI | Weeds sl 360.0 g/L Soil treatment - general (see also comment field) | n.a. n.a. 1 2 0.54 3.60 kg a.i./ha | 7 During the intensive growth of weeds |
| Cherries | Cerasus avium, syn: Prunus avium | NEU Outdoor SI | weeds sl 360.0 g/L Soil treatment - general (see also comment field) | n.a. n.a. 1 2 0.54 3.60 kg a.i./ha | 7 During the intensive growth of weeds |
| Peaches | Persica vulgaris, syn: Prunus persica | NEU Outdoor SI | Weeds sl 360.0 g/L Soil treatment - general (see also comment field) | n.a. n.a. 1 2 0.54 3.60 kg a.i./ha | 7 During the intensive growth of weeds |
| Plums | Prunus domestica | NEU Outdoor SI | Weeds sl 360.0 g/L Soil treatment - general (see also comment field) | n.a. n.a. 1 3 0.72 3.60 kg a.i./ha | 35 During the intensive growth of weeds |
| Table grapes | Vitis vinifera | NEU Outdoor CZ | Weeds SG 720.0 g/kg Soil treatment - spraying | 1 2 7 14 0.72 2.88 g a.i./ha | 14 Up to 3,600 g a.i./ha per season |
### Critical outdoor GAPs for Northern Europe

#### Conventional crops

| Crop                          | Common name       | Scientific name | Region | Outdoor/indoor | Member state or country | Pest controlled                      | Formulation | Application | PHI or waiting period (days) | Comments                                      |
|-------------------------------|-------------------|-----------------|--------|----------------|-------------------------|---------------------------------------|--------------|-------------|-----------------------------|-----------------------------------------------|
| Wine grapes                   | Vitis vinifera    |                 | NEU    | Outdoor        | SI                      | Weeds                                 | sl           | 360.0 g/L    | Soil treatment – general (see also comment field) | n.a. n.a. 1 2 0.54 3.60 kg a.i./ha 7                |
| Strawberries                  | Fragaria × ananassa |                | NEU    | Outdoor        | DE                      | Monocotyledonous, dicotyledonous weeds | 7.2 g/L      | Soil treatment – general (see also comment field) | 1 1.44 kg a.i./ha 7 | During the intensive growth of weeds |
| Blackberries                  | Rubus sect. Rubus |                 | NEU    | Outdoor        | DE                      | Monocotyledonous, dicotyledonous weeds | 7.2 g/L      | Soil treatment – general (see also comment field) | 1 1.44 kg a.i./ha 7 | During growing season, wiping. Maximum application range per crop and year 3 |
| Dewberries                    | Rubus caesius     |                 | NEU    | Outdoor        | DE                      | Monocotyledonous, dicotyledonous weeds | 7.2 g/L      | Soil treatment – general (see also comment field) | 1 1.44 kg a.i./ha 7 | During growing season, wiping. Maximum application range per crop and year 3 |
| Raspberries                   | Rubus idaeus      |                 | NEU    | Outdoor        | DE                      | Monocotyledonous, dicotyledonous weeds | 7.2 g/L      | Soil treatment – general (see also comment field) | 1 1.44 kg a.i./ha 7 | During growing season, wiping. Maximum application range per crop and year 3 |
## Critical outdoor GAPs for Northern Europe

### Conventional crops

| Common name | Scientific name | Region | Outdoor/indoor | Member state or country | Pest controlled | Formulation | Application | PHI or waiting period (days) | Comments |
|-------------|-----------------|--------|----------------|-------------------------|-----------------|-------------|-------------|----------------------------|----------|
| Blueberries | Vaccinium angustifolium; Vaccinium corymbosum; Vaccinium formosum; Vaccinium virgatum | NEU | Outdoor | DE | Monocotyledonous weeds, dicotyledonous weeds | EW 360.0 g/L | Soil treatment - general (see also comment field) | 1 | 1.44 kg a.i./ha | From 3rd year after planting, after emergence of weeds, spring bis summer |
| Cranberries | Vaccinium macrocarpon | NEU | Outdoor | DE | Monocotyledonous weeds, dicotyledonous weeds | 7.2 g/L | Soil treatment - general (see also comment field) | 1 | 1.44 kg a.i./ha | During growing season, wiping. Maximum application range per crop and year 3 |
| Currants | Ribes nigrum; Ribes rubrum | NEU | Outdoor | DE | Monocotyledonous weeds, dicotyledonous weeds | 7.2 g/L | Soil treatment - general (see also comment field) | 1 | 1.44 kg a.i./ha | During growing season, wiping. Maximum application range per crop and year 3 |
| Gooseberries | Ribes uva-crispa | NEU | Outdoor | DE | Monocotyledonous weeds, dicotyledonous weeds | 7.2 g/L | Soil treatment - general (see also comment field) | 1 | 1.44 kg a.i./ha | During growing season, wiping. Maximum application range per crop and year 3 |
# Critical outdoor GAPs for Northern Europe

## Conventional crops

| Crop            | Common name          | Scientific name                      | Region | Outdoor/indoor | Member state or country | Pest controlled                                      | Formulation | Application | PHI or waiting period (days) | Comments                                                                 |
|-----------------|----------------------|--------------------------------------|--------|----------------|--------------------------|-------------------------------------------------------|--------------|--------------|-----------------------------|--------------------------------------------------------------------------|
| Rose hips       | Rosa canina;        | Rosa canina; Rosa majalis;           | NEU    | Outdoor        | DE                       | Monocotyledonous weeds, dicotyledonous weeds          | 7.2 g/L      | Soil treatment - general (see also comment field) | 1              | 1.44 kg a.i./ha              | 7 During growing season, wiping. Maximum application range per crop and year 3 |
| Mulberries      | Morus alba;         | Morus alba; Morus nigra              | NEU    | Outdoor        | DE                       | Monocotyledonous weeds, dicotyledonous weeds          | 7.2 g/L      | Soil treatment - general (see also comment field) | 1              | 1.44 kg a.i./ha              | 7 During growing season, wiping. Maximum application range per crop and year 3 |
| Azaaroles       | Crataegus azarolus  |                                      | NEU    | Outdoor        | FR                       |                                                      |              | Soil treatment - general (see also comment field) | 1              | 2.20 kg a.i./ha              | One application per year max. Dose is expressed as ground area (as opposed to "treated area") |
| Elderberries    | Sambucus nigra      |                                      | NEU    | Outdoor        | DE                       | Monocotyledonous weeds, dicotyledonous weeds          | 7.2 g/L      | Soil treatment - general (see also comment field) | 1              | 1.44 kg a.i./ha              | 7 During growing season, wiping. Maximum application range per crop and year 3 |
| Common name       | Scientific name              | Region | Outdoor/indoor | Member state or country | Pest controlled                              | Formulation | Application |
|-------------------|------------------------------|--------|----------------|-------------------------|-----------------------------------------------|-------------|-------------|
| Table olives      | Olea europaea                | NEU    | Outdoor        | DE                      | Monocotyledonous weeds, dicotyledonous weeds  | 7.2 g/L     | Soil treatment - general (see also comment field) |
| Potatoes          | Solanum tuberosum subsp. tuberosum | NEU    | Outdoor        | NL                      | 360.0 g/l                                     | 97          | Envision    |
| Beetroots         | Beta vulgaris var. vulgaris  | NEU    | Outdoor        | DE                      | Monocotyledonous weeds, dicotyledonous weeds  | 7.2 g/L     | Soil treatment - general (see also comment field) |
| Carrots           | Daucus carota subsp. sativus | NEU    | Outdoor        | DE                      | Monocotyledonous weeds, dicotyledonous weeds  | 7.2 g/L     | Soil treatment - general (see also comment field) |
| Celeriacs         | Apium graveolens var. rapaceum | NEU    | Outdoor        | DE                      | Monocotyledonous weeds, dicotyledonous weeds  | 7.2 g/L     | Soil treatment - general (see also comment field) |
## Critical outdoor GAPs for Northern Europe

### Conventional crops

| Crop Common name | Scientific name | Region | Outdoor/indoor | Member state or country | Pest controlled | Formulation | Application |
|------------------|-----------------|--------|----------------|-------------------------|----------------|-------------|-------------|
| Horseradishes    | Armoracia rusticana | NEU | Outdoor | DE | Monocotyledonous weeds, dicotyledonous weeds | 7.2 g/L | Soil treatment - general (see also comment field) | 1 | 1.44 kg a.i./ha | 7 During growing season, wiping. Maximum application range per crop and year 3 |
| Jerusalem artichokes | Helianthus tuberosus | NEU | Outdoor | DE | Monocotyledonous weeds, dicotyledonous weeds | 7.2 g/L | Soil treatment - general (see also comment field) | 1 | 1.44 kg a.i./ha | 7 During growing season, wiping. Maximum application range per crop and year 3 |
| Parsnips          | Pastinaca sativa | NEU | Outdoor | DE | Monocotyledonous weeds, dicotyledonous weeds | 7.2 g/L | Soil treatment - general (see also comment field) | 1 | 1.44 kg a.i./ha | 7 During growing season, wiping. Maximum application range per crop and year 3 |
| Parsley roots     | Petroselinum crispum convar. radicosum | NEU | Outdoor | DE | Monocotyledonous weeds, dicotyledonous weeds | 7.2 g/L | Soil treatment - general (see also comment field) | 1 | 1.44 kg a.i./ha | 7 During growing season, wiping. Maximum application range per crop and year 3 |
### Critical outdoor GAPs for Northern Europe

#### Conventional crops

| Crop | Common name | Scientific name | Region | Outdoor/indoor | Member state or country | Pest controlled | Formulation | Application |
|------|-------------|-----------------|--------|----------------|--------------------------|----------------|-------------|-------------|
|      |             |                 |        |                |                          |                | Type | Content | Method                  | Growth stage | Number | Interval (days) | Rate | PHI or waiting period (days) | Comments |
|      |             |                 |        |                |                          |                | Conc | Unit | Method                  | From BBCH | Until BBCH | Min. | Max. | Min. | Max. | Unit | |
| Radishes | Raphanus sativus Radish Group | NEU | Outdoor | DE | Monocotyledonous weeds, dicotyledonous weeds | 7.2 g/L | Soil treatment – general (see also comment field) | 1 | 1.44 kg a.i./ha | 7 | During growing season, wiping. Maximum application range per crop and year 3 |
| Salsifies | Tragopogon porrifolius | NEU | Outdoor | DE | Monocotyledonous weeds, dicotyledonous weeds | 7.2 g/L | Soil treatment – general (see also comment field) | 1 | 1.44 kg a.i./ha | 7 | During growing season, wiping. Maximum application range per crop and year 3 |
| Swedes | Brassica napus subsp. napobrassica | NEU | Outdoor | DE | Monocotyledonous weeds, dicotyledonous weeds | SG 720.0 g/kg | Soil treatment – spraying | 85 | 85 | 1 | 1.44 kg a.i./ha | 7 | Except for seed production |
| Turnips | Brassica rapa subsp. rapa | NEU | Outdoor | DE | Monocotyledonous weeds, dicotyledonous weeds | SG 720.0 g/kg | Soil treatment – spraying | 85 | 85 | 1 | 1.44 kg a.i./ha | 7 | Except for seed production |
| Garlic | Allium sativum | NEU | Outdoor | DE | Monocotyledonous weeds, dicotyledonous weeds | 7.2 g/L | Soil treatment – general (see also comment field) | 1 | 1.44 kg a.i./ha | 7 | During growing season, wiping. Maximum application range per crop and year 3 |
### Critical outdoor GAPs for Northern Europe

#### Conventional crops

| Common name                  | Scientific name | Region | Outdoor | Member state or country | Pest controlled weed | Formulation Type | Content | Method                        | Growth stage | Application | PHI or waiting period (days) | Comments                                                                 |
|------------------------------|-----------------|--------|---------|--------------------------|----------------------|-------------------|---------|-------------------------------|---------------|-------------|-----------------------------|--------------------------------------------------------------------------|
| Onions                       | *Allium cepa*   | NEU    | Outdoor | DE                        | Monocotyledonous     | 7.2 g/L           | Soil treatment - general (see also comment field) | 1             | 1.44 kg a.i./ha               | 7                           | During growing season, wiping. Maximum application range per crop and year 3 |
| Shallots                     | *Allium cepa*   | NEU    | Outdoor | DE                        | Monocotyledonous     | 7.2 g/L           | Soil treatment - general (see also comment field) | 1             | 1.44 kg a.i./ha               | 7                           | During growing season, wiping. Maximum application range per crop and year 3 |
| Spring onions                | *Allium cepa*   | NEU    | Outdoor | DE                        | Monocotyledonous     | 7.2 g/L           | Soil treatment - general (see also comment field) | 1             | 1.44 kg a.i./ha               | 7                           | During growing season, wiping. Maximum application range per crop and year 3 |
| Tomatoes                     | *Lycopersicon*  | NEU    | Outdoor | DE                        | Monocotyledonous     | 7.2 g/L           | Soil treatment - general (see also comment field) | 1             | 1.44 kg a.i./ha               | 7                           | During growing season, wiping. Maximum application range per crop and year 3 |
## Critical outdoor GAPs for Northern Europe

### Conventional crops

| Crop | Common name | Scientific name | Region | Outdoor/indoor | Member state or country | Pest controlled | Formulation Type | Content | Method | Growth stage | Number | Interval (days) | Rate | PHI or waiting period (days) | Comments |
|------|-------------|-----------------|--------|----------------|------------------------|-----------------|------------------|---------|--------|--------------|--------|----------------|-------|------------------------|----------|
| Sweet peppers | Capsicum annuum | **NEU** Outdoor DE Monocotyledonous weeds, dicotyledonous weeds | 7.2 g/L | Soil treatment - general (see also comment field) | 1 | 1.44 kg a.i./ha | 7 | During growing season, wiping. Maximum application range per crop and year 3 |
| Aubergines | Solanum melongena | **NEU** Outdoor DE Monocotyledonous weeds, dicotyledonous weeds | 7.2 g/L | Soil treatment - general (see also comment field) | 1 | 1.44 kg a.i./ha | 7 | During growing season, wiping. Maximum application range per crop and year 3 |
| Cucumbers | Cucumis sativus | **NEU** Outdoor DE Monocotyledonous weeds, dicotyledonous weeds | 7.2 g/L | Soil treatment - general (see also comment field) | 1 | 1.44 kg a.i./ha | 7 | During growing season, wiping. Maximum application range per crop and year 3 |
| Gherkins | Cucumis sativus | **NEU** Outdoor DE Monocotyledonous weeds, dicotyledonous weeds | 7.2 g/L | Soil treatment - general (see also comment field) | 1 | 1.44 kg a.i./ha | 7 | During growing season, wiping. Maximum application range per crop and year 3 |
### Critical outdoor GAPs for Northern Europe

#### Conventional crops

| Crop                  | Common name          | Scientific name                  | Region | Outdoor/indoor | Member state or country | Pest controlled                                      | Formulation Type | Content Conc. | Method                        | Growth stage From BBCH | Interval (days) Min. | Interval (days) Max. | Rate Min. | Rate Max. | PHI or waiting period (days) | Comments                                                                 |
|-----------------------|----------------------|----------------------------------|--------|----------------|-------------------------|-------------------------------------------------------|------------------|---------------|-------------------------------|------------------------|-----------------------|-----------------------|------------|-----------|-----------------------------|-------------------------------------------------------------------------|
| Courgettes            | Cucurbita pepo       | Zucchini Group                   | NEU    | Outdoor        | DE                      | Monocotyledonous weeds, dicotyledonous weeds          | g/L              | 7.2           | Soil treatment - general (see also comment field) | 1                      | 1                      | 1.44 kg/a.l./ha          | 7          |            |                             | During growing season, wiping. Maximum application range per crop and year 3 |
| Melons                | Cucumis melo         |                                  | NEU    | Outdoor        | DE                      | Monocotyledonous weeds, dicotyledonous weeds          | g/L              | 7.2           | Soil treatment - general (see also comment field) | 1                      | 1                      | 1.44 kg/a.l./ha          | 7          |            |                             | During growing season, wiping. Maximum application range per crop and year 3 |
| Pumpkins              | Cucurbita maxima     |                                  | NEU    | Outdoor        | DE                      | Monocotyledonous weeds, dicotyledonous weeds          | g/L              | 7.2           | Soil treatment - general (see also comment field) | 1                      | 1                      | 1.44 kg/a.l./ha          | 7          |            |                             | During growing season, wiping. Maximum application range per crop and year 3 |
| Watermelons           | Citrullus vulgaris;  | Citrullus lanatus                | NEU    | Outdoor        | DE                      | Monocotyledonous weeds, dicotyledonous weeds          | g/L              | 7.2           | Soil treatment - general (see also comment field) | 1                      | 1                      | 1.44 kg/a.l./ha          | 7          |            |                             | During growing season, wiping. Maximum application range per crop and year 3 |
| Sweet corn            | Zea mays; convar.    | Saccharata                       | NEU    | Outdoor        | DE                      | Monocotyledonous weeds, dicotyledonous weeds, self-sown crops | SL 360.0 g/L    | 360.0         | Soil treatment - general (see also comment field) | 0                      | 1                      | 1.08 kg/a.l./ha          | n.a.        |            |                             | Up to 2 days before sowing                                               |
### Critical outdoor GAPs for Northern Europe

#### Conventional crops

| Crop                  | Scientific name          | Region  | Member state or country | Pest controlled                               | Formulation | Application |
|-----------------------|--------------------------|---------|-------------------------|------------------------------------------------|-------------|-------------|
| **Broccoli**          | *Brassica oleracea* var. *italica* | NEU     | Outdoor/indoor           | Monocotyledonous weeds, dicotyledonous weeds    | 7.2 g/L     | Soil treatment – general (see also comment field) |
| **Cauliflowers**      | *Brassica oleracea* var. *botrytis* | NEU     | Outdoor/indoor           | Monocotyledonous weeds, dicotyledonous weeds    | 7.2 g/L     | Soil treatment – general (see also comment field) |
| **Brussels sprouts**  | *Brassica oleracea* var. *gemmifera* | NEU     | Outdoor/indoor           | Monocotyledonous weeds, dicotyledonous weeds    | 7.2 g/L     | Soil treatment – general (see also comment field) |
| **Head cabbages**     | *Brassica oleracea* var. *capitata* | NEU     | Outdoor/indoor           | Monocotyledonous weeds, dicotyledonous weeds    | 7.2 g/L     | Soil treatment – general (see also comment field) |
### Critical outdoor GAPs for Northern Europe

#### Conventional crops

| Common name         | Scientific name                          | Region | Outdoor/indoor | Member state or country | Pest controlled                                               | Formulation | Application | PHI or waiting period (days) | Comments |
|---------------------|------------------------------------------|--------|----------------|-------------------------|---------------------------------------------------------------|-------------|--------------|-----------------------------|----------|
| Chinese cabbages    | Brassica rapa subsp. pekinensis          | NEU    | Outdoor        | DE                      | Monocotyledonous weeds, dicotyledonous weeds                  | 7.2 g/L     | Soil treatment – general (see also comment field) | 1             | 1.44 kg a.i./ha             | 7        |
| Kales               | Brassica oleracea var. satiblica; Brassica oleracea var. viridis | NEU    | Outdoor        | DE                      | Monocotyledonous weeds, dicotyledonous weeds                  | SG 720.0 g/kg | Soil treatment – spraying | 85 – 85       | 1.44 kg a.i./ha             | 7        |
| Kohlrabies           | Brassica oleracea var. gongylodes        | NEU    | Outdoor        | DE                      | Monocotyledonous weeds, dicotyledonous weeds                  | 7.2 g/L     | Soil treatment – general (see also comment field) | 1             | 1.44 kg a.i./ha             | 7        |
| Lamb’s lettuces     | Valerianella locusta                     | NEU    | Outdoor        | DE                      | Monocotyledonous weeds, dicotyledonous weeds                  | 7.2 g/L     | Soil treatment – general (see also comment field) | 1             | 1.44 kg a.i./ha             | 7        |
| Lettuces            | Lactuca sativa                           | NEU    | Outdoor        | DE                      | Monocotyledonous weeds, dicotyledonous weeds                  | 7.2 g/L     | Soil treatment – general (see also comment field) | 1             | 1.44 kg a.i./ha             | 7        |
## Critical outdoor GAPs for Northern Europe

### Conventional crops

| Crop | Scientific name | Region | Outdoor/indoor | Member state or country | Pest controlled | Formulation | Application | PHI or waiting period (days) |
|------|-----------------|--------|----------------|--------------------------|-----------------|-------------|-------------|-------------------------------|
| ESCAROLES | Cichorium endivia var. latifolia | NEU | Outdoor | DE | Monocotyledonous weeds, dicotyledonous weeds | 7.2 g/L | Soil treatment - general (see also comment field) | 1 | 1.44 kg a.i./ha | 7 During growing season, wiping. Maximum application range per crop and year 3 |
| CRESSES | Lepidium sativum subsp. sativum | NEU | Outdoor | DE | Monocotyledonous weeds, dicotyledonous weeds | 7.2 g/L | Soil treatment - general (see also comment field) | 1 | 1.44 kg a.i./ha | 7 During growing season, wiping. Maximum application range per crop and year 3 |
| LAND CRESSES | Barbarea verna | NEU | Outdoor | DE | Monocotyledonous weeds, dicotyledonous weeds | 7.2 g/L | Soil treatment - general (see also comment field) | 1 | 1.44 kg a.i./ha | 7 During growing season, wiping. Maximum application range per crop and year 3 |
| ROMAN ROCKET | Eruca sativa | NEU | Outdoor | DE | Monocotyledonous weeds, dicotyledonous weeds | 7.2 g/L | Soil treatment - general (see also comment field) | 1 | 1.44 kg a.i./ha | 7 During growing season, wiping. Maximum application range per crop and year 3 |
## Critical outdoor GAPs for Northern Europe

### Conventional crops

| Crop | Common name | Scientific name | Region | Outdoor/indoor | Member state or country | Pest controlled | Formulation | Application | PHI or waiting period (days) | Comments |
|------|-------------|-----------------|--------|----------------|-------------------------|-----------------|--------------|-------------|-----------------------------|----------|
|      |             |                 |        |                |                         |                 | Content      | Method                   | Rate          |                                      |
|      |             |                 |        |                |                         |                 | Conc. | Unit | Growth stage | Number | Interval (days) | Rate | Unit |                                      |
|      |             |                 |        |                |                         |                 | From BBCH | Until BBCH | Min. | Max. | Min. | Max. |                                      |
| Red mustards | Brassica juncea var. rugosa | NEU | Outdoor | DE | Monocotyledonous weeds, dicotyledonous weeds | 7.2 | g/L | Soil treatment - general (see also comment field) | 1 | 1.44 | kg | a.i./ha | 7 | During growing season, wiping. Maximum application range per crop and year 3 |
| Baby leaf crops | Not specified | NEU | Outdoor | DE | Monocotyledonous weeds, dicotyledonous weeds | 7.2 | g/L | Soil treatment - general (see also comment field) | 1 | 1.44 | kg | a.i./ha | 7 | During growing season, wiping. Maximum application range per crop and year 3 |
| Spinaches | Spinacia oleracea | NEU | Outdoor | DE | Monocotyledonous weeds, dicotyledonous weeds | 7.2 | g/L | Soil treatment - general (see also comment field) | 1 | 1.44 | kg | a.i./ha | 7 | During growing season, wiping. Maximum application range per crop and year 3 |
| Purslanes | Portulaca oleracea | NEU | Outdoor | DE | Monocotyledonous weeds, dicotyledonous weeds | 7.2 | g/L | Soil treatment - general (see also comment field) | 1 | 1.44 | kg | a.i./ha | 7 | During growing season, wiping. Maximum application range per crop and year 3 |
### Critical outdoor GAPs for Northern Europe

#### Conventional crops

| Crop          | Common name | Scientific name | Region | Outdoor/indoor | Member state or country | Pest controlled | PHI or waiting period (days) | Comments |
|---------------|-------------|-----------------|--------|----------------|------------------------|-----------------|-------------------------------|----------|
| Chards        | Beta vulgaris var. flavescens | NEU Outdoor DE | Monocotyledonous weeds, dicotyledonous weeds | 7.2 g/L Soil treatment - general (see also comment field) | 1 | 1.44 kg a.i./ha | During growing season, wiping. Maximum application range per crop and year 3 |
| Watercresses  | Nasturtium officinale | NEU Outdoor DE | Monocotyledonous weeds, dicotyledonous weeds | 7.2 g/L Soil treatment - general (see also comment field) | 1 | 1.44 kg a.i./ha | During growing season, wiping. Maximum application range per crop and year 3 |
| Witloofs      | Cichorium intybus Foliolatum group | NEU Outdoor DE | Monocotyledonous weeds, dicotyledonous weeds | 7.2 g/L Soil treatment - general (see also comment field) | 1 | 1.44 kg a.i./ha | Application refers to the field phase (root production). No application is performed during the forcing phase (witloof production). Wiping application. Maximum application range per crop and year 3 |
### Critical outdoor GAPs for Northern Europe

#### Conventional crops

| Crop Common name | Scientific name | Region | Outdoor/indoor | Member state or country | Pest controlled | Formulation | Application |
|------------------|-----------------|--------|-----------------|--------------------------|-----------------|-------------|-------------|
|                  |                 |        |                 |                          |                 | Type        | Method       |
|                  |                 |        |                 |                          |                 | Concentration Unit | Method | Growth stage | Number | Interval (days) | Rate | PHI or waiting period (days) | Comments |
|                  |                 |        |                 |                          |                 | Concentration Unit | Method | From BBCH | Until BBCH | Min. | Max. | Min. | Max. | Unit | | |
| Chervil          | Anthriscus cerefolium | NEU     | Outdoor          | DE                        | Monocotyledonous weeds, dicotyledonous weeds | 7.2 g/L | Soil treatment - general (see also comment field) | 1 | 1.44 kg a.i./ha | 7 | During growing season, wiping. Maximum application range per crop and year 3 |
| Chives           | Allium schoenoprasum | NEU     | Outdoor          | DE                        | Monocotyledonous weeds, dicotyledonous weeds | 7.2 g/L | Soil treatment - general (see also comment field) | 1 | 1.44 kg a.i./ha | 7 | During growing season, wiping. Maximum application range per crop and year 3 |
| Celery leaves    | Apium graveolens var. secalinum | NEU   | Outdoor          | DE                        | Monocotyledonous weeds, dicotyledonous weeds | 7.2 g/L | Soil treatment - general (see also comment field) | 1 | 1.44 kg a.i./ha | 7 | During growing season, wiping. Maximum application range per crop and year 3 |
| Parsley          | Petroselinum crispum | NEU     | Outdoor          | DE                        | Monocotyledonous weeds, dicotyledonous weeds | 7.2 g/L | Soil treatment - general (see also comment field) | 1 | 1.44 kg a.i./ha | 7 | During growing season, wiping. Maximum application range per crop and year 3 |
## Critical outdoor GAPs for Northern Europe

### Conventional crops

| Crop | Scientific name | Region | Outdoor/indoor | Pest controlled | Formulation Type | Content Conc. | Method | Growth stage | Number | Interval (days) | Rate | PHI or waiting period (days) | Comments |
|------|-----------------|--------|----------------|-----------------|------------------|---------------|---------|--------------|--------|----------------|-------|---------------------------|----------|
| Sage | Salvia officinalis | NEU     | Outdoor       | DE              | Monocotyledonous weeds, dicotyledonous weeds | 7.2 g/L       | Soil treatment - general (see also comment field) | 1 | 1.44 kg a.i./ha | 7 | During growing season, wiping. Maximum application range per crop and year 3 |
| Rosemary | Rosmarinus officinalis | NEU     | Outdoor | DE | Monocotyledonous weeds, dicotyledonous weeds | 7.2 g/L | Soil treatment - general (see also comment field) | 1 | 1.44 kg a.i./ha | 7 | During growing season, wiping. Maximum application range per crop and year 3 |
| Thyme | Thymus vulgaris | NEU     | Outdoor     | DE              | Monocotyledonous weeds, dicotyledonous weeds | 7.2 g/L | Soil treatment - general (see also comment field) | 1 | 1.44 kg a.i./ha | 7 | During growing season, wiping. Maximum application range per crop and year 3 |
| Basil | Ocimum basilicum | NEU     | Outdoor     | DE              | Monocotyledonous weeds, dicotyledonous weeds | 7.2 g/L | Soil treatment - general (see also comment field) | 1 | 1.44 kg a.i./ha | 7 | During growing season, wiping. Maximum application range per crop and year 3 |
## Critical outdoor GAPs for Northern Europe

### Conventional crops

| Crop | Common name | Scientific name | Region | Outdoor/indoor | Member state or country | Pest controlled | Formulation Type | Content | Method | Growth stage | Application Number | Interval (days) | Rate | PHI or waiting period (days) | Comments |
|------|-------------|----------------|--------|----------------|-------------------------|-----------------|-----------------|---------|--------|--------------|----------------------|----------------|------|-----------------------------|----------|
| Laurel | Laurus nobilis | NEU | Outdoor | DE | Monocotyledonous weeds, dicotyledonous weeds | 7.2 g/L | Soil treatment – general (see also comment field) | From BBCH 1 | Until BBCH 1 | 1 | 1.44 kg a.i./ha | 7 | During growing season, wiping. Maximum application range per crop and year 3 |
| Tarragon | Artemisia dracunculus | NEU | Outdoor | DE | Monocotyledonous weeds, dicotyledonous weeds | 7.2 g/L | Soil treatment – general (see also comment field) | From BBCH 1 | Until BBCH 1 | 1 | 1.44 kg a.i./ha | 7 | During growing season, wiping. Maximum application range per crop and year 3 |
| Beans (with pods) | Phaseolus vulgaris | NEU | Outdoor | FR | Soil treatment – general (see also comment field) | From BBCH 1 | Until BBCH 1 | 1 | 2.52 kg a.i./ha | 30 | 1 application per year (in-between crop production periods) |
| Beans (without pods) | Phaseolus vulgaris | NEU | Outdoor | FR | Soil treatment – general (see also comment field) | From BBCH 1 | Until BBCH 1 | 1 | 2.52 kg a.i./ha | 30 | 1 application per year (in-between crop production periods) |
| Peas (with pods) | Pisum sativum | NEU | Outdoor | FR | Soil treatment – general (see also comment field) | From BBCH 1 | Until BBCH 1 | 1 | 2.52 kg a.i./ha | 30 | 1 application per year (in-between crop production periods) |
| Peas (without pods) | Pisum sativum | NEU | Outdoor | FR | Soil treatment – general (see also comment field) | From BBCH 1 | Until BBCH 1 | 1 | 2.52 kg a.i./ha | 30 | 1 application per year (in-between crop production periods) |
| Crop | Scientific name | Region | Outdoor/indoor | Member state or country | Pest controlled | Formulation | Method | Application | PHI or waiting period (days) | Comments |
|------|----------------|--------|----------------|------------------------|----------------|-------------|--------|-------------|-----------------------------|----------|
| Lentils (fresh) | *Lens culinaris*, syn: *Lens esculenta* | NEU | Outdoor DE | Monocotyledonous weeds, dicotyledonous weeds | SL 480.0 g/L | Soil treatment – general (see also comment field) | 2 | 21 | 1.44 kg a.i./ha | 21 After emergence of weeds |
| Asparagus | *Asparagus officinalis* | NEU | Outdoor DE | Monocotyledonous weeds, dicotyledonous weeds | 7.2 g/L | Soil treatment – general (see also comment field) | 1 | 1.44 kg a.i./ha | 7 During growing season, wiping. Maximum application range per crop and year 3 |
| Cardoons | *Cynara cardunculus* Cardoon group | NEU | Outdoor DE | Monocotyledonous weeds, dicotyledonous weeds | 7.2 g/L | Soil treatment – general (see also comment field) | 1 | 1.44 kg a.i./ha | 7 During growing season, wiping. Maximum application range per crop and year 3 |
| Celeries | *Apium graveolens* var. dulce | NEU | Outdoor DE | Monocotyledonous weeds, dicotyledonous weeds | 7.2 g/L | Soil treatment – general (see also comment field) | 1 | 1.44 kg a.i./ha | 7 During growing season, wiping. Maximum application range per crop and year 3 |
| Florence fennels | *Foeniculum vulgare* var. azoritum | NEU | Outdoor DE | Monocotyledonous weeds, dicotyledonous weeds | 7.2 g/L | Soil treatment – general (see also comment field) | 1 | 1.44 kg a.i./ha | 7 During growing season, wiping. Maximum application range per crop and year 3 |
### Critical outdoor GAPs for Northern Europe

#### Conventional crops

| Crop                      | Scientific name | Region | Outdoor/indoor | Member state or country | Pest controlled | Formulation | Application |
|---------------------------|-----------------|--------|----------------|-------------------------|-----------------|-------------|-------------|
| Globe artichokes          | Cynara cardunculus | NEU    | Outdoor        | DE                      | Monocotyledonous weeds, dicotyledonous weeds | 7.2 g/L | Soil treatment – general (see also comment field) | 1 | 1.44 kg a.i./ha | 7 During growing season, wiping. Maximum application range per crop and year 3 |
| Leeks                     | Allium ampeloprasum | NEU    | Outdoor        | DE                      | Monocotyledonous weeds, dicotyledonous weeds | 7.2 g/L | Soil treatment – general (see also comment field) | 1 | 1.44 kg a.i./ha | 7 During growing season, wiping. Maximum application range per crop and year 3 |
| Rhubarbs                  | Rheum rhabarbarum | NEU    | Outdoor        | DE                      | Monocotyledonous weeds, dicotyledonous weeds | 7.2 g/L | Soil treatment – general (see also comment field) | 1 | 1.44 kg a.i./ha | 7 During growing season, wiping. Maximum application range per crop and year 3 |
| Bamboo shoots             | Bambusa vulgaris; Phyllostachys edulis | NEU    | Outdoor        | DE                      | Monocotyledonous weeds, dicotyledonous weeds | 7.2 g/L | Soil treatment – general (see also comment field) | 1 | 1.44 kg a.i./ha | 7 During growing season, wiping. Maximum application range per crop and year 3 |
## Critical outdoor GAPs for Northern Europe

### Conventional crops

| Crop Common name | Scientific name | Region | Outdoor/indoor | Member state or country | Pest controlled | Formulation Type | Content Conc. Unit | Method Growth stage From BBCH | Until BBCH | Number | Interval (days) | Rate | PHI or waiting period (days) | Comments |
|------------------|-----------------|--------|----------------|-------------------------|-----------------|-----------------|-------------------|--------------------------|-------------|--------|----------------|------|-----------------------------|----------|
| Palm hearts      | Bactris gasipaes; Cocos nucifera; Daemonorops jenkinsiana; Euterpe edulis; Euterpe oleracea | NEU    | Outdoor        | DE                      | Monocotyledonous weeds, dicotyledonous weeds | 7.2 g/L         | Soil treatment - general (see also comment field) | 1 |                        | 1 | 1.44 | kg a.i./ha | 7 | During growing season, wiping. Maximum application range per crop and year 3 |
| Cultivated fungi | Not specified    | NEU    | Outdoor        | DE                      | Monocotyledonous weeds, dicotyledonous weeds | 7.2 g/L         | Soil treatment - general (see also comment field) | 1 |                        | 1 | 1.44 | kg a.i./ha | 7 | During growing season, wiping. Maximum application range per crop and year 3 |
| Wild fungi       | Not specified    | NEU    | Outdoor        | AT                      | Stump shooting; forest | SL 360.0 g/L    | Local treatment - dabbing or rubbing | 1 |                        | 1 | 5.40 | kg a.i./ha | n.a. | Label restrictions to exclude possible contamination from forest use |
| Beans (dry)      | Phaseolus vulgaris | NEU    | Outdoor        | NL                      | Foliar treatment - broadcast spraying | 360.0          | 89 | 1 | 0.72 | 2.16 | kg a.i./ha | 7 | Envision, Roundup+, Etna Next, Roundup Force, Roundup Evolution, Panic Free, |
| Lentils (dry)    | Lens culinaris, syn: Lens esculenta | NEU    | Outdoor        | NL                      | Foliar treatment - broadcast spraying | 360.0          | 89 | 1 | 0.72 | 2.16 | kg a.i./ha | 7 | |
| Peas (dry)       | Pisum sativum    | NEU    | Outdoor        | NL                      | Foliar treatment - broadcast spraying | 360.0          | 89 | 1 | 0.72 | 2.16 | kg a.i./ha | 7 | |
### Critical outdoor GAPs for Northern Europe

#### Conventional crops

| Crop | Scientific name | Region | Outdoor/indoor | Member state or country | Pest controlled | Formulation | Application | PHI or waiting period (days) | Comments |
|------|-----------------|--------|----------------|-------------------------|----------------|-------------|-------------|-------------------------------|----------|
| Lupins (dry) | Lupinus albus subsp. albus; Lupinus angustifolius; Lupinus luteus; Lupinus mutabilis | NEU | Outdoor | NL | 36.0 | Foliar treatment - broadcast spraying | 89 | 1 | 0.72 | 2.16 kg a.i./ha | 7 |
| Linseeds | Linum usitatissimum | NEU | Outdoor | EE, CZ, LT, LV, DE, BE | Foliar treatment - broadcast spraying | 1 | 1.44 g a.i./ha | 14 | Before harvest |
| Peanuts | Arachis hypogaea | NEU | Outdoor | DE | 7.2 g/L | Soil treatment - general (see also comment field) | 1 | 1.44 kg a.i./ha | 7 | During growing season, wiping. Maximum application range per crop and year 3 |
| Poppy seeds | Papaver somniferum subsp. somniferum | NEU | Outdoor | DE | 7.2 g/L | Soil treatment - general (see also comment field) | 1 | 1.44 kg a.i./ha | 7 | During growing season, wiping. Maximum application range per crop and year 3 |
| Sesame seeds | Sesamum indicum | NEU | Outdoor | DE | 7.2 g/L | Soil treatment - general (see also comment field) | 1 | 1.44 kg a.i./ha | 7 | During growing season, wiping. Maximum application range per crop and year 3 |
| Sunflower seeds | Helianthus annuus | NEU | Outdoor | HU | Desiccation SL | 36.0 | Foliar treatment - broadcast spraying | 82 | 1 | 0.72 | 1.80 kg a.i./ha | 14 |
## Critical outdoor GAPs for Northern Europe

### Conventional crops

| Crop | Common name | Scientific name | Region | Outdoor/indoor | Member state or country | Pest controlled | Formulation | Application | PHI or waiting period (days) | Comments |
|------|-------------|-----------------|--------|----------------|-------------------------|-----------------|--------------|-------------|-------------------------------|----------|
| Rapeseeds | *Brassica napus* subsp. *napus* | NEU Outdoor EE, CZ, LT, LV, DE, BE | Foliar treatment – broadcast spraying | 1 | 1.44 g a.i./ha | 14 | Before harvest |
| Soyabean | *Glycine max* | NEU Outdoor HU | Desiccation | SL 360.0 g/L | Foliar treatment – broadcast spraying | 82 | 1 | 1.08 kg a.i./ha | 14 |
| Mustard seeds | *Brassica juncea*; *Brassica nigra*; *Sinapis alba* | NEU Outdoor NL | Foliar treatment – broadcast spraying | SL 720.0 g/L | 89 | 1 | 1.80 kg a.i./ha | 7 | Roundup Record |
| Cotton seeds | *Gossypium barbadense*; *Gossypium herbaceum* | NEU Outdoor DE | Monocotyledonous weeds, dicotyledonous weeds | 7.2 g/L | Soil treatment – general (see also comment field) | 1 | 1.44 kg a.i./ha | 7 | During growing season, wiping. Maximum application range per crop and year 3 |
| Pumpkin seeds | *Cucurbita pepo* Styrian Hulless Group | NEU Outdoor DE | Monocotyledonous weeds, dicotyledonous weeds | 7.2 g/L | Soil treatment – general (see also comment field) | 1 | 1.44 kg a.i./ha | 7 | During growing season, wiping. Maximum application range per crop and year 3 |
| Safflower seeds | *Carthamus tinctorius* | NEU Outdoor DE | Monocotyledonous weeds, dicotyledonous weeds | 7.2 g/L | Soil treatment – general (see also comment field) | 1 | 1.44 kg a.i./ha | 7 | During growing season, wiping. Maximum application range per crop and year 3 |
| Borage seeds | *Borago officinalis* | NEU Outdoor UK | Foliar treatment – broadcast spraying | 480 g/L | 1 | 1.44 kg a.i./ha | 14 | desiccant use on corn gromwell seeds (EFSA, 2016) |
### Critical outdoor GAPs for Northern Europe

#### Conventional crops

| Common name | Scientific name | Region | Outdoor/indoor | Member state or country | Pest controlled | Formulation Type | Content Conc. Unit | Method Growth stage From BBCH Until BBCH | Application Number | Interval (days) | Rate Min. Max. | PHI or waiting period (days) | Comments |
|-------------|-----------------|--------|----------------|-------------------------|-----------------|------------------|-------------------|------------------------------------------|--------------------|---------------|--------------|-----------------------------|----------|
| Gold of pleasure seeds | Camelina sativa | NEU | Outdoor | DE | Monocotyledonous weeds, dicotyledonous weeds | 7.2 g/L | Soil treatment - general (see also comment field) | 1 | | 1.44 kg a.i./ha | 7 | During growing season, wiping. Maximum application range per crop and year 3 |
| Hemp seeds | Cannabis sativa subsp. Sativa; Cannabis sativa subsp. spontanea | NEU | Outdoor | UK | SL 450.0 g/L | Soil treatment - general (see also comment field) | 1 | | 1.44 kg a.i./ha | 1 | Application methods - via rotary atomisers, weedwiper |
| Castor beans | Ricinus communis | NEU | Outdoor | DE | Monocotyledonous weeds, dicotyledonous weeds | 7.2 g/L | Soil treatment - general (see also comment field) | 1 | | 1.44 kg a.i./ha | 7 | During growing season, wiping. Maximum application range per crop and year 3 |
| Olives for oil production | Olea europaea var. europaea | NEU | Outdoor | SI | Weeds sl 360.0 g/L | Soil treatment - general (see also comment field) | n.a. | n.a. | 1 | 2 | 0.54 3.60 kg a.i./ha | 7 | |
| Barley | Hordeum vulgare | NEU | Outdoor | FR | Foliar treatment - general (see also comment field) | | 1 | | 2.16 kg a.i./ha | 7 | desiccant use |
| Buckwheat | Fagopyrum esculentum | NEU | Outdoor | NL | Foliar treatment - broadcast spraying | 89 | 1 | | 0.72 2.16 kg a.i./ha | 7 | |
| Maize | Zea mays | NEU | Outdoor | DE | Monocotyledonous weeds, dicotyledonous weeds | Sl 360.0 g/L | Foliar treatment - broadcast spraying | 89 | 1 | | 1.80 kg a.i./ha | 14 | Lodging cereal except seed and brewer's cereal |
## Critical outdoor GAPs for Northern Europe

### Conventional crops

| Crop                        | Common name                 | Scientific name        | Region | Outdoor/indoor | Member state or country | Pest controlled                  | Formulation | Application |
|-----------------------------|-----------------------------|------------------------|--------|----------------|-------------------------|-----------------------------------|-------------|-------------|
| Common Name                 | Scientific name             | Region                 |         |                |                         |                                   |             |             |
| Common millet               | Panicum miliaceum           | NEU Outdoor DE         | Monocotyledonous weeds, dicotyledonous weeds | SI     | 360.0 g/L      | Foliar treatment - broadcast spraying | 89          | 1           | 1.80 kg a.i./ha | 14 Lodging cereal except seed and brewer’s cereal |
| Oat                         | Avena sativa                | NEU Outdoor NL         | Monocotyledonous weeds, dicotyledonous weeds | SL     | 480.0 g/L      | Foliar treatment - broadcast spraying | 89          | 1           | 0.72 2.16 kg a.i./ha | 7 |
| Rye                         | Secale cereale              | NEU Outdoor NL         | Monocotyledonous weeds, dicotyledonous weeds | SI     | 360.0 g/L      | Foliar treatment - broadcast spraying | 89          | 1           | 0.72 2.16 kg a.i./ha | 7 |
| Sorghum                     | Sorghum bicolor             | NEU Outdoor DE         | Monocotyledonous weeds, dicotyledonous weeds | SI     | 480.0 g/L      | Foliar treatment - broadcast spraying | 89          | 1           | 1.80 kg a.i./ha | 14 Lodging cereal except seed and brewer’s cereal |
| Wheat                       | Triticum aestivum           | NEU Outdoor NL         | Monocotyledonous weeds, dicotyledonous weeds | SI     | 7.2 g/L        | Foliar treatment - broadcast spraying | 89          | 1           | 0.72 2.16 kg a.i./ha | 7 |
| Herbal infusions from flowers | Not specified               | NEU Outdoor DE         | Monocotyledonous weeds, dicotyledonous weeds | SI     | 7.2 g/L        | Soil treatment - general (see also comment field) | 1           |              | 1.44 kg a.i./ha | During growing season, wiping. Maximum application range per crop and year 3 |
| Herbal infusions from leaves and herbs | Not specified               | NEU Outdoor DE         | Monocotyledonous weeds, dicotyledonous weeds | SI     | 7.2 g/L        | Soil treatment - general (see also comment field) | 1           |              | 1.44 kg a.i./ha | During growing season, wiping. Maximum application range per crop and year 3 |
### Critical outdoor GAPs for Northern Europe

| Crop Common name | Scientific name | Region | Outdoor/indoor | Member state or country | Pest controlled | Formulation Type | Content | Method | Growth stage | Application | PHI or waiting period (days) | Rate | Comments |
|------------------|-----------------|--------|----------------|-------------------------|-----------------|-------------------|---------|--------|--------------|-------------|----------------------------|-------|----------|
| Herbal infusions from roots | Not specified | NEU | Outdoor | DE | Monocotyledonous weeds, dicotyledonous weeds | 7.2 g/L | Soil treatment - general (see also comment field) | 1 | 1.44 kg a.i./ha | 7 | During growing season, wiping. Maximum application range per crop and year 3 |
| Hops | *Humulus lupulus* | NEU | Outdoor | DE | Monocotyledonous weeds, dicotyledonous weeds | 7.2 g/L | Soil treatment - general (see also comment field) | 1 | 1.44 kg a.i./ha | 7 | During growing season, wiping. Maximum application range per crop and year 3 |
| Seed spices | Not specified | NEU | Outdoor | DE | Monocotyledonous weeds, dicotyledonous weeds | 7.2 g/L | Soil treatment - general (see also comment field) | 1 | 1.44 kg a.i./ha | 7 | During growing season, wiping. Maximum application range per crop and year 3 |
| Fruit spices | Not specified | NEU | Outdoor | DE | Monocotyledonous weeds, dicotyledonous weeds | 7.2 g/L | Soil treatment - general (see also comment field) | 1 | 1.44 kg a.i./ha | 7 | During growing season, wiping. Maximum application range per crop and year 3 |
## Critical outdoor GAPs for Northern Europe

### Conventional crops

| Crop Common name | Scientific name | Region | Pest controlled | Formulation | Application |
|------------------|-----------------|--------|------------------|-------------|-------------|
| Root and rhizome spices | | NEU | Outdoor DE | Monocotyledonous weeds, dicotyledonous weeds | 7.2 g/L | Soil treatment - general (see also comment field) |
| Sugar beets | Beta vulgaris subsp. vulgaris var. altissima | NEU | Outdoor DE | Monocotyledonous weeds, dicotyledonous weeds | SL 360.0 g/L | Soil treatment - spraying |
| Chicory roots | Cichorium intybus; Sativum group | NEU | Outdoor FR | | | |
| Alfalfa (for forage) | Medicago sativa | NEU | Outdoor FR | | | |
| Clover (for forage) | Trifolium spp. | NEU | Outdoor FR | | | |
| Grass (for forage) | Not specified | NEU | Outdoor SI | Weeds | sl 360.0 g/L | Foliar treatment - general (see also comment field) |
| Fodder beets | Beta vulgaris spp. vulgaris var. crassa | NEU | Outdoor AT | Beet proliferation and cirsium arvense | SL 360.0 g/L | Local treatment - dabbing or rubbing |

**GAP:** Good Agricultural Practice; **BBCH:** growth stages of mono- and dicotyledonous plants; **PHI:** preharvest interval; **NEU:** northern European Union; **SEU:** southern European Union; **a.i.:** active ingredient.
### Critical outdoor GAPs for Southern Europe

#### Conventional crops

| Crop | Common name | Scientific name | Region | Outdoor/Indoor | Member state or country | Pest controlled | Formulation | Content Type | Growth stage | Application Method | Growth stage | Interval (days) | Rate | PHI or waiting period (days) | Comments (max. 250 characters) |
|------|-------------|-----------------|--------|----------------|-------------------------|-----------------|--------------|-------------|--------------|-----------------|---------------|----------------|------|---------------------------|-----------------------------|
| Grapefruits | Citrus paradisi | SEU Outdoor HR Perennial weeds | SL 360.0 g/L Soil treatment – general (see also comment field) | n.a. | n.a. | 1 2 | 1.44 | 3.60 kg a.i./ha | 7 | In orchards older than 2 years (3 years after planting) BBCH not specified Spraying with sprayer |
| Oranges | Citrus sinensis | SEU Outdoor HR Perennial weeds | SL 360.0 g/L Soil treatment – general (see also comment field) | n.a. | n.a. | 1 2 | 1.44 | 3.60 kg a.i./ha | 7 | In orchards older than 2 years (3 years after planting) BBCH not specified Spraying with sprayer |
| Lemons | Citrus limon | SEU Outdoor HR Perennial weeds | SL 360.0 g/L Soil treatment – general (see also comment field) | n.a. | n.a. | 1 2 | 1.44 | 3.60 kg a.i./ha | 7 | In orchards older than 2 years (3 years after planting) BBCH not specified Spraying with sprayer |
| Limes | Citrus aurantifolia | SEU Outdoor EL Annual & Perennial weeds | SL 360.0 g/L Soil treatment – general (see also comment field) | 1 2 | 0.70 | 3.60 kg a.i./ha | 7 | 1 application for Perennial weeds and 2 applications for annual weeds Uniform application of weed leaves with 200–400 L water/ha |
| Mandarins | Citrus reticulata, syn: Citrus deliciosa | SEU Outdoor HR Perennial weeds | SL 360.0 g/L Soil treatment – general (see also comment field) | n.a. | n.a. | 1 2 | 1.44 | 3.60 kg a.i./ha | 7 | In orchards older than 2 years (3 years after planting) BBCH not specified Spraying with sprayer |
| Almonds | Amygdalus communis, syn: Prunus dulcis | SEU Outdoor PT | SL 360.0 g/L Soil treatment – spraying | 1 | 0.54 | 4.32 | 7 | Isopropylammonium salt |

www.efsa.europa.eu/efsajournal

EFSA Journal 2019;17(10):5862
### Critical outdoor GAPs for Southern Europe

| Crop | Scientific name | Region | Outdoor/Indoor | Pest controlled | Formulation | Application | PHI or waiting period (days) | Comments (max. 250 characters) |
|------|----------------|--------|----------------|-----------------|-------------|-------------|-----------------------------|--------------------------------|
| Brazil nuts | *Bertholletia excelsa* | SEU | Outdoor | ES | Soil treatment – spraying | 0 99 1 1 | 3.60 kg a.i./ha | 7 |
| Cashew nuts | *Anacardium occidentale* | SEU | Outdoor | ES | Soil treatment – spraying | 0 99 1 1 | 3.60 kg a.i./ha | 7 |
| Chestnuts | *Castanea crenata; Castanea dentata; Castanea mollissima; Castanea sativa* | SEU | Outdoor | PT | Soil treatment – spraying | 1 | 0.72 kg a.i./ha | 7 |
| Coconuts | *Cocos nucifera* | SEU | Outdoor | ES | Soil treatment – spraying | 0 99 1 1 | 3.60 kg a.i./ha | 7 |
| Hazelnuts | *Corylus avellana* | SEU | Outdoor | PT | Soil treatment – spraying | 1 | 0.54 kg a.i./ha | 7 |
| Macadamias | *Macadamia ternifolia, syn: Macadamia integrifolia; Macadamia tetraphylla* | SEU | Outdoor | ES | Soil treatment – spraying | 0 99 1 1 | 3.60 kg a.i./ha | 7 |
| Pecans | *Carya illinoinsis* | SEU | Outdoor | ES | Soil treatment – spraying | 0 99 1 1 | 3.60 kg a.i./ha | 7 |
| Pine nut kernels | *Pinus pinea* | SEU | Outdoor | ES | Soil treatment – spraying | 0 99 1 1 | 3.60 kg a.i./ha | 7 |
| Pistachios | *Pistacia vera* | SEU | Outdoor | ES | Soil treatment – spraying | 0 99 1 1 | 3.60 kg a.i./ha | 7 |
| Walnuts | *Juglans nigra; Juglans regia* | SEU | Outdoor | PT | Soil treatment – spraying | 1 | 0.54 kg a.i./ha | 7 |
## Critical outdoor GAPs for Southern Europe

### Conventional crops

| Crop | Common name | Scientific name | Region | Outdoor/Indoor | Member state or country | Pest controlled | Formulation Type | Content Conc. | Method | Growth stage From BBCH | Interval (days) | Rate Min. | Rate Max. | PHI or waiting period (days) | Comments (max. 250 characters) |
|------|-------------|-----------------|--------|----------------|-------------------------|-----------------|------------------|----------------|---------|-------------------------|----------------|----------|----------|-----------------------------|--------------------------------|
| Apples | Malus domestica | SEU Outdoor IT | Annual and perennial broadleaved weeds and annual and perennial grasses | SG 680.0 g/kg | Soil treatment – general (see also comment field) | n.a. | n.a. | 1 | 3 | 0.54 | 4.28 kg a.i./ha | 7 | Do not spray the trunk, particularly if not hardened. Applications between plants with hydraulic sprayers, rotary atomisers or knapsacks. Max dose/ rate per year: 4.28 kg/ha a.i. |
| Pears | Pyrus communis | SEU Outdoor IT | Annual and perennial weeds | SL 360.0 g/L | Soil treatment – general (see also comment field) | 1 | 3 | 0.36 | 4.32 kg a.i./ha | 7 | Pre-planting: overall spraying Post-planting: overall spraying over weeds under trees and shielded spraying for selective treatments |
| Quinces | Cydonia oblonga | SEU Outdoor EL | Annual weeds (broad-leaved and grasses) perennial weeds | SL 360.0 g/L | Soil treatment – general (see also comment field) | 1 | 2 | 0.54 | 3.60 kg a.i./ha | 7 |
| Medlars | Mespilus germanica | SEU Outdoor EL | Annual weeds (broad-leaved and grasses) perennial weeds | SL 360.0 g/L | Soil treatment – general (see also comment field) | 1 | 2 | 0.54 | 3.60 kg a.i./ha | 7 |
| Loquats | Eriobotrya japonica | SEU Outdoor EL | Annual weeds (broad-leaved and grasses) perennial weeds | SL 360.0 g/L | Soil treatment – general (see also comment field) | 1 | 2 | 0.54 | 3.60 kg a.i./ha | 7 |
### Critical outdoor GAPs for Southern Europe

#### Conventional crops

| Common name | Scientific name | Region | Outdoor/Indoor | Pest controlled | Formulation | Application | PHI or waiting period (days) | Comments (max. 250 characters) |
|-------------|-----------------|--------|----------------|-----------------|-------------|-------------|------------------------------|---------------------------------|
| Apricots    | Armeniaca vulgaris, syn: Prunus armeniaca | SEU     | Outdoor        | Perennial weeds | SL          | 360.0 g/L   | n.a.                         | In orchards older than 2 years (3 years after planting) BBCH not specified. Spraying with sprayer. |
| Cherries    | Cerasus avium, syn: Prunus avium | SEU     | Outdoor        | Annual and perennials weeds | SL          | 360.0 g/L   | 1 3 | 0.36 | kg a.i./ha | 7 | Pre-planting: overall spraying. Post-planting: overall spraying over weeds under trees and shielded spraying for selective treatments. |
| Peaches     | Persica vulgaris, syn: Prunus persica | SEU     | Outdoor        | Annual and perennial broadleafed weeds and annual and perennial grasses | SG          | 680.0 g/kg  | n.a.                         | Do not spray the trunk, particularly if not hardened. Stone fruit can show signs of phytotoxicity if the trunk is sprayed. Applications between plants with hydraulic sprayers, rotary atomisers or knapsacks. Max dose/rate per year: 4.28 kg/ha a.i. |
| Plums       | Prunus domestica | SEU     | Outdoor        | Annual and perennial broadleafed weeds and annual and perennial grasses | SG          | 680.0 g/kg  | n.a.                         | Do not spray the trunk, particularly if not hardened. Stone fruit can show signs of phytotoxicity if the trunk is sprayed. Applications between plants with hydraulic sprayers, rotary atomisers or knapsacks. Max dose/ rate per year: 4.28 kg/ha a.i. |
### Critical outdoor GAPs for Southern Europe

#### Conventional crops

| Crop | Scientific name | Region | Outdoor/Indoor | Member state or country | Pest controlled | Formulation | Application Method | Growth stage From BBCH Until BBCH | Number | Interval (days) | Rate | PHI or waiting period (days) | Comments (max. 250 characters) |
|------|-----------------|--------|----------------|------------------------|-----------------|--------------|------------------|-----------------------------------|--------|----------------|------|-----------------------------|--------------------------------|
| Table grapes | Vitis vinifera | SEU | Outdoor | IT | Annual and perennial broadleaved weeds and annual and perennial grasses | SG 680.0 g/kg | Soil treatment – general (see also comment field) | n.a. | 3 | 1 | 0.54 | 4.28 kg a.i./ha | Do not spray the trunk, particularly if not hardened. Applications between plants with hydraulic sprayers, rotary atomisers or knapsacks. Max dose/rate per year: 4.28 kg/ha a.i. |
| Wine grapes | Vitis vinifera | SEU | Outdoor | IT | Annual and perennial broadleaved weeds and annual and perennial grasses | SG 680.0 g/kg | Soil treatment – general (see also comment field) | n.a. | 3 | 1 | 0.54 | 4.28 kg a.i./ha | Do not spray the trunk, particularly if not hardened. Applications between plants with hydraulic sprayers, rotary atomisers or knapsacks. Max dose/rate per year: 4.28 kg/ha a.i. |
| Strawberries | Fragaria × ananassa | SEU | Outdoor | FR | Soil treatment – general (see also comment field) | | | 1 | 2.52 | 30 | | |
| Blackberries | Rubus sect. Rubus | SEU | Outdoor | FR | Soil treatment – general (see also comment field) | | | 1 | 2.20 | 21 | One application per year max. Dose is expressed as ground area (as opposed to 'treated area'). |
| Dewberries | Rubus caesius | SEU | Outdoor | FR | Soil treatment – general (see also comment field) | | | 1 | 2.20 | 21 | One application per year max. Dose is expressed as ground area (as opposed to 'treated area'). |
Critical outdoor GAPs for Southern Europe

## Conventional crops

| Crop | Scientific name | Region | Pest controlled | Formulation | Application | PHI or waiting period (days) | Comments (max. 250 characters) |
|------|-----------------|--------|-----------------|-------------|-------------|----------------------------|--------------------------------|
| Raspberries | *Rubus idaeus* | SEU | Outdoor | FR | Soil treatment – general (see also comment field) | 1 | 2.20 kg a.i./ha | One application per year max. Dose is expressed as ground area (as opposed to 'treated area') |
| Blueberries | *Vaccinium angustifolium*; *Vaccinium corymbosum*; *Vaccinium formosum*; *Vaccinium virgatum* | SEU | Outdoor | FR | Soil treatment – general (see also comment field) | 1 | 2.20 kg a.i./ha | One application per year max. Dose is expressed as ground area (as opposed to 'treated area') |
| Cranberries | *Vaccinium macrocarpon* | SEU | Outdoor | FR | Soil treatment – general (see also comment field) | 1 | 2.20 kg a.i./ha | One application per year max. Dose is expressed as ground area (as opposed to 'treated area') |
| Currants | *Ribes nigrum*; *Ribes rubrum* | SEU | Outdoor | EL | Soil treatment – general (see also comment field) | n.a. n.a. | 2 | 2,160.00 g a.i./ha | One application per year max. Dose is expressed as ground area (as opposed to 'treated area') |
| Gooseberries | *Ribes uva-crispa* | SEU | Outdoor | FR | Soil treatment – general (see also comment field) | 1 | 2.20 kg a.i./ha | One application per year max. Dose is expressed as ground area (as opposed to 'treated area') |
| Rose hips | *Rosa canina*; *Rosa majalis*; *Rosa rugosa* | SEU | Outdoor | FR | Soil treatment – general (see also comment field) | 1 | 2.20 kg a.i./ha | One application per year max. Dose is expressed as ground area (as opposed to 'treated area') |
| Mulberries | *Morus alba*; *Morus nigra* | SEU | Outdoor | FR | Soil treatment – general (see also comment field) | 1 | 2.20 kg a.i./ha | One application per year max. Dose is expressed as ground area (as opposed to 'treated area') |
## Critical outdoor GAPs for Southern Europe

### Conventional crops

| Crop | Common name | Scientific name | Region | Formulation Type | Content | Pest controlled | Method | Growth stage | Application | PHI or waiting period (days) | Comments (max. 250 characters) |
|------|-------------|-----------------|--------|------------------|---------|-----------------|--------|--------------|-------------|-----------------------------|----------------------------------|
| Azaroles | Crataegus azarolus | SEU Outdoor FR | Soil treatment – general (see also comment field) | 1 | 2.20 kg a.i./ha | 21 | To be harvested only from the tree |
| Elderberries | Sambucus nigra | SEU Outdoor FR | Soil treatment – general (see also comment field) | 1 | 2.20 kg a.i./ha | 21 | One application per year max. Dose is expressed as ground area (as opposed to 'treated area') |
| Figs | Ficus carica | SEU Outdoor FR | Soil treatment – general (see also comment field) | 1 | 2.20 kg a.i./ha | 21 | One application per year max. Dose is expressed as ground area (as opposed to 'treated area') |
| Table olives | Olea europaea | SEU Outdoor EL | Perennial weeds SL 36.0 % (v/v) | Soil treatment – spraying | 1 | 1.80 | 2.70 kg a.i./ha | 7 | |
| Kumquats | Fortunella japonica; Fortunella margarita | SEU Outdoor ES | Weeds | Soil treatment – general (see also comment field) | 1 | 2 | 1.90 kg a.i./ha | 7 | |
| Kaki | Diospyros kaki | SEU Outdoor ES | Weeds | Soil treatment – general (see also comment field) | 1 | 2 | 1.90 kg a.i./ha | 7 | |
| Kiwi fruits | Actinidia deliciosa; Actinidia chinensis | SEU Outdoor ES | Weeds | Soil treatment – general (see also comment field) | 1 | 2 | 1.90 kg a.i./ha | 7 | |
| Litchis | Litchi chinensis | SEU Outdoor ES | Weeds | Soil treatment – general (see also comment field) | 1 | 2 | 1.90 kg a.i./ha | 7 | |
| Passionfruits | Passiflora edulis, syn. Passiflora laurifolia | SEU Outdoor ES | Weeds | Soil treatment – general (see also comment field) | 1 | 2 | 1.90 kg a.i./ha | 7 | |
## Critical outdoor GAPs for Southern Europe

### Conventional crops

| Crop | Scientific name | Region | Formulation Type | Content | Method | Growth stage From BBCH Until BBCH | Number | Interval (days) Min. Max. | Rate | PHI or waiting period (days) | Comments (max. 250 characters) |
|------|-----------------|--------|------------------|---------|--------|-------------------------------|--------|--------------------------|------|--------------------------|-------------------------------|
| Avocados | *Persea americana* | SEU | Outdoor | ES | Weed | Soil treatment – general (see also comment field) | 1 2 | 1 2 | 1.90 kg a.i./ha | 7 | Application directed to soil |
| Bananas | *Musa acuminate*; *Musa balbisiana*; *Musa acuminate × Musa balbisiana* | SEU | Outdoor | ES | Soil treatment – spraying | 0 99 | 1 2 | 3.60 kg a.i./ha | 1 | |
| Mangoes | *Mangifera indica* | SEU | Outdoor | ES | Weed | Soil treatment – general (see also comment field) | 1 2 | 1 2 | 1.90 kg a.i./ha | 7 | |
| Papayas | *Carica papaya* | SEU | Outdoor | ES | Weed | Soil treatment – general (see also comment field) | 1 2 | 1 2 | 1.90 kg a.i./ha | 7 | |
| Granate apples | *Punica granatum* | SEU | Outdoor | ES | Weed | Soil treatment – general (see also comment field) | 1 2 | 1 2 | 1.90 kg a.i./ha | 7 | |
| Cherimoyas | *Annona cherimola* | SEU | Outdoor | ES | Weed | Soil treatment – general (see also comment field) | 1 2 | 1 2 | 1.90 kg a.i./ha | 7 | |
| Potatoes | *Solanum tuberosum* subsp. *tuberosum* | SEU | Outdoor | IT | Weeds | SL 360.0 g/L Local treatment – dabbing or rubbing | 1 2 | 60 | 0.72 | 4.30 kg a.i./ha | 21 | 1 application per year (in-between crop production periods) |
| Cassava roots | *Manihot esculenta* | SEU | Outdoor | FR | Weed | Soil treatment – general (see also comment field) | 1 | 2 | 2.52 kg a.i./ha | 30 | |
| Sweet potatoes | *Ipomoea batatas* | SEU | Outdoor | IT | Annual and perennials | SL 0.0 g/L Soil treatment – general (see also comment field) | 9 1 1 | 0.36 | 4.32 kg a.i./ha | n.a. | Post-planting (within 3 days) – Pre-emergence |
| Yams | *Dioscorea spp.* | SEU | Outdoor | FR | Soil treatment – general (see also comment field) | 1 | | 2.52 kg a.i./ha | 30 | 1 application per year (in-between crop production periods) |
### Critical outdoor GAPs for Southern Europe

#### Conventional crops

| Common name | Scientific name | Region | Outdoor/Indoor | Member state or country | Pest controlled | Formulation | Application | PHI or waiting period (days) | Comments (max. 250 characters) |
|-------------|-----------------|--------|----------------|--------------------------|-----------------|-------------|-------------|-----------------------------|--------------------------------|
| Arrowroots | Maranta arundinacea | SEU | Outdoor | FR | Soil treatment – general (see also comment field) | 1 | 2.52 kg a.i./ha | 30 | 1 application per year (in-between crop production periods) |
| Beetroots | Beta vulgaris var. vulgaris | SEU | Outdoor | IT | Weeds SC | 360.0 g/L | Soil treatment – general (see also comment field) | 0 | 1 | 0.72 | 4.32 kg a.i./ha | n.a. | soil with emerged weeds, but before seeding, transplanting or after harvest at the end of the crop cultivation |
| Carrots | Daucus carota subsp. sativus | SEU | Outdoor | IT | Weeds SL | 360.0 g/L | Local treatment – dabbing or rubbing | 1 | 2 | 60 | 0.72 | 4.30 kg a.i./ha | 21 | soil with emerged weeds, but before seeding, transplanting or after harvest at the end of the crop cultivation |
| Celeriacs | Apium graveolens var. rapaceum | SEU | Outdoor | IT | Weeds SC | 360.0 g/L | Soil treatment – general (see also comment field) | 0 | 1 | 0.72 | 4.32 kg a.i./ha | n.a. | soil with emerged weeds, but before seeding, transplanting or after harvest at the end of the crop cultivation |
| Horseradishes | Armoracia rusticana | SEU | Outdoor | IT | Weeds SC | 360.0 g/L | Soil treatment – general (see also comment field) | 0 | 1 | 0.72 | 4.32 kg a.i./ha | n.a. | soil with emerged weeds, but before seeding, transplanting or after harvest at the end of the crop cultivation |
| Jerusalem artichokes | Helianthus tuberosus | SEU | Outdoor | FR | Soil treatment – general (see also comment field) | 1 | 2.52 kg a.i./ha | 30 | 1 application per year (in-between crop production periods) |
| Parsnips | Pastinaca sativa | SEU | Outdoor | FR | Soil treatment – general (see also comment field) | 1 | 2.52 kg a.i./ha | 30 | 1 application per year (in-between crop production periods) |
### Critical outdoor GAPs for Southern Europe

#### Conventional crops

| Common name       | Scientific name                  | Region | Outdoor | Member state or country | Pest controlled Formulation Application | Conventional crops |
|-------------------|----------------------------------|--------|---------|-------------------------|-----------------------------------------|--------------------|
| **Parsley roots** | *Petroselinum crispum* convar. radicosum | SEU    | Outdoor | FR                      | Soil treatment — general (see also comment field) |                      |
| **Radishes**      | *Raphanus sativus* Radish Group   | SEU    | Outdoor | FR                      | Soil treatment — general (see also comment field) |                      |
| **Salsifies**     | *Tragopogon porrifolius*         | SEU    | Outdoor | IT                      | Weeds SC 360.0 g/L Soil treatment — general (see also comment field) |                      |
| **Swedes**        | *Brassica napus* subsp. napobrassica | SEU    | Outdoor | IT                      | Annual and perennial broadleaved weeds and annual and perennial grasses SL 450.0 g/L Soil treatment — general (see also comment field) |                      |
| **Turnips**       | *Brassica rapa* subsp. rapa       | SEU    | Outdoor | IT                      | Weeds SC 360.0 g/L Soil treatment — general (see also comment field) |                      |
| **Garlic**        | *Allium sativum*                  | SEU    | Outdoor | IT                      | Weeds SC 480.0 g/L Soil treatment — spraying |                      |
| **Onions**        | *Allium cepa* Common Onion Group  | SEU    | Outdoor | IT                      | Weeds SC 480.0 g/L Soil treatment — spraying |                      |
## Critical outdoor GAPs for Southern Europe

### Conventional crops

| Crop | Common name | Scientific name | Region | Outdoor/Indoor | Member state or country | Pest controlled | Formulation | Application | PHI or waiting period (days) | Comments (max. 250 characters) |
|------|-------------|----------------|--------|----------------|--------------------------|-----------------|--------------|-------------|-----------------------------|-----------------------------|
| Shallots | Allium cepa | Allium cepa, syn. Allium aflatonicum | SEU | Outdoor | IT | Weeds | SC 480.0 g/L | Soil treatment – spraying | 9 | 1 | 0.72 | 4.32 kg a.i./ha | n.a. | soil with emerged weeds, but before crop emergence |
| Spring onions | Allium cepa | Common Onion Group; Allium fistulosum | SEU | Outdoor | FR | | | Soil treatment – general (see also comment field) | 1 | | | 2.52 kg a.i./ha | 30 | 1 application per year (in-between crop production periods) |
| Tomatoes | Lycopersicon esculentum | | SEU | Outdoor | IT | Weeds | SL 360.0 g/L | Local treatment – dabbing or rubbing | 1 | 2 | 60 | 0.72 | 4.30 kg a.i./ha | 21 | |
| Sweet peppers | Capsicum annuum | | SEU | Outdoor | FR | | | Soil treatment – general (see also comment field) | 1 | | | 2.52 kg a.i./ha | 30 | 1 application per year (in-between crop production periods) |
| Aubergines | Solanum melongena | | SEU | Outdoor | IT | Weeds | SL 360.0 g/L | Local treatment – dabbing or rubbing | 1 | 2 | 60 | 0.72 | 4.30 kg a.i./ha | 21 | |
| Okra | Abelmoschus esculentus | | SEU | Outdoor | FR | | | Soil treatment – general (see also comment field) | 1 | | | 2.52 kg a.i./ha | 30 | 1 application per year (in-between crop production periods) |
| Cucumbers | Cucumis sativus | | SEU | Outdoor | FR | | | Soil treatment – general (see also comment field) | 1 | | | 2.52 kg a.i./ha | 30 | 1 application per year (in-between crop production periods) |
| Gherkins | Cucumis sativus | | SEU | Outdoor | FR | | | Soil treatment – general (see also comment field) | 1 | | | 2.52 kg a.i./ha | 30 | 1 application per year (in-between crop production periods) |
| Courgettes | Cucurbita pepo Zucchini Group | | SEU | Outdoor | FR | | | Soil treatment – general (see also comment field) | 1 | | | 2.52 kg a.i./ha | 30 | 1 application per year (in-between crop production periods) |
## Critical outdoor GAPs for Southern Europe

### Conventional crops

| Common name | Scientific name | Region | Member state or country | Pest controlled | Formulation Type | Content Conc. Unit | Method | Growth stage From BBCH | Application Number | Interval (days) Min. | Max. | Rate Min. | Max. | PHI or waiting period (days) | Comments (max. 250 characters) |
|-------------|-----------------|--------|-------------------------|-----------------|------------------|--------------------|--------|-------------------------|-------------------|--------------------|------|-----------|------|-----------------------------|-----------------------------|
| Melons      | Cucumis melo    | SEU    | Outdoor FR              | Melons          | Soil treatment   | general (see also comment field) |        | 1                       |                   |                   |      |           |      | 2.52 kg a.i./ha            | 30 1 application per year (in-between crop production periods) |
| Pumpkins    | Cucurbita maxima| SEU    | Outdoor FR              | Pumpkins        | Soil treatment   | general (see also comment field) |        | 1                       |                   |                   |      |           |      | 2.52 kg a.i./ha            | 30 1 application per year (in-between crop production periods) |
| Watermelons | Citrullus vulgaris, syn: Citrullus lanatus | SEU | Outdoor FR              | Watermelons     | Soil treatment   | general (see also comment field) |        | 1                       |                   |                   |      |           |      | 2.52 kg a.i./ha            | 30 1 application per year (in-between crop production periods) |
| Sweet corn  | Zea mays convar. Saccharata | SEU | Outdoor FR | Sweet corn | Soil treatment   | general (see also comment field) |        | 1                       |                   |                   |      |           |      | 2.52 kg a.i./ha            | 30 1 application per year (in-between crop production periods) |
| Broccoli    | Brassica oleracea var. italica | SEU | Outdoor IT              | Broccoli        | Soil treatment   | general (see also comment field) |        | 1                       |                   |                   |      |           |      | 0.54 4.32 kg a.i./ha        | Fields for sowing or planting or after harvesting. Sowing and planting must be conducted at least 48 h following treatment. Max dose/rate per year: 4.32 kg/ha a.i. |
| Cauliflowers| Brassica oleracea var. botrytis | SEU | Outdoor IT              | Cauliflowers    | Soil treatment   | general (see also comment field) |        | 1                       |                   |                   |      |           |      | 0.54 4.32 kg a.i./ha        | Fields for sowing or planting or after harvesting. Sowing and planting must be conducted at least 48 h following treatment. Max dose/rate per year: 4.32 kg/ha a.i. |
### Critical outdoor GAPs for Southern Europe

#### Conventional crops

| Crop Common name | Scientific name | Region | Outdoor/Indoor | Member state or country | Pest controlled | Formulation Type | Content Conc. | Method | Growth stage From BBCH | Application Number | Interval (days) | Rate Min. | Max. | PHI or waiting period (days) | Comments (max. 250 characters) |
|------------------|-----------------|--------|----------------|-------------------------|-----------------|-----------------|--------------|--------|------------------------|-------------------|----------------|---------|-----|-----------------------------|-----------------------------|
| Brussels sprouts | Brassica oleracea var. gemmifera | SEU | Outdoor IT | | Annual and perennial broadleaved weeds and annual and perennial grasses | SL 450.0 g/L | | Soil treatment – general (see also comment field) | n.a. | 0 | 1 | 3 | 0.54 | 4.32 | kg a.i./ha | n.a. | Fields for sowing or planting or after harvesting. Sowing and planting must be conducted at least 48 h following treatment. Max dose/rate per year: 4.32 kg/ha a.i. |
| Head cabbages | Brassica oleracea var. capitata | SEU | Outdoor IT | | Annual and perennial broadleaved weeds and annual and perennial grasses | SL 450.0 g/L | | Soil treatment – general (see also comment field) | n.a. | 0 | 1 | 3 | 0.54 | 4.32 | kg a.i./ha | n.a. | Fields for sowing or planting or after harvesting. Sowing and planting must be conducted at least 48 h following treatment. Max dose/rate per year: 4.32 kg/ha a.i. |
| Chinese cabbages | Brassica rapa subs. pekinensis | SEU | Outdoor FR | | | | | | | | | | | 30 kg a.i./ha | 1 application per year (in-between crop production periods) |
| Kales | Brassica oleracea var. sabellica; Brassica oleracea var. viridis | SEU | Outdoor FR | | | | | | | | | | | 30 kg a.i./ha | 1 application per year (in-between crop production periods) |
| Kohlrabies | Brassica oleracea var. gongylodes | SEU | Outdoor IT | | Weeds | SL 360.0 g/L | | Soil treatment – general (see also comment field) | 0 | 1 | 2 | 60 | 0.72 | 4.30 | kg a.i./ha | n.a. | Treatments before or after cultivation |
## Critical outdoor GAPs for Southern Europe

### Conventional crops

| Crop | Scientific name | Region | Outdoor/Indoor | Member state or country | Pest controlled | Formulation | Application | PHI or waiting period (days) | Comments (max. 250 characters) |
|------|-----------------|--------|----------------|-------------------------|-----------------|--------------|-------------|-----------------------------|--------------------------------|
| Lamb’s lettuces | Valerianella locusta | SEU | Outdoor | IT | Annual and perennial broadleaved weeds and annual and perennial grasses | SL 450.0 g/L | Soil treatment – general (see also comment field) | n.a. | 0 | 1 | 3 | 0.54 | 4.32 kg a.i./ha | n.a. | Fields for sowing or planting or after harvesting. Sowing and planting must be conducted at least 48 h following treatment. Max dose/rate per year: 4.32 kg/ha a.i. |
| Lettuces | Lactuca sativa | SEU | Outdoor | FR | Soil treatment – general (see also comment field) | 1 | 2.52 kg a.i./ha | 30 | 1 application per year (in-between crop production periods) |
| Escaroles | Cichorium endivia var. latibila | SEU | Outdoor | FR | Soil treatment – general (see also comment field) | 1 | 2.52 kg a.i./ha | 30 | 1 application per year (in-between crop production periods) |
| Cresses | Lepidium sativum subsp. sativum | SEU | Outdoor | FR | Soil treatment – general (see also comment field) | 1 | 2.52 kg a.i./ha | 30 | 1 application per year (in-between crop production periods) |
| Land cresses | Barbarea verna | SEU | Outdoor | FR | Soil treatment – general (see also comment field) | 1 | 2.52 kg a.i./ha | 30 | 1 application per year (in-between crop production periods) |
| Roman rocket | Eruca sativa | SEU | Outdoor | FR | Soil treatment – general (see also comment field) | 1 | 2.52 kg a.i./ha | 30 | 1 application per year (in-between crop production periods) |
| Red mustards | Brassica juncea var. rugosa | SEU | Outdoor | FR | Soil treatment – general (see also comment field) | 1 | 2.52 kg a.i./ha | 30 | 1 application per year (in-between crop production periods) |
### Critical outdoor GAPs for Southern Europe

| Crop | Common name | Scientific name | Region | Outdoor/Indoor | Member state or country | Pest controlled Formulation Application | PHI or waiting period (days) |
|------|-------------|-----------------|--------|----------------|-------------------------|------------------------------------------|-----------------------------|
|      | Baby leaf crops | Not specified | SEU | Outdoor FR | Soil treatment – general (see also comment field) | 2.52 kg a.i./ha | 30 |
|      | Spinaches | Spinacia oleracea | SEU | Outdoor IT Weeds SL 360.0 g/L | Soil treatment – general (see also comment field) | 0 1 1 0.72 kg a.i./ha | n.a. |
|      | Purslanes | Portulaca oleracea | SEU | Outdoor FR | Soil treatment – general (see also comment field) | 2.52 kg a.i./ha | 30 |
|      | Chards | Beta vulgaris var. flavescens | SEU | Outdoor FR | Soil treatment – general (see also comment field) | 2.52 kg a.i./ha | 30 |
|      | Grape leaves | Vitis vinifera | SEU | Outdoor ES | Soil treatment – spraying | 3.60 kg a.i./ha | n.a. |
|      | Watercresses | Nasturtium officinale | SEU | Outdoor IT Weeds SL 360.0 g/L | Soil treatment – general (see also comment field) | 0 0 1 2 60 0.72 kg a.i./ha | n.a. |
|      | Witloofs | Cichorium intybus Foliosum group | SEU | Outdoor IT Weeds SL 360.0 g/L | Soil treatment – general (see also comment field) | 0 1 2 60 0.72 kg a.i./ha | n.a. |
## Critical outdoor GAPs for Southern Europe

### Conventional crops

| Crop | Common name | Scientific name | Region | Formulation | Application | PHI or waiting period (days) |
|------|-------------|-----------------|--------|-------------|-------------|-----------------------------|
|      |             |                 |        | Type | Content | Method | Growth stage | Number | Interval (days) | Rate | Comments (max. 250 characters) |
| Chervil | Anthriscus cerefolium | SEU | Outdoor | FR | Soil treatment – general (see also comment field) | 1 | 30 | 2.52 kg a.i./ha | 1 application per year (in-between crop production periods) |
| Chives | Allium schoenoprasm | SEU | Outdoor | FR | Soil treatment – general (see also comment field) | 1 | 30 | 2.52 kg a.i./ha | 1 application per year (in-between crop production periods) |
| Celery leaves | Apium graveolens var. secalinum | SEU | Outdoor | FR | Soil treatment – general (see also comment field) | 1 | 30 | 2.52 kg a.i./ha | 1 application per year (in-between crop production periods) |
| Parsley | Petroselinum crispum | SEU | Outdoor | FR | Soil treatment – general (see also comment field) | 1 | 30 | 2.52 kg a.i./ha | 1 application per year (in-between crop production periods) |
| Sage | Salvia officinalis | SEU | Outdoor | FR | Soil treatment – general (see also comment field) | 1 | 30 | 2.52 kg a.i./ha | 1 application per year (in-between crop production periods) |
| Rosemary | Rosmarinus officinalis | SEU | Outdoor | FR | Soil treatment – general (see also comment field) | 1 | 30 | 2.52 kg a.i./ha | 1 application per year (in-between crop production periods) |
| Thyme | Thymus vulgaris | SEU | Outdoor | FR | Soil treatment – general (see also comment field) | 1 | 30 | 2.52 kg a.i./ha | 1 application per year (in-between crop production periods) |
| Basil | Ocimum basilicum | SEU | Outdoor | FR | Soil treatment – general (see also comment field) | 1 | 30 | 2.52 kg a.i./ha | 1 application per year (in-between crop production periods) |
| Laurel | Laurus nobilis | SEU | Outdoor | FR | Soil treatment – general (see also comment field) | 1 | 30 | 2.52 kg a.i./ha | 1 application per year (in-between crop production periods) |
## Critical outdoor GAPs for Southern Europe

### Conventional crops

| Common name | Scientific name | Region | Pest controlled | Formulation | Application | PHI or waiting period (days) | Comments (max. 250 characters) |
|-------------|----------------|--------|-----------------|-------------|-------------|------------------------------|----------------------------------|
| Tarragon    | Artemisia dracunculus | SEU Outdoor FR | Soil treatment – general (see also comment field) | 1 | 2.52 kg a.i./ha | 30 | 1 application per year (in-between crop production periods) |
| Beans (with pods) | Phaseolus vulgaris | SEU Outdoor IT Weeds SL | 360.0 g/L Local treatment – dabbing or rubbing | 1 2 | 60 | 0.72 | 4.30 kg a.i./ha | 21 Broad bean (Vicia faba). Not present in the available choices |
| Beans (without pods) | Phaseolus vulgaris | SEU Outdoor IT Weeds SL | 360.0 g/L Local treatment – dabbing or rubbing | 1 2 | 60 | 0.72 | 4.30 kg a.i./ha | 21 Broad bean (Vicia faba). Not present in the available choices |
| Peas (with pods) | Pisum sativum | SEU Outdoor IT Weeds SL | 360.0 g/L Local treatment – dabbing or rubbing | 1 2 | 60 | 0.72 | 4.30 kg a.i./ha | 21 |
| Peas (without pods) | Pisum sativum | SEU Outdoor IT Weeds SL | 360.0 g/L Local treatment – dabbing or rubbing | 1 2 | 60 | 0.72 | 4.30 kg a.i./ha | 21 Broad bean (Vicia faba). Not present in the available choices |
| Lentil (fresh) | Lens culinaris syn: Lens esculenta | SEU Outdoor IT Weeds SL | 360.0 g/L Local treatment – dabbing or rubbing | 1 2 | 60 | 0.72 | 4.30 kg a.i./ha | 21 Broad bean (Vicia faba). Not present in the available choices |
| Asparagus | Asparagus officinalis | SEU Outdoor FR | Soil treatment – general (see also comment field) | 1 | 2.52 kg a.i./ha | 30 | 1 application per year (in-between crop production periods) |
| Cardoons | Cynara cardunculus Cardoon group | SEU Outdoor FR | Soil treatment – general (see also comment field) | 1 | 2.52 kg a.i./ha | 30 | 1 application per year (in-between crop production periods) |
| Celeries | Apium graveolens var. dulce | SEU Outdoor FR | Soil treatment – general (see also comment field) | 1 | 2.52 kg a.i./ha | 30 | 1 application per year (in-between crop production periods) |
## Critical outdoor GAPs for Southern Europe

### Conventional crops

| Crop | Scientific name | Region | Member state or country | Pest controlled | Formulation Type | Method | Growth stage From BBCH Until BBCH | Number Min. Max. | Interval (days) Min. Max. | Rate Min. Max. | PHI or waiting period (days) | Comments (max. 250 characters) |
|------|----------------|--------|-------------------------|-----------------|------------------|--------|--------------------------------|----------------|-----------------|----------------|-------------------------------|--------------------------------|
| **Florence fennels** | Foeniculum vulgare var. azoricum | SEU | Outdoor FR | Soil treatment – general (see also comment field) | 1 | 30 | 2.52 kg a.i./ha | 30 | 1 application per year (in-between crop production periods) |
| **Globe artichokes** | Cynara cardunculus Globe artichoke group | SEU | Outdoor IT | Weeds SL 360.0 g/L | Local treatment – dabbing or rubbing | 1 | 2 | 60 | 0.72 | 4.30 kg a.i./ha | 21 | |
| **Leeks** | Allium ampeloprasum ampeloprasum Leek Group, syn: Allium porrum | SEU | Outdoor FR | Soil treatment – general (see also comment field) | 1 | | 2.52 kg a.i./ha | 30 | 1 application per year (in-between crop production periods) |
| **Rhubarbs** | Rheum rhabarbarum | SEU | Outdoor FR | Soil treatment – general (see also comment field) | 1 | | 2.52 kg a.i./ha | 30 | 1 application per year (in-between crop production periods) |
| **Bamboo shoots** | Bambusa vulgaris; Phyllostachys edulis | SEU | Outdoor FR | Soil treatment – general (see also comment field) | 1 | | 2.52 kg a.i./ha | 30 | 1 application per year (in-between crop production periods) |
| **Palm hearts** | Bactris gasipaes; Cocos nucifera; Daemonorops jenkinsiana; Euterpe edulis; Euterpe oleracea | SEU | Outdoor FR | Soil treatment – general (see also comment field) | 1 | | 2.52 kg a.i./ha | 30 | 1 application per year (in-between crop production periods) |
| **Cultivated fungi** | Not specified | SEU | Outdoor ES | Soil treatment – spraying | 0 | 0 | 0 | 3.60 kg a.i./ha | n.a. |
| **Wild fungi** | Not specified | SEU | Outdoor ES | Soil treatment – spraying | 0 | 0 | 0 | 3.60 kg a.i./ha | n.a. |
### Critical outdoor GAPs for Southern Europe

#### Conventional crops

| Crop | Common name | Scientific name | Region | Outdoor/Indoor | Member state or country | Pest controlled | Formulation | Application | Growth stage | Number | Interval (days) | Rate | PHI or waiting period (days) | Comments (max. 250 characters) |
|------|-------------|----------------|--------|----------------|------------------------|-----------------|--------------|-------------|--------------|---------|----------------|------|-----------------------------|-------------------------------|
| Beans (dry) | Phaseolus vulgaris | SEU Outdoor HR Perennial weeds | SL 360.0 g/L Foliar treatment — general (see also comment field) | n.a. | n.a. | 1 | 1.44 | 1.44 kg a.i./ha | 7 | Field bean Beans (MRL code number 0300010 SANCO 600/2010) Preharvest BBCH not specified Spraying with sprayer |
| Lentils (dry) | Lens culinaris, syn. Lens esculenta | SEU Outdoor IT Annual and perennial broadleaved weeds and annual and perennial grasses | SL 450.0 g/L Soil treatment — spraying | 0 | 0 | 1 | 3 | 0.54 | 4.32 kg a.i./ha | n.a. | Fields for sowing or planting or after harvesting. Sowing and planting must be conducted at least 48 h following treatment. Max dose/rate per year: 4.32 kg/ha a.i. |
| Peas (dry) | Pisum sativum | SEU Outdoor HR Perennial weeds | SL 360.0 g/L Foliar treatment — general (see also comment field) | n.a. | n.a. | 1 | 1.44 | 1.44 kg a.i./ha | 7 | Combining peas is the crop Peas (MRL code number 0300030 SANCO 600/2010) Preharvest BBCH not specified Spraying with sprayer |
| Lupins (dry) | Lupinus albus subsp. albus; Lupinus angustifolius; Lupinus luteus; Lupinus mutabilis | SEU Outdoor IT Annual and perennial broadleaved weeds and annual and perennial grasses | SL 450.0 g/L Soil treatment — spraying | 0 | 0 | 1 | 3 | 0.54 | 4.32 kg a.i./ha | n.a. | Fields for sowing or planting or after harvesting. Sowing and planting must be conducted at least 48 h following treatment. Max dose/rate per year: 4.32 kg/ha a.i. |
## Critical outdoor GAPs for Southern Europe

### Conventional crops

| Common name | Scientific name | Region | Outdoor/Indoor | Member state or country | Pest controlled | Pest formulation | Application | Growth stage | PHI or waiting period (days) | Comments (max. 250 characters) |
|-------------|----------------|--------|----------------|-------------------------|----------------|----------------|-------------|--------------|-----------------------------|-------------------------------|
| Linseeds    | Linum usitatissimum | SEU | Outdoor HR | Perennial weeds | SL 360.0 g/L | Foliar treatment – general (see also comment field) | n.a. | n.a. | 1 1.44 kg a.i./ha | 14 Preharvest BBCH not specified Spraying with sprayer |
| Peanuts     | Arachis hypogaea | SEU | Outdoor IT | Weeds | SC 360.0 g/L | Soil treatment – spraying | 0 0 | 1 | 0.72 4.32 kg a.i./ha | soil with emerged weeds, but before seeding, transplanting or after harvest at the end of the crop cultivation |
| Poppy seeds | Papaver somniferum subsp. somniferum | SEU | Outdoor IT | Annual and perennials weeds | SL 0.0 g/L | Soil treatment – general (see also comment field) | 0 9 | 1 1 | 0.36 4.32 kg a.i./ha | Post-planting (within 3 days) – Pre-emergence |
| Sesame seeds | Sesamum indicum | SEU | Outdoor IT | Weeds | SC 360.0 g/L | Soil treatment – spraying | 0 0 | 1 | 0.72 4.32 kg a.i./ha | soil with emerged weeds, but before seeding, transplanting or after harvest at the end of the crop cultivation |
| Sunflower seeds | Helianthus annuus | SEU | Outdoor HR | Desiccation | SL 360.0 g/L | Foliar treatment – general (see also comment field) | n.a. | n.a. | 1 0.72 1.80 kg a.i./ha | BBCH not specified Spraying with sprayer |
| Rapeseeds | Brassica napus subsp. napus | SEU | Outdoor HR | Perennial weeds | SL 360.0 g/L | Foliar treatment – general (see also comment field) | n.a. | n.a. | 1 1.44 1.44 kg a.i./ha | 14 Pre-harvest BBCH not specified Spraying with sprayer |
| Soyabeanes | Glycine max | SEU | Outdoor HR | Desiccation | SL 360.0 g/L | Foliar treatment – general (see also comment field) | n.a. | n.a. | 1 1.08 1.80 kg a.i./ha | BBCH not specified Spraying with sprayer |
| Mustard seeds | Brassica juncea; Brassica nigra; Sinapis alba | SEU | Outdoor HR | Perennial weeds | SL 360.0 g/L | Foliar treatment – general (see also comment field) | n.a. | n.a. | 1 1.44 1.44 kg a.i./ha | 8 Pre-harvest BBCH not specified Spraying with sprayer |
### Critical outdoor GAPs for Southern Europe

#### Conventional crops

| Crop | Common name | Scientific name | Region | Outdoor/ Indoor | Member state or country | Pest controlled | Pest | Formulation | Application | Growth stage | Number | Interval (days) | Rate | PHI or waiting period (days) | Comments (max. 250 characters) |
|------|-------------|-----------------|--------|-----------------|--------------------------|-----------------|------|--------------|-------------|--------------|--------|----------------|-------|--------------------------|-----------------------------|
| Cotton seeds | Gossypium barbadense; Gossypium herbaceum | SEU Outdoor EL Annual & Perennial weeds | SL 360.0 g/L | Foliar treatment – general (see also comment field) | 1 | 0.70 to 1.80 kg a.i./ha | 7 | This use exists also in the GAP of Glyphosate 540 SL Directed spraying |
| Pumpkin seeds | Cucurbita pepo Styrian Hulless Group | SEU Outdoor IT Weeds | SC 360.0 g/L | Soil treatment – spraying | 0 | 0 to 1 | 0.72 to 4.32 kg a.i./ha | n.a. | soil with emerged weeds, but before seeding, transplanting or after harvest at the end of the crop cultivation |
| Safflower seeds | Carthamus tinctorius | SEU Outdoor IT Weeds | SC 360.0 g/L | Soil treatment – spraying | 0 | 0 to 1 | 0.72 to 4.32 kg a.i./ha | n.a. | soil with emerged weeds, but before seeding, transplanting or after harvest at the end of the crop cultivation |
| Borage seeds | Borago officinalis | SEU Outdoor IT Weeds | SC 360.0 g/L | Soil treatment – spraying | 0 | 0 to 1 | 0.72 to 4.32 kg a.i./ha | n.a. | soil with emerged weeds, but before seeding, transplanting or after harvest at the end of the crop cultivation |
| Gold of pleasure seeds | Camelina sativa | SEU Outdoor IT Weeds | SC 360.0 g/L | Soil treatment – spraying | 0 | 0 to 1 | 0.72 to 4.32 kg a.i./ha | n.a. | soil with emerged weeds, but before seeding, transplanting or after harvest at the end of the crop cultivation |
| Hemp seeds | Cannabis sativa subsp. Sativa; Cannabis sativa subsp. spontanea | SEU Outdoor IT Weeds | SC 360.0 g/L | Soil treatment – spraying | 0 | 0 to 1 | 0.72 to 4.32 kg a.i./ha | n.a. | soil with emerged weeds, but before seeding, transplanting or after harvest at the end of the crop cultivation |
## Critical outdoor GAPs for Southern Europe

### Conventional crops

| Crop | Common name | Scientific name | Region | Pest controlled | Formulation Type | Content | Method | Growth stage | Application | PHI or waiting period (days) | Comments (max. 250 characters) |
|------|-------------|-----------------|--------|-----------------|------------------|---------|--------|--------------|-------------|---------------------------|-------------------------------|
| Castor beans | Ricinus communis | SEU | Outdoor IT | Weeds | SC 360.0 g/L | Soil treatment – spraying | 0 0 | 1 | 0.72 4.32 kg a.i./ha | n.a. soil with emerged weeds, but before seeding, transplanting or after harvest at the end of the crop cultivation |
| Olives for oil production | Olea europaea var. europaea | SEU | Outdoor HR | Convolvulus arvensis | SL 450.0 g/L | Soil treatment – general (see also comment field) | n.a. n.a. | 1 | 2.70 2.70 g a.i./ha | 7 Spraying with sprayer BBCH not specified in orchards older than 3 years |
| Oil palms kernels | Attalea maripa; Baeis guineensis; Baeis defera | SEU | Outdoor IT | SL 450.0 g/L | Soil treatment – spraying | 1 | 1.80 kg a.i./ha | 21 |
| Oil palms fruits | Attalea maripa; Baeis guineensis; Baeis defera | SEU | Outdoor IT | SL 450.0 g/L | Soil treatment – spraying | 1 | 1.80 kg a.i./ha | 21 |
| Kapok | Ceiba pentandra | SEU | Outdoor IT | SL 450.0 g/L | Soil treatment – spraying | 1 | 1.80 kg a.i./ha | 21 |
| Barley | Hordeum vulgare | SEU | Outdoor HR | Perennial broadleaf weeds | SL 360.0 g/L | Foliar treatment – general (see also comment field) | n.a. n.a. | 1 | 2.16 2.16 kg a.i./ha | 7 Spraying with sprayer BBCH not specified preharvest |
| Buckwheat | Fagopyrum esculentum | SEU | Outdoor ES | Foliar treatment – broadcast spraying | 1 | 2.16 kg a.i./ha | 7 Apply before harvesting to dry the crop |
| Maize | Zea mays | SEU | Outdoor ES | Foliar treatment – broadcast spraying | 1 | 2.16 kg a.i./ha | 7 Apply before harvesting to dry the crop |
## Critical outdoor GAPs for Southern Europe

### Conventional crops

| Common name           | Scientific name       | Region | Outdoor/Indoor | Member state or country | Pest controlled | Formulation Type | Content Conc. Unit | Method | Growth stage From BBCH | Growth stage Until BBCH | Number | Interval (days) | Rate | PHI or waiting period (days) | Comments (max. 250 characters) |
|-----------------------|-----------------------|--------|----------------|-------------------------|-----------------|------------------|-------------------|--------|-------------------------|-------------------------|--------|----------------|------|--------------------------|--------------------------------|
| Common millet         | Panicum miliaceum     | SEU    | Outdoor        | ES                      |                 | Foliar treatment | -                 | broadcast spraying | 1                   |                      | 2.16 kg a.i./ha         | 7                  |                | Apply before harvesting to dry the crop |
| Oat                   | Avena sativa          | SEU    | Outdoor        | ES                      |                 | Foliar treatment | -                 | broadcast spraying | 1                   |                      | 2.16 kg a.i./ha         | 7                  |                | Apply before harvesting to dry the crop |
| Rice                  | Oryza sativa          | SEU    | Outdoor        | ES                      |                 | Foliar treatment | -                 | broadcast spraying | 1                   |                      | 2.16 kg a.i./ha         | 7                  |                | Apply before harvesting to dry the crop |
| Rye                   | Secale cereale        | SEU    | Outdoor        | ES                      |                 | Foliar treatment | -                 | broadcast spraying | 1                   |                      | 2.16 kg a.i./ha         | 7                  |                | Apply before harvesting to dry the crop |
| Sorghum               | Sorghum bicolor       | SEU    | Outdoor        | ES                      |                 | Foliar treatment | -                 | broadcast spraying | 1                   |                      | 2.16 kg a.i./ha         | 7                  |                | Apply before harvesting to dry the crop |
| Wheat                 | Triticum aestivum     | SEU    | Outdoor        | ES                      |                 | Foliar treatment | -                 | broadcast spraying | 1                   |                      | 2.16 kg a.i./ha         | 7                  |                | Apply before harvesting to dry the crop |
| Teas                  | Camellia sinensis     | SEU    | Outdoor        | ES                      |                 | Soil treatment   | 0 0               | spraying          | 1                   |                      | 3.60 kg a.i./ha         | n.a.               |                | Treatments only in pre-sowing/pre-planting of crop |
| Coffee beans          | Coffea arabica; Coffea canephora, syn: Coffea robusta; Coffea liberica | SEU    | Outdoor        | ES                      |                 | Soil treatment   | 0 0               | spraying          | 1                   |                      | 3.60 kg a.i./ha         | n.a.               |                | Treatments only in pre-sowing/pre-planting of crop |
| Herbal infusions from flowers | Not specified | SEU    | Outdoor        | ES                      |                 | Soil treatment   | 0 0               | spraying          | 1                   |                      | 3.60 kg a.i./ha         | n.a.               |                | Treatments only in pre-sowing/pre-planting of crop |
| Herbal infusions from leaves and herbs | Not specified | SEU    | Outdoor        | ES                      |                 | Soil treatment   | 0 0               | spraying          | 1                   |                      | 3.60 kg a.i./ha         | n.a.               |                | Treatments only in pre-sowing/pre-planting of crop |
| Herbal infusions from roots | Not specified | SEU    | Outdoor        | ES                      |                 | Soil treatment   | 0 0               | spraying          | 1                   |                      | 3.60 kg a.i./ha         | n.a.               |                | Treatments only in pre-sowing/pre-planting of crop |
| Common name          | Scientific name                  | Region | Outdoor/Indoor | Member state or country | Pest controlled | Formulation | Content | Method     | Growth stage | Application     | PHI or waiting period (days) | Comments (max. 250 characters) |
|----------------------|----------------------------------|--------|----------------|-------------------------|-----------------|-------------|---------|------------|--------------|---------------------|-------------------------------|---------------------------------|
| Carobs               | Ceratonia siliqua                 | SEU    | Outdoor        | PT                      | Soil treatment  | SL 360.0  | g/L     | spraying   | 1            | 0.72               | 3.60 kg a.i./ha                | 28 isopropylammonium salt                  |
| Hops                 | Humulus lupulus                   | SEU    | Outdoor        | ES                      | Soil treatment  | 0 0 2     | kg a.i./ha | spraying   | 0            | 0                  | 3.60 kg a.i./ha                | n.a. Treatments only in pre-sowing/pre-planting of crop |
| Seed spices          | Not specified                     | SEU    | Outdoor        | ES                      | Soil treatment  | 0 0 2     | kg a.i./ha | spraying   | 0            | 0                  | 3.60 kg a.i./ha                | n.a. Treatments only in pre-sowing/pre-planting of crop |
| Fruit spices         | Not specified                     | SEU    | Outdoor        | ES                      | Soil treatment  | 0 0 1     | kg a.i./ha | spraying   | 0            | 0                  | 3.60 kg a.i./ha                | n.a. Treatments only in pre-sowing/pre-planting of crop |
| Bark spices          | Not specified                     | SEU    | Outdoor        | ES                      | Soil treatment  | 0 0 1     | kg a.i./ha | spraying   | 0            | 0                  | 3.60 kg a.i./ha                | n.a. Treatments only in pre-sowing/pre-planting of crop |
| Root and rhizome spices | Not specified                  | SEU    | Outdoor        | ES                      | Soil treatment  | 0 0 1     | kg a.i./ha | spraying   | 0            | 0                  | 3.60 kg a.i./ha                | n.a. Treatments only in pre-sowing/pre-planting of crop |
| Bud spices           | Not specified                     | SEU    | Outdoor        | ES                      | Soil treatment  | 0 0 1     | kg a.i./ha | spraying   | 0            | 0                  | 3.60 kg a.i./ha                | n.a. Treatments only in pre-sowing/pre-planting of crop |
| Flower pistil spices | Not specified                     | SEU    | Outdoor        | ES                      | Soil treatment  | 0 0 2     | kg a.i./ha | spraying   | 0            | 0                  | 3.60 kg a.i./ha                | n.a. Treatments only in pre-sowing/pre-planting of crop |
| Aril spices          | Not specified                     | SEU    | Outdoor        | ES                      | Soil treatment  | 0 0 1     | kg a.i./ha | spraying   | 0            | 0                  | 3.60 kg a.i./ha                | n.a. Treatments only in pre-sowing/pre-planting of crop |
| Sugar beets          | Beta vulgaris subsp. vulgaris var. altissima | SEU    | Outdoor        | IT                      | Weeds               | SL 360.0  | g/L     | general (see also comment field) | 1 2 | 60 | 0.72 | 4.30 kg a.i./ha | 21 |
| Sugar canes          | Saccharum officinarum            | SEU    | Outdoor        | ES                      | Soil treatment   | 0 0 2     | kg a.i./ha | spraying   | 0            | 0                  | 3.60 kg a.i./ha                | n.a. Treatments only in pre-sowing/pre-planting of crop |
## Critical outdoor GAPs for Southern Europe

### Conventional crops

| Crop | Common name | Scientific name | Region | Outdoor/Indoor | Member state or country | Pest controlled | Formulation Type | Content | Method | Growth stage | Application | PHI or waiting period (days) | Comments (max. 250 characters) |
|------|-------------|-----------------|--------|----------------|--------------------------|-----------------|------------------|---------|--------|--------------|-------------|-----------------------------|---------------------------------|
| Chicory roots | Cichorium intybus Sativum group | SEU Outdoor ES | Soil treatment – spraying | 0 0 2 | 3.60 kg a.i./ha | n.a. | Treatments only in pre-sowing/pre-planting of crop |
| Alfalfa (for forage) | Medicago sativa | SEU Outdoor IT Weeds SL 360.0 g/L Soil treatment – general | 1 2 60 0.72 | 4.30 kg a.i./ha | 21 | 1 application per year (in-between crop production periods) |
| Clover (for forage) | Trifolium spp. | SEU Outdoor FR | Soil treatment – general | 0 0 1 | 2.52 kg a.i./ha | n.a. | Fields for sowing or planting or after harvesting. Sowing and planting must be conducted at least 48 h following treatment. Max dose/rate per year: 4.32 kg/ha a.i. |
| Grass (for forage) | not specified | SEU Outdoor IT Annual and perennial broadleaved weeds and annual and perennial grasses SL 450.0 g/L Soil treatment – general | 0 0 1 3 | 0.54 | 4.32 kg a.i./ha | n.a. | Before sowing BBCH not specified Spraying with sprayer |
| Fodder beets | Beta vulgaris spp. vulgaris var. crassa | SEU Outdoor HR Weeds (grass and broadleaf) SL 360.0 g/L Soil treatment – general | 0 0 1 | 1.08 | 1.08 kg a.i./ha | n.a. | |

GAP: Good Agricultural Practice; BBCH: growth stages of mono- and dicotyledonous plants; PHI: preharvest interval; NEU: northern European Union; SEU: southern European Union; a.i.: active ingredient.
| Common name | Scientific name | Region | Outdoor/ Indoor | Member state or country | Pest controlled | Formulation Type | Content Conc. | Unit | Method | Growth stage | Number Min. | Number Max. | Interval (days) Min. | Interval (days) Max. | Rate | PHI or waiting period (days) | Comments (max. 250 characters) |
|-------------|----------------|--------|-----------------|------------------------|-----------------|------------------|----------------|------|---------|---------------|-----------|-----------|-------------------|-------------------|------|------------------------|----------------------------|
| Strawberries | Fragaria × ananassa | NEU/SEU Indoor FR | FR | Soil treatment – general (see also comment field) | From BBCH | Until BBCH | Number | 1 | Rate | kg a.i. / ha | 30 | | 2.52 | | Treatments only in pre-sowing/ pre-planting of crop |
| Blackberries | Rubus sect. Rubus | NEU/SEU Indoor ES | ES | Soil treatment – spraying | 0 | 0 | 2 | 3.60 | g a.i. / ha | n.a. | Treatments only in pre-sowing/ pre-planting of crop |
| Dewberries | Rubus caesius | NEU/SEU Indoor ES | ES | Soil treatment – spraying | 0 | 0 | 2 | 3.60 | g a.i. / ha | n.a. | Treatments only in pre-sowing/ pre-planting of crop |
| Raspberries | Rubus idaeus | NEU/SEU Indoor ES | ES | Soil treatment – spraying | 0 | 0 | 2 | 3.60 | g a.i. / ha | n.a. | Treatments only in pre-sowing/ pre-planting of crop |
| Garlic | Allium sativum | NEU/SEU Indoor FR | FR | Soil treatment – general (see also comment field) | 1 | | Rate | 2.52 | kg a.i. / ha | 30 | 1 application per year (in-between crop production periods) |
| Onions | Allium cepa Common Onion Group | NEU/SEU Indoor FR | FR | Soil treatment – general (see also comment field) | 1 | | Rate | 2.52 | kg a.i. / ha | 30 | 1 application per year (in-between crop production periods) |
| Shallots | Allium cepa Aggregatum Group, syn: Allium acaulis | NEU/SEU Indoor FR | FR | Soil treatment – general (see also comment field) | 1 | | Rate | 2.52 | kg a.i. / ha | 30 | 1 application per year (in-between crop production periods) |
| Spring onions | Allium cepa Common Onion Group; Allium fistulosum | NEU/SEU Indoor FR | FR | Soil treatment – general (see also comment field) | 1 | | Rate | 2.52 | kg a.i. / ha | 30 | 1 application per year (in-between crop production periods) |
### Critical indoor GAPs for Northern and Southern Europe (including post-harvest treatments)

#### Conventional crops

| Crop | Scientific name | Region | Outdoor Indoor | Member state or country | Pest controlled | Formulation | Application | PHI or waiting period (days) | Comments (max. 250 characters) |
|------|-----------------|--------|----------------|-------------------------|-----------------|-------------|-------------|-------------------------------|---------------------------------|
| Tomatoes | *Lycopersicon esculentum* | NEU/SEU | Indoor | FR | Soil treatment – general (see also comment field) | 1 | 2.52 kg a.i./ha | 30 | 1 application per year (in-between crop production periods) |
| Sweet peppers | *Capsicum annuum* | NEU/SEU | Indoor | FR | Soil treatment – general (see also comment field) | 1 | 2.52 kg a.i./ha | 30 | 1 application per year (in-between crop production periods) |
| Aubergines | *Solanum melongena* | NEU/SEU | Indoor | FR | Soil treatment – general (see also comment field) | 1 | 2.52 kg a.i./ha | 30 | 1 application per year (in-between crop production periods) |
| Okra | *Abelmoschus esculentus* | NEU/SEU | Indoor | FR | Soil treatment – general (see also comment field) | 1 | 2.52 kg a.i./ha | 30 | 1 application per year (in-between crop production periods) |
| Cucumbers | *Cucumis sativus* | NEU/SEU | Indoor | FR | Soil treatment – general (see also comment field) | 1 | 2.52 kg a.i./ha | 30 | 1 application per year (in-between crop production periods) |
| Gherkins | *Cucumis sativus* | NEU/SEU | Indoor | FR | Soil treatment – general (see also comment field) | 1 | 2.52 kg a.i./ha | 30 | 1 application per year (in-between crop production periods) |
| Courgettes | *Cucurbita pepo* Zucchini Group | NEU/SEU | Indoor | FR | Soil treatment – general (see also comment field) | 1 | 2.52 kg a.i./ha | 30 | 1 application per year (in-between crop production periods) |
| Melons | *Cucumis melo* | NEU/SEU | Indoor | FR | Soil treatment – general (see also comment field) | 1 | 2.52 kg a.i./ha | 30 | 1 application per year (in-between crop production periods) |
| Pumpkins | *Cucurbita maxima* | NEU/SEU | Indoor | FR | Soil treatment – general (see also comment field) | 1 | 2.52 kg a.i./ha | 30 | 1 application per year (in-between crop production periods) |
### Critical indoor GAPs for Northern and Southern Europe (including post-harvest treatments)

#### Conventional crops

| Crop | Common name | Scientific name | Region | Outdoor/Indoor | Pest controlled | Formulation Type | Content Conc. | Method Growth stage From BBCH | Application Interval (days) | Rate PHI or waiting period (days) | Comments (max. 250 characters) |
|------|-------------|-----------------|--------|----------------|-----------------|------------------|---------------|-----------------------------|-------------------------------|---------------------------------|----------------------------------|
|     | Watermelons | Citrullus vulgaris, syn. Citrullus lanatus | NEU/SEU | Indoor | FR | Soil treatment - general (see also comment field) | SL 360.0 g/L | 0 | 2 | 3.60 kg a.i./ha n.a. | Application pre-sowing or pre-planting, or after harvest, end of cycle |
|     | Broccoli    | Brassica oleracea var. italica | NEU/SEU | Indoor | IT | Soil treatment - general (see also comment field) | SL 360.0 g/L | 0 | 2 | 3.60 kg a.i./ha n.a. | Application pre-sowing or pre-planting, or after harvest, end of cycle |
|     | Cauliflowers | Brassica oleracea var. botrytis | NEU/SEU | Indoor | IT | Soil treatment - general (see also comment field) | SL 360.0 g/L | 0 | 2 | 3.60 kg a.i./ha n.a. | Application pre-sowing or pre-planting, or after harvest, end of cycle |
|     | Brussels sprouts | Brassica oleracea var. gemmifera | NEU/SEU | Indoor | IT | Soil treatment - general (see also comment field) | SL 360.0 g/L | 0 | 2 | 3.60 kg a.i./ha n.a. | Application pre-sowing or pre-planting, or after harvest, end of cycle |
|     | Head cabbages | Brassica oleracea var. capitata | NEU/SEU | Indoor | IT | Soil treatment - general (see also comment field) | SL 360.0 g/L | 0 | 2 | 3.60 kg a.i./ha n.a. | Application pre-sowing or pre-planting, or after harvest, end of cycle |
|     | Chinese cabbages | Brassica rapa subsp. pekinensis | NEU/SEU | Indoor | IT | Soil treatment - general (see also comment field) | SL 360.0 g/L | 0 | 2 | 3.60 kg a.i./ha n.a. | Application pre-sowing or pre-planting, or after harvest, end of cycle |
| Common name | Scientific name | Region | Outdoor/Indoor | Pest controlled | Pest controlled | Formulation | Application | PHI or waiting period (days) | Comments (max. 250 characters) |
|-------------|----------------|--------|----------------|-----------------|-----------------|--------------|-------------|---------------------------|-------------------------------|
| Kales       | Brassicaoleracea var. sabellica; Brassicaoleracea var. viridis | NEU/SEU | Indoor ES | Soil treatment - spraying | 0 0 2 | 3.60 kg a.i./ha | n.a. | Treatments only in pre-sowing/ pre-planting of crop |
| Kohlrabies  | Brassicaoleracea var. gongylodes | NEU/SEU | Indoor IT | Soil treatment - general (see also comment field) | 0 2 | 3.60 kg a.i./ha | n.a. | Application pre-sowing or pre-planting, or after harvest, end of cycle |
| Lamb’s lettuces | Valerianella locusta | NEU/SEU | Indoor FR | Soil treatment - general (see also comment field) | 1 | 2.52 kg a.i./ha | 30 | 1 application per year (in-between crop production periods) |
| Lettuces    | Lactuca sativa | NEU/SEU | Indoor FR | Soil treatment - general (see also comment field) | 1 | 2.52 kg a.i./ha | 30 | 1 application per year (in-between crop production periods) |
| Escaroles   | Cichorium endivia var. latifolia | NEU/SEU | Indoor FR | Soil treatment - general (see also comment field) | 1 | 2.52 kg a.i./ha | 30 | 1 application per year (in-between crop production periods) |
| Cresses     | Lepidium sativum subsp. sativum | NEU/SEU | Indoor FR | Soil treatment - general (see also comment field) | 1 | 2.52 kg a.i./ha | 30 | 1 application per year (in-between crop production periods) |
| Land cresses | Barbarea verna | NEU/SEU | Indoor FR | Soil treatment - general (see also comment field) | 1 | 2.52 kg a.i./ha | 30 | 1 application per year (in-between crop production periods) |
| Roman rocket | Eruca sativa | NEU/SEU | Indoor FR | Soil treatment - general (see also comment field) | 1 | 2.52 kg a.i./ha | 30 | 1 application per year (in-between crop production periods) |
| Crop | Common name | Scientific name | Region | Outdoor/Indoor | Member state or country | Pest controlled | Formulation Type | Content Conc. Unit | Application Method | Growth stage From BBCH | Until BBCH Number | Interval (days) | Rate PHI or waiting period (days) | Comments (max. 250 characters) |
|------|-------------|-----------------|--------|----------------|-------------------------|----------------|------------------|-------------------|----------------------|---------------------|----------------|---------------|-------------------------------|-------------------------|
| Red mustards | Brassica juncea var. rugosa | NEU/SEU Indoor | FR | Soil treatment - general (see also comment field) | 1 | 2.52 kg a.i./ha | 30 | Application per year (in-between crop production periods) |
| Baby leaf crops | Not specified | NEU/SEU Indoor | FR | Soil treatment - general (see also comment field) | 1 | 2.52 kg a.i./ha | 30 | Application per year (in-between crop production periods) |
| Spinaches | Spinacia oleracea | NEU/SEU Indoor | FR | Soil treatment - general (see also comment field) | 1 | 2.52 kg a.i./ha | 30 | Application per year (in-between crop production periods) |
| Purslanes | Portulaca oleracea | NEU/SEU Indoor | FR | Soil treatment - general (see also comment field) | 1 | 2.52 kg a.i./ha | 30 | Application per year (in-between crop production periods) |
| Chards | Beta vulgaris var. Raevensis | NEU/SEU Indoor | FR | Soil treatment - general (see also comment field) | 1 | 2.52 kg a.i./ha | 30 | Application per year (in-between crop production periods) |
| Watercresses | Nasturtium officinale | NEU/SEU Indoor IT | Emerged annual, biannual and perennial weeds | SL 360.0 g/L | Soil treatment - general (see also comment field) | 0 | 0 | 2 | 3.60 g a.i./ha | n.a. | Application pre-sowing or pre-planting, or after harvest, end of cycle |
| Chervil | Anthriscus cerefolium | NEU/SEU Indoor | FR | Soil treatment - general (see also comment field) | 1 | 2.52 kg a.i./ha | 30 | Application per year (in-between crop production periods) |
| Chives | Allium schoenoprasum | NEU/SEU Indoor | FR | Soil treatment - general (see also comment field) | 1 | 2.52 kg a.i./ha | 30 | Application per year (in-between crop production periods) |
## Critical indoor GAPs for Northern and Southern Europe (including post-harvest treatments)

### Conventional crops

| Crop | Common name | Scientific name | Region | Outdoor/Indoor | Pest controlled | Formulation Content Type | Application Method | Growth stage | Number | Interval | Rate | PHI or waiting period (days) | Comments (max. 250 characters) |
|------|-------------|-----------------|--------|----------------|----------------|------------------------|-------------------|--------------|--------|----------|-----|-----------------------------|--------------------------------|
| Celery leaves | Apium graveolens var. secalinum | NEU/SEU Indoor FR | Soil treatment - general (see also comment field) | 1 | 2.52 kg a.i./ha | 30 | 1 application per year (in-between crop production periods) |
| Parsley | Petroselinum crispum | NEU/SEU Indoor FR | Soil treatment - general (see also comment field) | 1 | 2.52 kg a.i./ha | 30 | 1 application per year (in-between crop production periods) |
| Sage | Salvia officinalis | NEU/SEU Indoor FR | Soil treatment - general (see also comment field) | 1 | 2.52 kg a.i./ha | 30 | 1 application per year (in-between crop production periods) |
| Rosemary | Rosmarinus officinalis | NEU/SEU Indoor FR | Soil treatment - general (see also comment field) | 1 | 2.52 kg a.i./ha | 30 | 1 application per year (in-between crop production periods) |
| Thyme | Thymus vulgaris | NEU/SEU Indoor FR | Soil treatment - general (see also comment field) | 1 | 2.52 kg a.i./ha | 30 | 1 application per year (in-between crop production periods) |
| Basil | Ocimum basilicum | NEU/SEU Indoor FR | Soil treatment - general (see also comment field) | 1 | 2.52 kg a.i./ha | 30 | 1 application per year (in-between crop production periods) |
| Laurel | Laurus nobilis | NEU/SEU Indoor FR | Soil treatment - general (see also comment field) | 1 | 2.52 kg a.i./ha | 30 | 1 application per year (in-between crop production periods) |
| Tarragon | Artemisia dracunculus | NEU/SEU Indoor FR | Soil treatment - general (see also comment field) | 1 | 2.52 kg a.i./ha | 30 | 1 application per year (in-between crop production periods) |
| Beans (with pods) | Phaseolus vulgaris | NEU/SEU Indoor FR | Soil treatment - general (see also comment field) | 1 | 2.52 g a.i./ha | 30 | 1 application per year (in-between crop production periods) |
### Critical indoor GAPs for Northern and Southern Europe (including post-harvest treatments)

**Conventional crops**

| Crop Common name | Scientific name | Region | Outdoor/Indoor | Pest controlled | Formulation Type | Content Conc. Unit | Method Growth stage from BBCH Until BBCH | Application Number Interval (days) | Rate PHI or waiting period (days) | Comments (max. 250 characters) |
|------------------|-----------------|--------|----------------|-----------------|------------------|--------------------|----------------------|--------------------------------|---------------------------------|----------------------------------|
| Beans (without pods) | Phaseolus vulgaris | NEU/SEU | Indoor | FR | Soil treatment - general (see also comment field) | 1 | 2.52 g a.i./ ha | 30 | 1 application per year (in-between crop production periods) |                                   |
| Peas (with pods) | Pisum sativum | NEU/SEU | Indoor | FR | Soil treatment - general (see also comment field) | 1 | 2.52 g a.i./ ha | 30 | 1 application per year (in-between crop production periods) |                                   |
| Peas (without pods) | Pisum sativum | NEU/SEU | Indoor | FR | Soil treatment - general (see also comment field) | 1 | 2.52 g a.i./ ha | 30 | 1 application per year (in-between crop production periods) |                                   |
| Lentils (fresh) | Lens culinaris, syn: Lens esculenta | NEU/SEU | Indoor | FR | Soil treatment - general (see also comment field) | 1 | 2.52 g a.i./ ha | 30 | 1 application per year (in-between crop production periods) |                                   |
| Asparagus | Asparagus officinalis | NEU/SEU | Indoor | FR | Soil treatment - general (see also comment field) | 1 | 2.52 kg a.i./ ha | 30 | 1 application per year (in-between crop production periods) |                                   |
| Cardoons | Cynara cardunculus Cardoon group | NEU/SEU | Indoor | FR | Soil treatment - general (see also comment field) | 1 | 2.52 kg a.i./ ha | 30 | 1 application per year (in-between crop production periods) |                                   |
| Celeries | Apium graveolens var. dulce | NEU/SEU | Indoor | FR | Soil treatment - general (see also comment field) | 1 | 2.52 kg a.i./ ha | 30 | 1 application per year (in-between crop production periods) |                                   |
| Florence fennels | Foeniculum vulgare var. azoricum | NEU/SEU | Indoor | FR | Soil treatment - general (see also comment field) | 1 | 2.52 kg a.i./ ha | 30 | 1 application per year (in-between crop production periods) |                                   |
| Leeks | Allium ampeloprasum ampeloprasum Leek Group, syn: Allium porrum | NEU/SEU | Indoor | FR | Soil treatment - general (see also comment field) | 1 | 2.52 kg a.i./ ha | 30 | 1 application per year (in-between crop production periods) |                                   |
## Critical indoor GAPs for Northern and Southern Europe (including post-harvest treatments)

### Conventional crops

| Crop | Common name | Scientific name | Region | Outdoor/Indoor | Pest controlled | Formulation | Content | Method | Application | PHI or waiting period (days) | Comments (max. 250 characters) |
|------|-------------|-----------------|--------|----------------|----------------|--------------|---------|---------|-------------|----------------------------|----------------------------------|
| Rhubarbs | Rheum rhabarbarum | NEU/SEU Indoor FR | Soil treatment – general (see also comment field) | 1 | 2.52 g a.i./ha | 30 | 1 application per year (in-between crop production periods) |
| Bamboo shoots | Bambusa vulgaris; Phyllostachys edulis | NEU/SEU Indoor FR | Soil treatment – general (see also comment field) | 1 | 2.52 kg a.i./ha | 30 | 1 application per year (in-between crop production periods) |
| Palm hearts | Bactris gasipaes; Cocos nucifera; Daemonorops jenkinsiana; Euterpe edulis; Euterpe oleacea | NEU/SEU Indoor FR | Soil treatment – general (see also comment field) | 1 | 2.52 kg a.i./ha | 30 | 1 application per year (in-between crop production periods) |
| Beans (dry) | Phaseolus vulgaris | NEU/SEU Indoor ES | Soil treatment – spraying | 0 | 3.60 g a.i./ha | n.a. | Treatments only in pre-sowing/pre-planting of crop. |
| Lentil (dry) | Lens culinaris, syn: Lente esculenta | NEU/SEU Indoor ES | Soil treatment – spraying | 0 | 3.60 g a.i./ha | n.a. | Treatments only in pre-sowing/pre-planting of crop. |
| Peas (dry) | Pisum sativum | NEU/SEU Indoor ES | Soil treatment – spraying | 0 | 3.60 g a.i./ha | n.a. | Treatments only in pre-sowing/pre-planting of crop. |
| Lupins (dry) | Lupinus albus subsp. albus; Lupinus angustifolius; Lupinus luteus; Lupinus mutabilis | NEU/SEU Indoor ES | Soil treatment – spraying | 0 | 3.60 g a.i./ha | n.a. | Treatments only in pre-sowing/pre-planting of crop. |

**GAP:** Good Agricultural Practice; **BBCH:** growth stages of mono- and dicotyledonous plants; **PHI:** preharvest interval; **NEU:** northern European Union; **SEU:** southern European Union; **a.i.:** active ingredient.
## Critical GAPs for import tolerances (non-European indoor, outdoor or post-harvest treatments)

### Conventional crops

| Common name | Scientific name | Region | Outdoor/Indoor | Member state or country | Pest controlled | Formulation | Application | PHI or waiting period (days) | Comments (max 250 characters) |
|-------------|-----------------|--------|----------------|-------------------------|-----------------|-------------|-------------|-----------------------------|-------------------------------|
| Bananas     | Musa acuminata; Musa balbisiana; Musa acuminata × Musa balbisiana | non-EU | Outdoor | US | SL | 360.0 g/L | Soil treatment – general (see also comment field) | 1 | 0.18 | 4.30 kg a.i./ha | 30 |
| Beans (dry) | Phaseolus vulgaris | non-EU | Outdoor | US | SL | 360.0 g/L | Foliar treatment – broadcast spraying | 85 89 | 1 1 | 0.90 | 2.16 kg a.i./ha | 7 |
| Lentils (dry) | Lens culinaris, syn: Lens esculenta | non-EU | Outdoor | US | SL | 360.0 g/L | Foliar treatment – broadcast spraying | 85 89 | 1 1 | 0.90 | 2.16 kg a.i./ha | 7 |
| Peas (dry) | Pisum sativum | non-EU | Outdoor | US | SL | 360.0 g/L | Foliar treatment – broadcast spraying | 85 89 | 1 1 | 0.90 | 2.16 kg a.i./ha | 7 |
| Sunflower seeds | Helianthus annuus | non-EU | Outdoor | US | SL | 360.0 g/L | Foliar treatment – broadcast spraying | 85 89 | 1 1 | 0.72 | 1.80 kg a.i./ha | 21 |
| Soybeans | Glycine max | non-EU | Outdoor | US | SL | 360.0 g/L | Foliar treatment – broadcast spraying | 85 89 | 1 1 | 4.20 | 2.16 kg a.i./ha | 7 |
| Barley | Hordeum vulgare | non-EU | Outdoor | US | SL | 360.0 g/kg | Foliar treatment – broadcast spraying | 85 89 | 1 1 | 2.50 | 2.16 kg a.i./ha | 7 |
| Buckwheat | Fagopyrum esculentum | non-EU | Outdoor | US | SL | 360.0 g/kg | Foliar treatment – broadcast spraying | 85 89 | 1 1 | 0.54 | 2.16 kg a.i./ha | 7 |
| Maize | Zea mays | non-EU | Outdoor | US | SL | 360.0 g/kg | Foliar treatment – broadcast spraying | 85 89 | 1 1 | 0.54 | 2.16 kg a.i./ha | 7 |
| Common millet | Panicum miliaceum | non-EU | Outdoor | US | SL | 360.0 g/kg | Foliar treatment – broadcast spraying | 85 89 | 1 1 | 0.54 | 2.16 kg a.i./ha | 7 |
| Oat | Avena sativa | non-EU | Outdoor | US | SL | 360.0 g/kg | Foliar treatment – broadcast spraying | 85 89 | 1 1 | 0.54 | 2.16 kg a.i./ha | 7 |
### Critical GAPs for import tolerances (non-European indoor, outdoor or post-harvest treatments)

#### Conventional crops

| Common name | Scientific name | Region | Outdoor/Indoor | Member state or country | Pest controlled | Formulation Type | Content | Method | Growth stage From BBCH | Until BBCH | Number Interval (days) | Rate Min. | Max. | PHI or waiting period (days) | Comments (max 250 characters) |
|-------------|-----------------|--------|----------------|--------------------------|-----------------|-------------------|---------|--------|------------------------|-----------|------------------------|-------|-----|-------------------------|-------------------------------|
| Rye         | Secale cereale  | non-EU | Outdoor | US                      | SL              | Foliar treatment | g/kg    | broadcasting | 85                     | 89        | 1 1                   | 0.54  | 2.16 | 7                       |                               |
| Sorghum     | Sorghum bicolor | non-EU | Outdoor | US                      | SL              | Foliar treatment | g/l     | broadcast | 85                     | 89        | 1 1                   | 1.70  | 7               | 7               |                               |
| Wheat       | Triticum aestivum | non-EU | Outdoor | US                      | SL              | Foliar treatment | g/kg    | broadcast | 85                     | 89        | 1 1                   | 0.54  | 2.16 | 7                       |                               |
| Teas        | Camellia sinensis | non-EU | Outdoor | US                      | SL              | Soil treatment   | g/L     | general (see also comment field) | 3 3         | 0.90  | 2.30 | 7               | 7               |                               |
| Sugar canes | Saccharum officinarum | non-EU | Outdoor | US                      | SL              | Foliar treatment | g/kg    | broadcast | 85                     | 89        | 1 1                   | 0.50  | 0.84 | 21                      |                               |

GAP: Good Agricultural Practice; BBCH: growth stages of mono- and dicotyledonous plants; PHI: preharvest interval; NEU: northern European Union; SEU: southern European Union; a.i.: active ingredient.
### A.2. Authorised uses on EPSPS genetically modified crops

**Critical GAPs for import tolerances (non-European indoor, outdoor or post-harvest treatments)**

| EPSPS genetically modified crops | Common name | Region | Outdoor/ Indoor | Member state or country | Pest controlled | Formulation | Content | Method | Growth stage | Number | Interval (days) | Rate | PHI or waiting period (days) | Comments |
|---------------------------------|-------------|--------|-----------------|-------------------------|-----------------|-------------|---------|--------|--------------|--------|-----------------|------|--------------------------|----------|
|                                  | Sweet corn  | non-EU | Outdoor         | US                      | SL              | 360.0 g/L  | SL      | Foliar treatment – broadcast spraying | 9      | 18              | 1-3  | 10              | 0.63 | 1.70 kg a.i./ha        | 30       |
|                                  | Cotton seeds| non-EU | Outdoor         | US                      | SL              | 360.0 g/L  | SL      | Foliar treatment – broadcast spraying | 9      | 89              | 1-3  | 10              | 1.70 | 1 kg a.i./ha         | 7        |
|                                  | Sugar beets | non-EU | Outdoor         | US                      | SL              | 360.0 g/L  | SL      | Foliar treatment – broadcast spraying | 9      | 39              | 1-4  | 10              | 0.90 | 1.30 kg a.i./ha        | 30       |

GAP: Good Agricultural Practice; BBCH: growth stages of mono- and dicotyledonous plants; PHI: preharvest interval; NEU: northern European Union; SEU: southern European Union; a.i.: active ingredient.

### A.3. Authorised uses on GOX genetically modified crops

**Critical GAPs for import tolerances (non-European indoor, outdoor or post-harvest treatments)**

| GOX genetically modified crops | Common name | Region | Outdoor/ Indoor | Member state or country | Pest controlled | Formulation | Content | Method | Growth stage | Number | Interval (days) | Rate | PHI or waiting period (days) | Comments |
|--------------------------------|-------------|--------|-----------------|-------------------------|-----------------|-------------|---------|--------|--------------|--------|-----------------|------|--------------------------|----------|
|                                  | Rapeseeds  | non-EU | Outdoor         | US                      | SL              | 540.0 g/L  | SL      | Foliar treatment – broadcast spraying | 9      | 31              | 1-2  | 60              | 0.43 | 0.87 kg a.i./ha        | n.a      |

GAP: Good Agricultural Practice; BBCH: growth stages of mono- and dicotyledonous plants; PHI: preharvest interval; NEU: northern European Union; SEU: southern European Union; a.i.: active ingredient.
### A.4. Uses on GAT genetically modified crops reported by MSs

#### Critical GAPs for import tolerances (non-European indoor, outdoor or post-harvest treatments)

| Crop                      | Region | Formulation | Application | PHI or waiting period (days) | Comments |
|---------------------------|--------|-------------|-------------|-----------------------------|----------|
| **Crop**                  | **Region** | **Outdoor/Indoor** | **Member state or country** | **Pest controlled** | **Formulation** | **Content** | **Method** | **Growth stage** | **Number** | **Interval (days)** | **Rate** | **Comments** |
| Rapeseeds Brassica napus subsp. napus | non-EU Outdoor US | SL 360.0 g/L | Foliar treatment - broadcast spraying | 16 89 | 1 2 | 0.30 0.90 kg a.i./100 kg | 7 | According to the information available to EFSA, GAT GM rapeseed is currently not authorised for placing on the market within the EU (currently under assessment in the framework of Regulation (EC) No 1829/2003) |

**GAP:** Good Agricultural Practice; **BBCH:** growth stages of mono- and dicotyledonous plants; **PHI:** preharvest interval; **NEU:** northern European Union; **SEU:** southern European Union; **a.i.:** active ingredient.
## Appendix B – List of end points

### B.1. Residues in plants

#### B.1.1. Nature of residues and methods of analysis in plants

#### B.1.1.1. Metabolism studies, methods of analysis and residue definitions in plants

| Primary crops (available studies) | Crop groups | Crops | Applications | Sampling (DAT) |
|-----------------------------------|-------------|-------|--------------|----------------|
| Fruit crops                       | Mandarins   | Soil or foliar, 1 × 2.24 kg/ha | 119           |
|                                   |             | Hydroponic, 10 mg/L solution    | 7, 14         |
|                                   |             | Foliar, 1 × 4 mg/leaf           | 7–56          |
|                                   | Almonds     | Soil, 1 × 5.1 kg/ha             | 112           |
|                                   | Walnut      | Soil, 1 × 0.1 mg/leaf           | 14, 35        |
|                                   | Pecans      | Foliar, 1 × 4 mg/leaf           | 7–56          |
|                                   | Apples      | Soil, 1 × 3.4 kg/ha glyphosate or 1.7 kg/ha AMPA | 42, 84 |
|                                   |             | Trunk, 1 × 0.09 mg/plant        | 8, 42         |
|                                   |             | Foliar, 1 × 0.005 mg/4–5 leaves | 7–70          |
|                                   | Grapes      | Soil spraying, 8 kg/ha split in 2 applications (glyphosate-trimesium) | 14, 365 |
|                                   |             | Foliar, 0.03 g/plant split in 2 applications (glyphosate-trimesium) | 14 |
|                                   |             | Soil drench, 1 × 8 kg/ha (glyphosate-trimesium) | 7 |
|                                   |             | Soil, 1 × 3.4 kg/ha (glyphosate) or 1.7 kg/ha (AMPA) | 42, 84 |
|                                   |             | Trunk, 1 × 0.04 mg/plant        | 42, 84        |
|                                   |             | Hydroponic, 5, 10, 20 or 40 mg/L solution | 10, 21, 42 |
|                                   |             | Foliar, 1 × 0.01, 0.06 or 0.12 mg/plant | 7–70 |
|                                   | Avocados    | On to the leaf, rate not reported | 10 |
|                                   |             | Into fruit peduncle, a 453,000 cpm solution | Not reported |
|                                   | Potatoes    | Soil, 1 × 5.75 × 10⁸ dpm        | 9–128         |
|                                   |             | Foliar, 1 × 0.1 mg/plant        | 1–34          |
|                                   | Sugar beet  | Soil, 1 × 4.5 kg/ha             | 28, 49, 56    |
| Cereals/grass crops              | Barley, Oat, Rice, Sorghum | Soil, 1 × 4.5 kg/ha             | 28, 49, 56    |
|                                   |             | Hydroponic, 0.183 mg/L solution | 7, 14, 28    |
|                                   | Maize, Wheat| Soil, 1 × 4.5 kg/ha glyphosate or 1.7 kg/ha AMPA | 28, 49, 56 |
|                                   |             | Hydroponic (solution or substrate), equivalent to 2.24 kg/ha | 4, 10, 18 |
|                                   |             | Hydroponic, 0.6–2.4 mg/L solutions | 6 to 28 |
|                                   | Wheat       | Foliar, 1 × 6 kg/ha (glyphosate-trimesium) | 7 |
|                                   | Maize       | Soil, 1 × 5.1 kg/ha (glyphosate-trimesium) | Study informative only |
|                                   | Rice        | Soil, 1 × 2.5 kg/ha             | 31, 47, 73, 122 |
| Primary crops (available studies) | Crop groups | Crops | Applications | Sampling (DAT) |
|----------------------------------|-------------|-------|--------------|----------------|
| Pulses/oilseeds                 | Cotton, Soyabean | 1 × 4.5 kg/ha (glyphosate) or 1.7 kg/ha (AMPA) | 28, 49, 56     |
|                                  |                          | Hydroponic (solution or substrate), equivalent to 2.24 kg/ha | 4, 10, 18      |
|                                  |                          | Hydroponic, 2.4–2.65 mg/L solutions | 16–28          |
| Soyabean                         | Soil drench, 1 × 8.4 kg/ha (glyphosate-trimesium) | 28, 49, 56     |
|                                  | Foliar, not reported. Study informative only | 0 to 14        |
|                                  | Soil, 1 × 4.35 kg/ha. Study informative only | Not reported   |
|                                  | Hydroponic, 4.4 mg/L solution | Study informative only | 9                   |
| Miscellaneous                    | Coffee                  | Soil, 1 × 4.5 kg/ha (glyphosate) or 4.5 kg/ha (AMPA) | 28, 49, 56     |
|                                  |                          | Hydroponic, 1.1, 3.6 or 11.1 mg/L solution | 21              |
|                                  |                          | Stem application, 700 g solution | 35        |
|                                  |                          | Foliar, 7.7 × 10⁶ to 1.5 × 10⁷ dpm | 21 to 35       |
| Sugar cane                       | Soil, 1 × 11.2 kg/ha, pre-planting | 195, 354       |
|                                  | Soil, 1 × 3.4 or 6.7 kg/ha, post-planting | 0, 91, 83      |
|                                  | Foliar, 1 × 5.6 or 11.2 kg/ha, post-emergence | 40, 42, 44, 47 |
| Pasture                          | Soil, 1 × 4.5 kg/ha. Study informative only | 42, 84, 126, 168 and 224 |
|                                  | Pre-planting weed spraying, 1.7 kg/ha | Study informative only | 42, 84, 126 |
|                                  | Foliar, 1.1 kg/ha. Study informative only | 63, 105 and 161 |
|                                | Foliar, 1.1 kg/ha. Study informative only | 7 |

**EPSPS & GOX tolerant crops**

| Pulses/oilseeds (EPSPS and GOX) | Crops | Applications | Sampling (DAT) |
|----------------------------------|-------|--------------|----------------|
| Soyabean (EPSPS)                | Soil, 1 × 5.4 kg/ha | 56, 84, 104 |
|                                  | Foliar, 1 × 0.84 kg/ha (BBCH 23) | 35, 63, 83 |
|                                  | Foliar, 0.84 (BBCH 23) + 1.68 kg/ha (BBCH 51) | 13, 41, 61 |
|                                  | 4.2 kg/ha (pre-sowing) + 1.26 kg/ha (BBCH 13) | 14 |
|                                  | 4.2 kg/ha (pre-sowing) + 1.26 kg/ha (BBCH 13) + 1.26 kg/ha (BBCH 65) | 0, 60 |
| Cotton (EPSPS)                  | Foliar, 930 (BBCH 14) + 1,260 g/ha, (BBCH 16) | 27, 158 |
|                                  | 2.5 kg/ha (pre-emergence) + 2 × 1.7 kg/ha (BBCH 15 and 19) + 0.84 (7 days pre-harvest) | 168 |
| Root (EPSPS)                    | 1 × 0.9 kg/ha (pre-emergence) + 1.08 kg/ha (BBCH 19) | 160 |
|                                  | Foliar, 1 × 0.9 kg/ha (BBCH 14) + 1.08 kg/ha (BBCH 19) | 92 |
### Primary crops (available studies)

| Crop groups | Crops | Applications | Sampling (DAT) |
|-------------|-------|--------------|----------------|
| Cereal      | Maize (EPSPS and GOX) | Foliar, $1 \times 0.9 \text{ kg/ha (BBCH 16)} + 0.8 \text{ kg/ha (BBCH 19)}$ | 3, 49-53, 83 |
|             | Maize (EPSPS) | $1 \times 4.2 \text{ kg/ha (after sowing)} + 3 \times 0.84 \text{ kg/ha}$ | 65, 96, 131 |

### GAT tolerant crops

| Crop groups | Crops | Applications | Sampling |
|-------------|-------|--------------|----------|
| Pulses/oilseeds | Oilseed rape | $4.5 \text{ kg/ha (pre-emergence)} + 3 \times 1.9 \text{ kg/ha (BBCH 12 and 15 and 7 days pre-harvest)}$ | At BBCH 69, 87, 89 (7 DALA) |
|             | Soyabeans | $3.4 \text{ kg/ha (pre-emergence)} + 1.5 \text{ (BBCH 61)} + 2.4 \text{ (BBCH 65)} + 0.9 \text{ kg/ha (14 days pre-harvest)}$ | 36 DATsoil, 82 DAT$_{2,1}$ 4 DALA |
| Cereal      | Maize   | $4.3 \text{ kg/ha (pre-emergence)} + 3 \times 1.1 \text{ kg/ha (at BBCH 31, 39 and 87)}$ | 48 DATsoil, 59 DAT$_{2,1}$ 7 DALA |

Sources: Germany (2015, 2017)

### Rotational crops (available studies)

| Crop groups | Crop(s) | Application(s) | PBI (DAT) |
|-------------|---------|----------------|-----------|
| Root/tuber crops | Beets | Soil before sowing soyabeans or wheat (primary), 4.5 kg/ha | 120 |
|             |        | Soil before sowing cabbages (primary), 4.5 kg/ha | 360 |
|             |        | Soil before sowing soyabeans (primary), 2 $\times 4.5$ kg/ha | 30 |
| Carrots     |        | Foliar on rye grass, 4.2 kg/ha | 30, 120, 365 |
|             |        | Foliar on peas (primary), 4.5 kg/ha | 1-23 |
|             |        | Foliar on cabbages (primary), 4.5 kg/ha | 1-23 |
| Radishes    |        | Bare soil, 6.5 kg a.s./ha | 30, 120, 365 |
|             |        | Foliar on soyabeans (primary), 4.4 kg/ha + bare soil 1.4 kg/ha + 0.75 kg ha (glyphosate-trimesium) | 63, 308 |
|             |        | Foliar on soyabeans (primary), 1 $\times 3.87$ kg/ha (glyphosate-trimesium) | 35 |
| Leafy crops | Cabbages | Foliar on peas (primary), 4.5 kg/ha | 1-23 |
|             |        | Foliar on carrots (primary), 4.5 kg/ha | 1-23 |
|             |        | Soil before sowing beets (primary), 4.5 kg/ha | 120 |
|             |        | Soil before sowing soyabeans (primary), 4.5 kg/ha | 360 |
|             |        | Soil before sowing cabbages (primary), 2 $\times 4.5$ kg/ha | 30 |
| Lettuces    |        | Foliar on rye grass, 4.2 kg/ha | 30, 120, 365 |
|             |        | Bare soil, 6.5 kg a.s./ha | 30, 120, 365 |
|             |        | Foliar on soyabeans (primary), 4.4 kg/ha + bare soil 1.4 kg/ha + 0.75 kg ha (glyphosate-trimesium) | 63, 308 |
|             |        | Foliar on soyabeans (primary), 1 $\times 3.87$ kg/ha (glyphosate-trimesium) | 35 |
| Cereal (small grain) | Barley | Foliar on rye grass, 4.2 kg/ha | 30, 120, 365 |
|             | Maize  | Foliar on beans (primary), 4.5 kg/ha | 1-23 |
|             | Wheat  | Bare soil, 6.5 kg a.s./ha | 30, 120, 365 |
| Rotational crops (available studies) | Crop groups | Crop(s) | Application(s) | PBI (DAT) |
|------------------------------------|-------------|---------|----------------|-----------|
|                                    |             |         | Soil before sowing cabbages (primary), 4.5 kg/ha | 120       |
|                                    |             |         | Soil before sowing beets (primary), 4.5 kg/ha   | 360       |
|                                    |             |         | Soil before sowing wheat (primary), 2 × 4.5 kg/ha | 30        |
|                                    |             |         | Foliar on soyabeans (primary), 4.4 kg/ha + bare soil 1.4 kg/ha + 0.75 kg ha (glyphosate-trimesium) | 63, 308   |
|                                    | Other       | Legumes beans and legumes peas | Foliar on carrots (primary), 4.5 kg/ha | 1–23      |
|                                    |             |         | Foliar on cabbages (primary), 4.5 kg/ha         | 1–23      |

Source: Germany (2015)

| Processed commodities (hydrolysis study) | Conditions | Investigated? |
|------------------------------------------|-----------|---------------|
|                                          | Pasteurisation (20 min, 90°C, pH 4) | Yes           |
|                                          | Baking, brewing and boiling (60 min, 100°C, pH 5) | Yes           |
|                                          | Sterilisation (20 min, 120°C, pH 6) | Yes           |

Parent and N-acetyl-glyphosate were found to be stable. AMPA was not investigated.
Source: Germany (2015)

Can a general residue definition be proposed for primary crops? No
Rotational crop and primary crop metabolism similar? Yes
Residue pattern in processed commodities similar to residue pattern in raw commodities? Yes

Plant residue definition for monitoring (RD-Mo): **Main RD-enforcement:**
- For plants with glyphosate tolerant genetically modified varieties currently available on the market (sweet corn, cotton seeds, sugar beets, rapeseeds, maize and soyabeans): sum of glyphosate, AMPA and N-acetyl-glyphosate, expressed as glyphosate;
- For all other plant commodities: glyphosate.

Optional RD-enforcement:
- For all plant commodities (including plants with glyphosate tolerant genetically modified varieties currently available on the market): sum of glyphosate, AMPA and N-acetyl-glyphosate, expressed as glyphosate.

Plant residue definition for risk assessment (RD-RA): Sum of glyphosate, AMPA, N-acetyl-glyphosate and N-acetyl-AMPA, expressed as glyphosate.

Conversion factor (monitoring to risk assessment) See Appendix B.1.2

Methods of analysis for monitoring of residues (analytical technique, crop groups, LOQs) HPLC-MS/MS; high water and high oil content, acidic and dry commodities; LOQ = 0.05 mg/kg each for glyphosate, AMPA and N-acetyl-glyphosate; ILV available for glyphosate (EFSA, 2015; Germany, 2017). Confirmatory methods for AMPA (in all matrices) and N-acetyl-glyphosate (in high water and high fat content matrices and dry commodities) not available. A fully validated analytical method in complex matrices is not available.
B.1.1.2. Stability of residues in plants

| Plant products (available studies) | Category | Commodity | T (°C) | Stability (months) | Source |
|-----------------------------------|----------|-----------|--------|-------------------|--------|
| **Glyphosate**                    | High water content | Tomatoes | –18    | 31                | Germany (2015) |
|                                   | High oil content    | Soyabeans | –20    | 24                | Germany (2015) |
|                                   | Dry/high protein    | Dry beans | –18    | 18                | Germany (2015) |
|                                   | Dry/high starch     | Sorghum grain | –20 | 48                | Germany (2015) |
|                                   | High acid content   | Oranges   | –18    | 24                | Germany (2015) |
|                                   | Other               | Rye straw | –20    | 45                | Germany (2015) |
| **AMPA**                          | High water content  | Soyabeans forage | –18  | 24                | Germany (2015) |
|                                   | High oil content    | Soyabeans | –20    | 24                | Germany (2015) |
|                                   | Dry/high protein    | –         | –      | –                 | –       |
|                                   | Dry/high starch     | Maize grain | –18 | 31                | Germany (2015) |
|                                   | High acid content   | Oranges   | –18    | 24                | Germany (2015) |
|                                   | Other               | soyabeans straw | –20 | 24                | Germany (2015) |
| **N-acetyl-glyphosate**           | High water content  | Soyabeans forage, maize green plant and forage | –20 | 12                | Germany (2015, 2017) |
|                                   | High oil content    | Soyabeans seeds | –20  | 12                | Germany (2015, 2017) |
|                                   | Dry/high protein    | –         | –      | –                 | –       |
|                                   | Dry/high starch     | Maize grain | –20 | 12                | Germany (2015, 2017) |
|                                   | High acid content   | –         | –      | –                 | –       |
|                                   | Other               | Soyabeans hay, maize stover | –20 | 12                | Germany (2015, 2017) |
| **N-acetyl-AMPA**                 | High water content  | Maize stover, Soyabeans forage, maize green plant and forage | –20 | 12                | Germany (2015, 2017) |
|                                   | High oil content    | Soyabeans seeds | –20  | 18                | Germany (2017) |
|                                   | Dry/high protein    | –         | –      | –                 | –       |
|                                   | Dry/high starch     | Maize grain | –20  | 23                | Germany (2017) |
|                                   | High acid content   | –         | –      | –                 | –       |
|                                   | Other               | Soyabeans hay, maize stover | –20 | 12                | Germany (2017) |
B.1.2. Magnitude of residues in plants

B.1.2.1. Summary of residues data from the supervised residue trials on conventional crops

| Crop                  | Region/indoor<sup>a</sup> | Residue levels observed in the supervised residue trials relevant to the supported GAPs (mg/kg) | Recommendations/comments (OECD calculations) | MRL proposals (mg/kg) | HR<sub>Mo</sub> (mg/kg)<sup>b</sup> | STMR<sub>Mo</sub> (mg/kg)<sup>c</sup> | CF<sup>d</sup> |
|-----------------------|---------------------------|------------------------------------------------------------------------------------------------|---------------------------------------------|-----------------------|----------------------------------|-----------------------------------|---------|
| Citrus fruits         | NEU                       | A no residue situation can be anticipated based on metabolism study and southern trials, provided that proper equipment is used to avoid spray drift. No GAP authorised for limes in northern zone | 0.05*<sup>e</sup> | < 0.05                      | < 0.05                          | 1<sup>g</sup>                     | (1)<sup>h</sup> |
| Almonds               |                           |                                                                                               |                                             |                       |                                 |                                   |         |
| Chestnuts             |                           |                                                                                               |                                             |                       |                                 |                                   |         |
| Hazelnuts/cobnuts     |                           |                                                                                               |                                             |                       |                                 |                                   |         |
| Walnuts               |                           |                                                                                               |                                             |                       |                                 |                                   |         |
| Pome fruits           |                           |                                                                                               |                                             |                       |                                 |                                   |         |
| Stone fruits          |                           |                                                                                               |                                             |                       |                                 |                                   |         |
| SEU                   | Mo: 14 × < 0.05           | Combined data set on tree nuts (2), apricots (4), peaches (2), kiwi (2) and bananas (4), showing no residue in orchard trees (Germany, 2015, 2017) | 0.05*<sup>e</sup> | < 0.05                    | < 0.05                          | 1<sup>g</sup>                     | (1)<sup>h</sup> |
|                       | RA: 14 × < 0.125          |                                                                                               |                                             |                       |                                 |                                   |         |
| Brazil nuts           | NEU                       | Soil treatment performed at BBCH 00, i.e. before sowing, transplanting or after harvest; no residues are expected at harvest | 0.05*<sup>e</sup> | < 0.05                    | < 0.05                          | 1<sup>g</sup>                     | (1)<sup>h</sup> |
| Cashew nuts           |                           |                                                                                               |                                             |                       |                                 |                                   |         |
| Coconuts              |                           |                                                                                               |                                             |                       |                                 |                                   |         |
| Macadamias            |                           |                                                                                               |                                             |                       |                                 |                                   |         |
| Pecans                |                           |                                                                                               |                                             |                       |                                 |                                   |         |
| Pignut kyles Pistachios|                           |                                                                                               |                                             |                       |                                 |                                   |         |
| SEU                   | Mo: 14 × < 0.05           | Combined data set on tree nuts (2), apricots (4), peaches (2), kiwi (2) and bananas (4), showing no residue in orchard trees (Germany, 2015, 2017) | 0.05*<sup>e</sup> | < 0.05                    | < 0.05                          | 1<sup>g</sup>                     | (1)<sup>h</sup> |
|                       | RA: 14 × < 0.125          |                                                                                               |                                             |                       |                                 |                                   |         |
| Table grapes          | NEU                       | Combined data set of trials on grapes compliant with GAP, performed at more critical GAP (1 × 3.6–11 kg/ha, PHI 7 days) or with PHI within 25% deviation (10 days instead of 14 days) (Germany, 2015, 2019). Single positive finding from NEU disregarded as may be avoided provided that proper equipment is used | 0.05*<sup>e</sup> | < 0.05                    | < 0.05                          | 1<sup>g</sup>                     | (1)<sup>h</sup> |
|                       | Mo: 12 × < 0.05           |                                                                                               |                                             |                       |                                 |                                   |         |
|                       | RA: 12 × < 0.125          |                                                                                               |                                             |                       |                                 |                                   |         |
| SEU                   | Mo: 8 × < 0.05            | Trials on grapes compliant with GAP for table and wine grapes (Germany, 2017)                   | 0.05*<sup>e</sup> | < 0.05                    | < 0.05                          | 1<sup>g</sup>                     | (1)<sup>h</sup> |
|                       | RA: 8 × < 0.125           |                                                                                               |                                             |                       |                                 |                                   |         |
| Crop          | Region/indoor(a) | Residue levels observed in the supervised residue trials relevant to the supported GAPs (mg/kg) | Recommendations/comments (OECD calculations) | MRL proposals (mg/kg) | HR_{Mo} (mg/kg)(b) | STMR_{Mo} (mg/kg)(c) | CF(d) |
|--------------|------------------|-------------------------------------------------------------------------------------------------|---------------------------------------------|----------------------|------------------|---------------------|------|
| Wine grapes  | NEU              | **Mo:** 9 x < 0.05 RA: 9 x < 0.125                                                              | Trials on grapes compliant with GAP or overdosed (11 kg/ha) (Germany, 2019) | 0.05*(0.2*)(f)      | < 0.05 (< 0.2)  | < 0.05 (< 0.2)      | 1(g) |
|              | SEU              | **Mo:** 8 x < 0.05 RA: 8 x < 0.125                                                              | Trials on grapes compliant with GAP for table and wine grapes (Germany, 2017) | 0.05*(0.2*)(f)      | < 0.05 (< 0.2)  | < 0.05 (< 0.2)      | 1(g) |
| Strawberries | NEU              | –                                                                                                | A no residue situation can be anticipated based on metabolism study, provided that proper equipment is used to avoid spray drift. However, this should be confirmed by at least two residue trials | 0.05*(0.2*)(f)(i)  | < 0.05 (< 0.2)  | < 0.05 (< 0.2)      | 1(g) |
|              | SEU              | –                                                                                                | A no residue situation can be anticipated based on metabolism study, provided that proper equipment is used to avoid spray drift. However, this should be confirmed by at least two residue trials | 0.05*(0.2*)(f)(i)  | < 0.05 (< 0.2)  | < 0.05 (< 0.2)      | 1(g) |
|              | EU               | –                                                                                                | A no residue situation can be anticipated based on metabolism study, provided that proper equipment is used to avoid spray drift. However, this should be confirmed by at least two residue trials | 0.05*(0.2*)(f)(i)  | < 0.05 (< 0.2)  | < 0.05 (< 0.2)      | 1(g) |
| Cane fruits  | NEU              | –                                                                                                | A no residue situation can be anticipated based on metabolism study, provided that proper equipment is used to avoid spray drift. However, this should be confirmed by at least two residue trials | 0.05*(0.2*)(f)(i)  | < 0.05 (< 0.2)  | < 0.05 (< 0.2)      | 1(g) |
|              | SEU              | –                                                                                                | A no residue situation can be anticipated based on metabolism study, provided that proper equipment is used to avoid spray drift. However, this should be confirmed by at least two residue trials | 0.05*(0.2*)(f)(i)  | < 0.05 (< 0.2)  | < 0.05 (< 0.2)      | 1(g) |
| Crop               | Region/ indoor\(^{(a)}\) | Residue levels observed in the supervised residue trials relevant to the supported GAPs (mg/kg) | Recommendations/comments (OECD calculations) | MRL proposals (mg/kg) | HR\(_{Mo}\) (mg/kg)\(^{(b)}\) | STMR\(_{Mo}\) (mg/kg)\(^{(c)}\) | CF\(^{(d)}\) |
|-------------------|-------------------------|---------------------------------------------------------------------------------------------|-------------------------------------------------|---------------------|-----------------------------|----------------------------|---------|
| EU                | –                       | Soil treatment performed at BBCH 00, i.e. before sowing, transplanting or after harvest; no residues are expected at harvest. However, this should be confirmed by at least two residue trials | 0.05\(^{*}\)\(^{(i)}\)\((0.2\times0.05)\)\(^{(f)}\)\((tentative)\) | < 0.05 (< 0.2) | < 0.05 (< 0.2) | 1\(^{(g)}\) \(1^{(h)}\) |
| Other small fruits and berries | NEU – | A no residue situation can be anticipated based on metabolism study, provided that proper equipment is used to avoid spray drift. However, this should be confirmed by at least two residue trials | 0.05\(^{*}\)\(^{(i)}\)\((0.2\times0.05)\)\(^{(f)}\)\((tentative)\) | < 0.05 (< 0.2) | < 0.05 (< 0.2) | 1\(^{(g)}\) \(1^{(h)}\) |
| SEU               | –                       | A no residue situation can be anticipated based on metabolism study, provided that proper equipment is used to avoid spray drift. However, this should be confirmed by at least two residue trials | 0.05\(^{*}\)\(^{(i)}\)\((0.2\times0.05)\)\(^{(f)}\)\((tentative)\) | < 0.05 (< 0.2) | < 0.05 (< 0.2) | 1\(^{(g)}\) \(1^{(h)}\) |
| Table olives      | NEU –                   | No data available. As olives can be picked from the soil, residue trials compliant with GAP are required | – | – | – | – |
| SEU               | Mo: 10 \times < 0.05 RA: 4 \times < 0.125 | Trials on olives compliant with GAP (Germany, 2015, 2017). Only samples from tree picked olives were considered, as specified in the GAP. Two positive findings (0.05 and 0.23 mg/kg) were disregarded as it is considered that they could be avoided if proper equipment is used (as for orchards). Some samples were stored up to 32 months but no degradation is expected to have occurred | 0.05\(^{*}\)\(^{(i)}\)\((0.2\times0.05)\)\(^{(f)}\) | < 0.05 (< 0.2) | < 0.05 (< 0.2) | 1\(^{(g)}\) \(1^{(h)}\) |
| Crop                      | Region/indoor(a) | Residue levels observed in the supervised residue trials relevant to the supported GAPs (mg/kg) | Recommendations/comments (OECD calculations)                                                                 | MRL proposals (mg/kg) | HR\textsubscript{Mo} (mg/kg)(b) | STMR\textsubscript{Mo} (mg/kg)(c) | CF(d) |
|--------------------------|------------------|------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------|-----------------------|---------------------------------|---------------------------------|-------|
| Figs/Kumquats/Kiwi fruits (green, red, yellow)/Kaki/Japanese persimmons/Litchis/lychees/Passionfruits/maracujas/Avocados/Mango/Papayas/Pomegranates/Cherimoyas | SEU               | \(\text{Mo: } 14 \times < 0.05\) \(\text{RA: } 14 \times < 0.125\) | Combined data set on tree nuts (2), apricots (4), peaches (2), kiwi (2) and bananas (3), showing no residue in orchard trees (Germany, 2015, 2017) | 0.05* \((0.2^*)^{(f)}\) | < 0.05 (< 0.2) | < 0.05 (< 0.2) | 1\(^{(g)}\) \(1^{(h)}\) |
| Bananas                  | SEU               | \(\text{Mo: } 14 \times < 0.05\) \(\text{RA: } 14 \times < 0.125\) | Combined data set on tree nuts (2), apricots (4), peaches (2), kiwi (2) and bananas (4), showing no residue in orchard trees (Germany, 2015, 2017) | 0.05* \((0.2^*)^{(f)}\) | < 0.05 (< 0.2) | < 0.05 (< 0.2) | 1\(^{(g)}\) \(1^{(h)}\) |
| Import (US)              | SEU               | \(\text{Mo: } 4 \times < 0.05\) \(\text{RA: } 4 \times < 0.125\) | Trials compliant with GAP (Germany, 2019) | 0.05* \((0.2^*)^{(f)}\) | < 0.05 (< 0.2) | < 0.05 (< 0.2) | 1\(^{(g)}\) \(1^{(h)}\) |
| Potatoes                 | NEU               | \(\text{Mo: } < 0.05; < 0.05; < 0.05; 0.07; 0.09; 0.21; 0.59\) \(\text{RA: } < 0.125; < 0.125; < 0.125; 0.145; 0.165; 0.285; 0.665\) | Trials on potatoes (Germany, 2017). Last 2 values are derived from trials with residues analysed at a longer PHI of 17–18 days. According to these results, it seems that longer PHIs may have an effect on the residues in tuber. It should be clarified if the northern GAP identified by the RMS can be considered as the most critical authorised MRL\textsubscript{OECD} = 0.95 | 1\(^{(i)}\) \(1^{(f)}(i)\) \(1^{(f)}(i)\) \(1^{(f)}(i)\) \((\text{tentative})\) | 0.59 \((0.71)\) | 0.07 \((< 0.2)\) | 1\(^{(g)}\) \(1^{(h)}\) |
|                         | SEU               | – | No data available. However, for local treatments by dabbing and rubbing a no residue situation can be anticipated | 0.05* \((0.2^*)^{(f)}\) | < 0.05 (< 0.2) | < 0.05 (< 0.2) | 1\(^{(g)}\) \(1^{(h)}\) |
| Crop                          | Region/indoor<sup>(a)</sup> | Residue levels observed in the supervised residue trials relevant to the supported GAPs (mg/kg) | Recommendations/comments (OECD calculations) | MRL proposals (mg/kg) | HR<sub>Mo</sub> (mg/kg)<sup>(b)</sup> | STMR<sub>Mo</sub> (mg/kg)<sup>(c)</sup> | CF<sup>(d)</sup> |
|------------------------------|-----------------------------|---------------------------------------------------------------------------------|---------------------------------------------------------------------------------|----------------------|--------------------------------|--------------------------------|----------|
| Sweet potatoes               | SEU                         | Soil treatment performed at early growth stage (BBCH 09). A no residue situation can be anticipated based on metabolism studies in primary and rotational crops. However, this should be confirmed by at least two residue trials | 0.05*<sup>(i)</sup> (0.2*<sup>(f,0)</sup> (tentative) | < 0.05 | < 0.05 | 1<sup>(g)</sup> (1)<sup>(h)</sup> |
| Yams Arrowroots Cassava roots/ manioc | SEU                        | A no residue situation can be anticipated based on metabolism studies in primary and rotational crops, provided that proper equipment is used to avoid spray drift. However, this should be confirmed by at least two residue trials | 0.05*<sup>(i)</sup> (0.2*<sup>(f,0)</sup> (tentative) | < 0.05 | < 0.05 | 1<sup>(g)</sup> (1)<sup>(h)</sup> |
| Beetroots Celeriacs/turnip rooted celeries Horseradishes Salsifies Swedes/ rutabagas Turnips roots | NEU                         | A no residue situation can be anticipated based on metabolism studies in primary and rotational crops, provided that proper equipment is used to avoid spray drift. However, this should be confirmed by at least two residue trials | 0.05*<sup>(i)</sup> (0.2*<sup>(f,0)</sup> (tentative) | < 0.05 | < 0.05 | 1<sup>(g)</sup> (1)<sup>(h)</sup> |
| Carrots                      | NEU                         | Soil treatment performed at early growth stage (BBCH 00). Available metabolism studies in primary and rotational crops indicate that a no residue situation can be anticipated for this GAP. However, this should be confirmed by at least two residue trials. It is noted that GAP compliant trials were available but could not be considered further since generated by using an analytical method not properly validated (2 x < 0.05; 0.07; Germany, 2015) | 0.05*<sup>(i)</sup> (0.2*<sup>(f,0)</sup> (tentative) | < 0.05 | < 0.05 | 1<sup>(g)</sup> (1)<sup>(h)</sup> |
| Carrots                      | SEU                         | A no residue situation can be anticipated based on metabolism studies in primary and rotational crops, provided that proper equipment is used to avoid spray drift. However, this should be confirmed by at least two residue trials | 0.05*<sup>(i)</sup> (0.2*<sup>(f,0)</sup> (tentative) | < 0.05 | < 0.05 | 1<sup>(g)</sup> (1)<sup>(h)</sup> |
| Carrots                      | SEU                         | No data available. However, for local treatments by dabbing and rubbing, a no residue situation can be anticipated | 0.05*<sup>(i)</sup> (0.2*<sup>(f,0)</sup> (tentative) | < 0.05 | < 0.05 | 1<sup>(g)</sup> (1)<sup>(h)</sup> |

<sup>(a)</sup> Region: SEU = Southern European Union, NEU = Northern European Union; Indoor crop: yes or no.

<sup>(b)</sup> HR<sub>Mo</sub>:Highest residue allowed in primary crops.

<sup>(c)</sup> STMR<sub>Mo</sub>:Summary tier maximum residue allowed in non-primary crops.

<sup>(d)</sup> CF: Conversion factor for the MRL.

<sup>(e)</sup> tentative

<sup>(f)</sup> Germany, 2015

<sup>(g)</sup> < 0.05

<sup>(h)</sup> 1

* Indicates that the residue level is lower than the limit of quantification.
| Crop | Region/indoor\(^{(a)}\) | Residue levels observed in the supervised residue trials relevant to the supported GAPs (mg/kg) | Recommendations/comments (OECD calculations) | MRL proposals (mg/kg) | HR\(_{Mo}\) (mg/kg)\(^{(b)}\) | STMR\(_{Mo}\) (mg/kg)\(^{(c)}\) | CF\(^{(d)}\) |
|------|------------------|-------------------------------------------------------------------------------------------------|-------------------------------------|----------------------|-------------------|------------------|-------|
| Jerusalem artichokes<br>Parsnips<br>Parsley roots/Hamburg roots<br>Radishes | NEU -- | A no residue situation can be anticipated based on metabolism studies in primary and rotational crops, provided that proper equipment is used to avoid spray drift. However, this should be confirmed by at least two residue trials | | 0.05\(^{(i)}\)<br>(0.2\(^{*}\))\(^{(i)}\)<br>(tentative) | < 0.05<br>(< 0.2) | < 0.05<br>(< 0.2) | 1\(^{(g)}\) \((\frac{1}{1})\)\(^{(h)}\) |
| | SEU -- | A no residue situation can be anticipated based on metabolism studies in primary and rotational crops, provided that proper equipment is used to avoid spray drift. However, this should be confirmed by at least two residue trials | | 0.05\(^{(i)}\)<br>(0.2\(^{*}\))\(^{(i)}\)<br>(tentative) | < 0.05<br>(< 0.2) | < 0.05<br>(< 0.2) | 1\(^{(g)}\) \((\frac{1}{1})\)\(^{(h)}\) |
| Turnip tops | NEU -- | A no residue situation can be anticipated based on metabolism studies in primary and rotational crops, provided that proper equipment is used to avoid spray drift. However, this should be confirmed by at least two residue trials | | 0.05\(^{(i)}\)<br>(0.2\(^{*}\))\(^{(i)}\)<br>(tentative) | < 0.05<br>(< 0.2) | < 0.05<br>(< 0.2) | 1\(^{(g)}\) \((\frac{1}{1})\)\(^{(h)}\) |
| | SEU -- | Soil treatment performed at BBCH 00. Metabolism studies in primary and rotational crops indicate that no translocation from roots to leaves is expected. A no residue situation can be anticipated. However, this should be confirmed by at least two residue trials | | 0.05\(^{(i)}\)<br>(0.2\(^{*}\))\(^{(i)}\)<br>(tentative) | < 0.05<br>(< 0.2) | < 0.05<br>(< 0.2) | 1\(^{(g)}\) \((\frac{1}{1})\)\(^{(h)}\) |
| Garlic<br>Onions<br>Shalots | NEU -- | A no residue situation can be anticipated based on metabolism studies in primary and rotational crops, provided that proper equipment is used to avoid spray drift. However, this should be confirmed by at least two residue trials | | 0.05\(^{(i)}\)<br>(0.2\(^{*}\))\(^{(i)}\)<br>(tentative) | < 0.05<br>(< 0.2) | < 0.05<br>(< 0.2) | 1\(^{(g)}\) \((\frac{1}{1})\)\(^{(h)}\) |
| | SEU -- | Soil treatment performed at early growth stage (BBCH 09). A no residue situation can be anticipated based on metabolism studies in primary and rotational crops. However, this should be confirmed by at least two residue trials | | 0.05\(^{(i)}\)<br>(0.2\(^{*}\))\(^{(i)}\)<br>(tentative) | < 0.05<br>(< 0.2) | < 0.05<br>(< 0.2) | 1\(^{(g)}\) \((\frac{1}{1})\)\(^{(h)}\) |
| Crop                          | Region/indoor<sup>(a)</sup> | Residue levels observed in the supervised residue trials relevant to the supported GAPs (mg/kg) | Recommendations/comments (OECD calculations) | MRL proposals (mg/kg) | HR<sub>M<sub>0</sub></sub> (mg/kg)<sup>(b)</sup> | STMR<sub>M<sub>0</sub></sub> (mg/kg)<sup>(c)</sup> | CF<sup>(d)</sup> |
|--------------------------------|-----------------------------|-------------------------------------------------------------------|-------------------------------------------|-----------------------|-----------------------------|-----------------------------|----------------|
| EU                            | --                          | A no residue situation can be anticipated based on metabolism studies in primary and rotational crops, provided that proper equipment is used to avoid spray drift. However, this should be confirmed by at least two residue trials | 0.05*<sup>(i)</sup> (0.2*)<sup>(m,o)</sup> (tentative) | < 0.05 (< 0.2) | < 0.05 (< 0.2) | 1<sup>(g)</sup> | 1<sup>(h)</sup> |
| Spring onions/ green onions and Welsh onions Leeks | NEU                         | A no residue situation can be anticipated based on metabolism studies in primary and rotational crops, provided that proper equipment is used to avoid spray drift. However, this should be confirmed by at least two residue trials | 0.05*<sup>(i)</sup> (0.2*)<sup>(m,o)</sup> (tentative) | < 0.05 (< 0.2) | < 0.05 (< 0.2) | 1<sup>(g)</sup> | 1<sup>(h)</sup> |
| SEU                           | --                          | A no residue situation can be anticipated based on metabolism studies in primary and rotational crops, provided that proper equipment is used to avoid spray drift. However, this should be confirmed by at least two residue trials | 0.05*<sup>(i)</sup> (0.2*)<sup>(m,o)</sup> (tentative) | < 0.05 (< 0.2) | < 0.05 (< 0.2) | 1<sup>(g)</sup> | 1<sup>(h)</sup> |
| EU                            | --                          | A no residue situation can be anticipated based on metabolism studies in primary and rotational crops, provided that proper equipment is used to avoid spray drift. However, this should be confirmed by at least two residue trials | 0.05*<sup>(i)</sup> (0.2*)<sup>(m,o)</sup> (tentative) | < 0.05 (< 0.2) | < 0.05 (< 0.2) | 1<sup>(g)</sup> | 1<sup>(h)</sup> |
| Tomatoes Aubergines/ eggplants | NEU                         | A no residue situation can be anticipated based on metabolism study in primary and rotational crops, provided that proper equipment is used to avoid spray drift. However, this should be confirmed by at least two residue trials | 0.05*<sup>(i)</sup> (0.2*)<sup>(m,o)</sup> (tentative) | < 0.05 (< 0.2) | < 0.05 (< 0.2) | 1<sup>(g)</sup> | 1<sup>(h)</sup> |
| SEU                           | --                          | No data available. However for local treatments by dabbing and rubbing, a no residue situation can be anticipated | 0.05*<sup>(i)</sup> (0.2*)<sup>(m,o)</sup> | < 0.05 (< 0.2) | < 0.05 (< 0.2) | 1<sup>(g)</sup> | 1<sup>(h)</sup> |
| EU                            | --                          | A no residue situation can be anticipated based on metabolism studies in primary and rotational crops, provided that proper equipment is used to avoid spray drift. However, this should be confirmed by at least two residue trials | 0.05*<sup>(i)</sup> (0.2*)<sup>(m,o)</sup> (tentative) | < 0.05 (< 0.2) | < 0.05 (< 0.2) | 1<sup>(g)</sup> | 1<sup>(h)</sup> |
| Crop                      | Region/indoor<sup>(a)</sup> | Residue levels observed in the supervised residue trials relevant to the supported GAPs (mg/kg) | Recommendations/comments (OECD calculations) | MRL proposals (mg/kg) | HR<sub>MO</sub> (mg/kg)<sup>(b)</sup> | STMR<sub>MO</sub> (mg/kg)<sup>(c)</sup> | CF<sup>(d)</sup> |
|--------------------------|-----------------------------|------------------------------------------------------------------------------------------------|-----------------------------------------------|-----------------------|-------------------------------------|-------------------------------------|-------------|
| Sweet peppers/bell peppers | NEU                         | A no residue situation can be anticipated based on metabolism studies in primary and rotational crops, provided that proper equipment is used to avoid spray drift. However, this should be confirmed by at least two residue trials | 0.05*<sup>(i)</sup> (0.2*<sup>(f)</sup>)<sup>(i)</sup> (tentative) | < 0.05 (< 0.2) | < 0.05 (< 0.2) | 1<sup>(g)</sup> (1)<sup>(h)</sup> |
|                          | SEU                         | A no residue situation can be anticipated based on metabolism studies in primary and rotational crops, provided that proper equipment is used to avoid spray drift. However, this should be confirmed by at least two residue trials | 0.05*<sup>(i)</sup> (0.2*<sup>(f)</sup>)<sup>(i)</sup> (tentative) | < 0.05 (< 0.2) | < 0.05 (< 0.2) | 1<sup>(g)</sup> (1)<sup>(h)</sup> |
|                          | EU                          | A no residue situation can be anticipated based on metabolism studies in primary and rotational crops, provided that proper equipment is used to avoid spray drift. However, this should be confirmed by at least two residue trials | 0.05*<sup>(i)</sup> (0.2*<sup>(f)</sup>)<sup>(i)</sup> (tentative) | < 0.05 (< 0.2) | < 0.05 (< 0.2) | 1<sup>(g)</sup> (1)<sup>(h)</sup> |
| Okra/lady’s fingers      | SEU                         | A no residue situation can be anticipated based on metabolism studies in primary and rotational crops, provided that proper equipment is used to avoid spray drift. However, this should be confirmed by at least two residue trials | 0.05*<sup>(i)</sup> (0.2*<sup>(f)</sup>)<sup>(i)</sup> (tentative) | < 0.05 (< 0.2) | < 0.05 (< 0.2) | 1<sup>(g)</sup> (1)<sup>(h)</sup> |
|                          | EU                          | A no residue situation can be anticipated based on metabolism studies in primary and rotational crops, provided that proper equipment is used to avoid spray drift. However, this should be confirmed by at least two residue trials | 0.05*<sup>(i)</sup> (0.2*<sup>(f)</sup>)<sup>(i)</sup> (tentative) | < 0.05 (< 0.2) | < 0.05 (< 0.2) | 1<sup>(g)</sup> (1)<sup>(h)</sup> |
| Cucurbits with edible and inedible peel | NEU                         | A no residue situation can be anticipated based on metabolism study in primary and rotational crops, provided that proper equipment is used to avoid spray drift. However, this should be confirmed by at least two residue trials | 0.05*<sup>(i)</sup> (0.2*<sup>(f)</sup>)<sup>(i)</sup> (tentative) | < 0.05 (< 0.2) | < 0.05 (< 0.2) | 1<sup>(g)</sup> (1)<sup>(h)</sup> |
| Crop                | Region/ indoor(a) | Residue levels observed in the supervised residue trials relevant to the supported GAPs (mg/kg) | Recommendations/comments (OECD calculations) | MRL proposals (mg/kg) | HRMo(mg/kg)(b) | STMRMo(mg/kg)(c) | CF(d) |
|---------------------|-------------------|------------------------------------------------------------------------------------------------|-----------------------------------------------|-----------------------|----------------|----------------|-------|
| SEU                 | --                | A no residue situation can be anticipated based on metabolism studies in primary and rotational crops, provided that proper equipment is used to avoid spray drift. However, this should be confirmed by at least two residue trials | 0.05*(i) (0.2*)(f),(i) (tentative) | < 0.05 (< 0.2) | < 0.05 (< 0.2) | 1(g)       |       |
| Broccoli cauliflowers | NEU               | A no residue situation can be anticipated based on metabolism study in primary and rotational crops, provided that proper equipment is used to avoid spray drift. However, this should be confirmed by at least two residue trials | 0.05*(i) (0.2*)(f),(i) (tentative) | < 0.05 (< 0.2) | < 0.05 (< 0.2) | 1(g)       |       |
| SEU                 | --                | Application on soil before seedling, transplanting and after harvest (i.e. BBCH 00). Available metabolism studies in primary and rotational crops indicate that a no residue situation can be anticipated for this GAP. However, this should be confirmed by at least two residue trials | 0.05*(i) (0.2*)(f),(i) (tentative) | < 0.05 (< 0.2) | < 0.05 (< 0.2) | 1(g)       |       |
| EU                  | --                | Application on soil before seedling, transplanting and after harvest (i.e. BBCH 00). Available metabolism studies in primary and rotational crops indicate that a no residue situation can be anticipated for this GAP. However, this should be confirmed by at least two residue trials | 0.05*(i) (0.2*)(f),(i) (tentative) | < 0.05 (< 0.2) | < 0.05 (< 0.2) | 1(g)       |       |
| Brussels sprouts    | NEU               | A no residue situation can be anticipated based on metabolism study in primary and rotational crops, provided that proper equipment is used to avoid spray drift. However, this should be confirmed by at least two residue trials | 0.05*(i) (0.2*)(f),(i) (tentative) | < 0.05 (< 0.2) | < 0.05 (< 0.2) | 1(g)       |       |
| Head cabbages       |                   |                                                                                               |                                               |                       |                |                |       |
| Crop        | Region/indoor (a) | Residue levels observed in the supervised residue trials relevant to the supported GAPs (mg/kg)                                                                                                                                                                                                 | Recommendations/comments (OECD calculations)                                                                 | MRL proposals (mg/kg) | HR<sub>Mo</sub> (mg/kg)<sup>(b)</sup> | STMR<sub>Mo</sub> (mg/kg)<sup>(c)</sup> | CF<sup>(d)</sup> |
|------------|-------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|----------------------|-------------------------------------|-------------------------------------|-----------------|
| SEU        | –                 | Application on soil before seedling, transplanting and after harvest (i.e. BBCH 00). Available metabolism studies in primary and rotational crops indicate that a no residue situation can be anticipated for this GAP. However, this should be confirmed by at least two residue trials | 0.05*<sup>(e)</sup> (<0.2)*<sup>(f,g)</sup> (tentative)                                                                                                     | < 0.05 (< 0.2)       | < 0.05 (< 0.2)                     | 1<sup>(g)</sup>                        | (1)<sup>(h)</sup> |
| EU         | –                 | Application on soil before seedling, transplanting and after harvest (i.e. BBCH 00). Available metabolism studies in primary and rotational crops indicate that a no residue situation can be anticipated for this GAP. However, this should be confirmed by at least two residue trials | 0.05*<sup>(e)</sup> (<0.2)*<sup>(f,g)</sup> (tentative)                                                                                                     | < 0.05 (< 0.2)       | < 0.05 (< 0.2)                     | 1<sup>(g)</sup>                        | (1)<sup>(h)</sup> |
| Chinese cabbages/pet- tsai Kale | –                 | A no residue situation can be anticipated based on metabolism study in primary and rotational crops, provided that proper equipment is used to avoid spray drift. However, this should be confirmed by at least two residue trials | 0.05*<sup>(e)</sup> (<0.2)*<sup>(f,g)</sup> (tentative)                                                                                                     | < 0.05 (< 0.2)       | < 0.05 (< 0.2)                     | 1<sup>(g)</sup>                        | (1)<sup>(h)</sup> |
| SEU        | –                 | A no residue situation can be anticipated based on metabolism studies in primary and rotational crops, provided that proper equipment is used to avoid spray drift. However, this should be confirmed by at least two residue trials | 0.05*<sup>(e)</sup> (<0.2)*<sup>(f,g)</sup> (tentative)                                                                                                     | < 0.05 (< 0.2)       | < 0.05 (< 0.2)                     | 1<sup>(g)</sup>                        | (1)<sup>(h)</sup> |
| EU         | –                 | Application on soil before seedling, transplanting and after harvest (i.e. BBCH 00). Available metabolism studies in primary and rotational crops indicate that a no residue situation can be anticipated for this GAP. However, this should be confirmed by at least two residue trials | 0.05*<sup>(e)</sup> (<0.2)*<sup>(f,g)</sup> (tentative)                                                                                                     | < 0.05 (< 0.2)       | < 0.05 (< 0.2)                     | 1<sup>(g)</sup>                        | (1)<sup>(h)</sup> |
### Table: Residue levels observed in the supervised residue trials relevant to the supported GAPs (mg/kg)

| Crop | Region/indoor(a) | Residue levels observed in the supervised residue trials relevant to the supported GAPs (mg/kg) | Recommendations/comments (OECD calculations) | MRL proposals (mg/kg) | HR<sub>M</sub>(mg/kg)<sup>(b)</sup> | STMR<sub>M</sub>(mg/kg)<sup>(c)</sup> | CF<sup>(d)</sup> |
|------|------------------|-----------------------------------------------------------------------------------------------|---------------------------------------------|----------------------|--------------------------------|--------------------------------|------------------|
| Kohlrabies | NEU | – | A no residue situation can be anticipated based on metabolism study in primary and rotational crops, provided that proper equipment is used to avoid spray drift. However, this should be confirmed by at least two residue trials<br>0.05*<sup>(i)</sup><br>(0.2*)<sup>(f),<i>(i)</i></sup><br>(tentative)<br><br>0.05*<sup>(i)</sup><br>(0.2*)<sup>(f),<i>(i)</i></sup><br>(tentative) | < 0.05<br>(< 0.2) | < 0.05<br>(< 0.2) | 1<sup>(g)</sup> | 1<sup>(h)</sup> |
| | SEU | – | Application on soil before seedling, transplanting and after harvest (i.e. BBCH 00). Available metabolism studies in primary and rotational crops indicate that a no residue situation can be anticipated for this GAP. However, this should be confirmed by at least two residue trials<br>0.05*<sup>(i)</sup><br>(0.2*)<sup>(f),<i>(i)</i></sup><br>(tentative)<br><br>0.05*<sup>(i)</sup><br>(0.2*)<sup>(f),<i>(i)</i></sup><br>(tentative) | < 0.05<br>(< 0.2) | < 0.05<br>(< 0.2) | 1<sup>(g)</sup> | 1<sup>(h)</sup> |
| | EU | – | Application on soil before seedling, transplanting and after harvest (i.e. BBCH 00). Available metabolism studies in primary and rotational crops indicate that a no residue situation can be anticipated for this GAP. However, this should be confirmed by at least two residue trials<br>0.05*<sup>(i)</sup><br>(0.2*)<sup>(f),<i>(i)</i></sup><br>(tentative)<br><br>0.05*<sup>(i)</sup><br>(0.2*)<sup>(f),<i>(i)</i></sup><br>(tentative) | < 0.05<br>(< 0.2) | < 0.05<br>(< 0.2) | 1<sup>(g)</sup> | 1<sup>(h)</sup> |
| Lamb's lettuces/corn salads | NEU | – | A no residue situation can be anticipated based on metabolism study in primary and rotational crops, provided that proper equipment is used to avoid spray drift. However, this should be confirmed by at least two residue trials<br>0.05*<sup>(i)</sup><br>(0.2*)<sup>(f),<i>(i)</i></sup><br>(tentative)<br><br>0.05*<sup>(i)</sup><br>(0.2*)<sup>(f),<i>(i)</i></sup><br>(tentative) | < 0.05<br>(< 0.2) | < 0.05<br>(< 0.2) | 1<sup>(g)</sup> | 1<sup>(h)</sup> |
| | SEU | – | Application on soil before seedling, transplanting and after harvest (i.e. BBCH 00). Available metabolism studies in primary and rotational crops indicate that a no residue situation can be anticipated for this GAP. However, this should be confirmed by at least two residue trials<br>0.05*<sup>(i)</sup><br>(0.2*)<sup>(f),<i>(i)</i></sup><br>(tentative)<br><br>0.05*<sup>(i)</sup><br>(0.2*)<sup>(f),<i>(i)</i></sup><br>(tentative) | < 0.05<br>(< 0.2) | < 0.05<br>(< 0.2) | 1<sup>(g)</sup> | 1<sup>(h)</sup> |
| | EU | – | A no residue situation can be anticipated based on metabolism studies in primary and rotational crops, provided that proper equipment is used to avoid spray drift. However, this should be confirmed by at least two residue trials<br>0.05*<sup>(i)</sup><br>(0.2*)<sup>(f),<i>(i)</i></sup><br>(tentative)<br><br>0.05*<sup>(i)</sup><br>(0.2*)<sup>(f),<i>(i)</i></sup><br>(tentative) | < 0.05<br>(< 0.2) | < 0.05<br>(< 0.2) | 1<sup>(g)</sup> | 1<sup>(h)</sup> |
| Crop | Region/indoor\(^{(a)}\) | Residue levels observed in the supervised residue trials relevant to the supported GAPs (mg/kg) | Recommendations/comments (OECD calculations) | MRL proposals (mg/kg) | HR\(_{Mo}\) (mg/kg)\(^{(b)}\) | STMR\(_{Mo}\) (mg/kg)\(^{(c)}\) | CF\(^{(d)}\) |
|------|------------------------|-------------------------------------------------|-----------------------------------------------|-----------------------|----------------------------|--------------------------------|--------|
| Lettuces Escaroles/broad-leaved endives Cresses and other sprouts and shoots Land cresses Roman rocket/rucola Red mustards Baby leaf crops (including brassica species) Fresh herbs Purslanes Chards/beet leaves | NEU | A no residue situation can be anticipated based on metabolism study in primary and rotational crops, provided that proper equipment is used to avoid spray drift. However, this should be confirmed by at least two residue trials | 0.05*\(^{(i)}\) (0.2*)\(^{(f,0)}\) (tentative) | < 0.05 (< 0.2) | < 0.05 (< 0.2) | 1\(^{(g)}\) (1)\(^{(h)}\) |
| | SEU | A no residue situation can be anticipated based on metabolism studies in primary and rotational crops, provided that proper equipment is used to avoid spray drift. However, this should be confirmed by at least two residue trials | 0.05*\(^{(i)}\) (0.2*)\(^{(f,0)}\) (tentative) | < 0.05 (< 0.2) | < 0.05 (< 0.2) | 1\(^{(g)}\) (1)\(^{(h)}\) |
| | EU | A no residue situation can be anticipated based on metabolism studies in primary and rotational crops, provided that proper equipment is used to avoid spray drift. However, this should be confirmed by at least two residue trials | 0.05*\(^{(i)}\) (0.2*)\(^{(f,0)}\) (tentative) | < 0.05 (< 0.2) | < 0.05 (< 0.2) | 1\(^{(g)}\) (1)\(^{(h)}\) |
| Spinaches | NEU | A no residue situation can be anticipated based on metabolism study in primary and rotational crops, provided that proper equipment is used to avoid spray drift. However, this should be confirmed by at least two residue trials | 0.05*\(^{(i)}\) (0.2*)\(^{(f,0)}\) (tentative) | < 0.05 (< 0.2) | < 0.05 (< 0.2) | 1\(^{(g)}\) (1)\(^{(h)}\) |
| | SEU | Application on soil before seedling, transplanting and after harvest (i.e. BBCH 00). Available metabolism studies in primary and rotational crops indicate that a no residue situation can be anticipated for this GAP. However, this should be confirmed by at least two residue trials | 0.05*\(^{(i)}\) (0.2*)\(^{(f,0)}\) (tentative) | < 0.05 (< 0.2) | < 0.05 (< 0.2) | 1\(^{(g)}\) (1)\(^{(h)}\) |
| Crop                   | Region/indoor(a) | Residue levels observed in the supervised residue trials relevant to the supported GAPs (mg/kg) | Recommendations/comments (OECD calculations)                                                                 | MRL proposals (mg/kg) | HR_{Mo}(b) (mg/kg) | STMR_{Mo}(c) (mg/kg) | CF(d)  |
|-----------------------|------------------|---------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------|-----------------------|------------------|---------------------|--------|
| EU                    | –                | A no residue situation can be anticipated based on metabolism studies in primary and rotational crops, provided that proper equipment is used to avoid spray drift. However, this should be confirmed by at least two residue trials | 0.05*(f) *(0.2*)(f),(i) (tentative)                                                                 | < 0.05 (< 0.2)        | < 0.05 (< 0.2)    | 1(1)(h)             |
| Grape leaves and similar species | SEU | Application on soil before seedling, transplanting and after harvest (i.e. BBCH 00). Available metabolism studies in primary and rotational crops indicate that a no residue situation can be anticipated for this GAP. However, this should be confirmed by at least two residue trials | 0.05*(f) *(0.2*)(f),(i) (tentative)                                                                 | < 0.05 (< 0.2)        | < 0.05 (< 0.2)    | 1(1)(h)             |
| Watercresses          | NEU              | A no residue situation can be anticipated based on metabolism study in primary and rotational crops, provided that proper equipment is used to avoid spray drift. However, this should be confirmed by at least two residue trials | 0.05*(f) *(0.2*)(f),(i) (tentative)                                                                 | < 0.05 (< 0.2)        | < 0.05 (< 0.2)    | 1(1)(h)             |
| SEU                   | –                | Application on soil before seedling, transplanting and after harvest (i.e. BBCH 00). Available metabolism studies in primary and rotational crops indicate that a no residue situation can be anticipated for this GAP. However, this should be confirmed by at least two residue trials | 0.05*(f) *(0.2*)(f),(i) (tentative)                                                                 | < 0.05 (< 0.2)        | < 0.05 (< 0.2)    | 1(1)(h)             |
| EU                    | –                | Application on soil before seedling, transplanting and after harvest (i.e. BBCH 00). Available metabolism studies in primary and rotational crops indicate that a no residue situation can be anticipated for this GAP. However, this should be confirmed by at least two residue trials | 0.05*(f) *(0.2*)(f),(i) (tentative)                                                                 | < 0.05 (< 0.2)        | < 0.05 (< 0.2)    | 1(1)(h)             |
| Crop                  | Region/ indoor(a) | Residue levels observed in the supervised residue trials relevant to the supported GAPs (mg/kg) | Recommendations/comments (OECD calculations) | MRL proposals (mg/kg) | HR<sub>Mo</sub> (mg/kg)<sup>(b)</sup> | STMR<sub>Mo</sub> (mg/kg)<sup>(c)</sup> | CF<sup>(d)</sup> |
|----------------------|-------------------|-------------------------------------------------------------------------------------------------|---------------------------------------------|----------------------|----------------------------------------|----------------------------------------|----------------|
| Witloofs/Belgian endives | NEU   | Application during the field phase (root production) is not expected to lead to significant residues in harvested roots (based on metabolism studies in primary and rotational crops and provided that proper equipment is used to avoid spray drift). As only limited transfer from roots to leaves is expected, significant residues in witloof (after forcing phase) are unlikely. However, this should be confirmed by at least two residue trials | 0.05*<sup>(i)</sup><br>(0.2*)<sup>(f)</sup><br>(tentative)<br>(tentative) | < 0.05<br>(< 0.2) | < 0.05<br>(< 0.2) | 1<sup>(g)</sup><br>(1)<sup>(h)</sup> |
| SEU                  | --                | Application during the field phase (root production) before seeding (BBCH 00). Significant residues are not expected, neither in roots (at harvest) nor in witloof (after forcing phase). However, this should be confirmed by at least two residue trials | 0.05*<sup>(i)</sup><br>(0.2*)<sup>(f)</sup><br>(tentative) | < 0.05<br>(< 0.2) | < 0.05<br>(< 0.2) | 1<sup>(g)</sup><br>(1)<sup>(h)</sup> |
| Beans (with pods) Beans (without pods) Peas (with pods) Peas (without pods) Lentils (fresh) | NEU   | A no residue situation can be anticipated based on metabolism studies in primary and rotational crops, provided that proper equipment is used to avoid spray drift. However, this should be confirmed by at least two residue trials | 0.05*<sup>(i)</sup><br>(0.2*)<sup>(f)</sup><br>(tentative) | < 0.05<br>(< 0.2) | < 0.05<br>(< 0.2) | 1<sup>(g)</sup><br>(1)<sup>(h)</sup> |
| SEU                  | --                | No data available. However for local treatments by dabbing and rubbing, a no residue situation can be anticipated | 0.05*<sup>(i)</sup><br>(0.2*)<sup>(f)</sup><br>(tentative) | < 0.05<br>(< 0.2) | < 0.05<br>(< 0.2) | 1<sup>(g)</sup><br>(1)<sup>(h)</sup> |
| EU                   | --                | A no residue situation can be anticipated based on metabolism studies in primary and rotational crops, provided that proper equipment is used to avoid spray drift. However, this should be confirmed by at least two residue trials | 0.05*<sup>(i)</sup><br>(0.2*)<sup>(f)</sup><br>(tentative) | < 0.05<br>(< 0.2) | < 0.05<br>(< 0.2) | 1<sup>(g)</sup><br>(1)<sup>(h)</sup> |
| Cardoons Celeries Florence fennels Rhubarbs | NEU   | A no residue situation can be anticipated based on metabolism studies in primary and rotational crops, provided that proper equipment is used to avoid spray drift. However, this should be confirmed by at least two residue trials | 0.05*<sup>(i)</sup><br>(0.2*)<sup>(f)</sup><br>(tentative) | < 0.05<br>(< 0.2) | < 0.05<br>(< 0.2) | 1<sup>(g)</sup><br>(1)<sup>(h)</sup> |
| Crop | Region/ indoor\(^{(a)}\) | Residue levels observed in the supervised residue trials relevant to the supported GAPs (mg/kg) | Recommendations/comments (OECD calculations) | MRL proposals (mg/kg) | HR\(_{Mo}\) (mg/kg)\(^{(b)}\) | STMR\(_{Mo}\) (mg/kg)\(^{(c)}\) | CF\(^{(d)}\) |
|------|--------------------------|-------------------------------------------------|---------------------------------------------|-----------------------|---------------------|---------------------|------|
| SEU  | –                        | A no residue situation can be anticipated based on metabolism studies in primary and rotational crops, provided that proper equipment is used to avoid spray drift. However, this should be confirmed by at least two residue trials | 0.05*\(^{(i)}\) \((0.2\times)^{(f),(o)}\) \((tentative)\) | < 0.05 \(< 0.2\) | < 0.05 \(< 0.2\) | 1\(^{(0)}\) \((1)^{(h)}\) |
| EU   | –                        | A no residue situation can be anticipated based on metabolism studies in primary and rotational crops, provided that proper equipment is used to avoid spray drift. However, this should be confirmed by at least two residue trials | 0.05*\(^{(i)}\) \((0.2\times)^{(f),(o)}\) \((tentative)\) | < 0.05 \(< 0.2\) | < 0.05 \(< 0.2\) | 1\(^{(0)}\) \((1)^{(h)}\) |
| Asparagus | NEU | Mo: < 0.05 RA: < 0.125 | Trial on asparagus compliant with GAP (Germany, 2017). A no residue situation can be anticipated based on metabolism studies in primary and rotational crops, provided that proper equipment is used to avoid spray drift. However, this should be confirmed by at least one additional trial | 0.05*\(^{(i)}\) \((0.2\times)^{(f),(o)}\) \((tentative)\) | < 0.05 \(< 0.2\) | < 0.05 \(< 0.2\) | 1\(^{(0)}\) \((1)^{(h)}\) |
| SEU  | –                        | A no residue situation can be anticipated based on metabolism studies in primary and rotational crops, provided that proper equipment is used to avoid spray drift. However, this should be confirmed by at least two residue trials | 0.05*\(^{(i)}\) \((0.2\times)^{(f),(o)}\) \((tentative)\) | < 0.05 \(< 0.2\) | < 0.05 \(< 0.2\) | 1\(^{(0)}\) \((1)^{(h)}\) |
| EU   | –                        | A no residue situation can be anticipated based on metabolism studies in primary and rotational crops, provided that proper equipment is used to avoid spray drift. However, this should be confirmed by at least two residue trials | 0.05*\(^{(i)}\) \((0.2\times)^{(f),(o)}\) \((tentative)\) | < 0.05 \(< 0.2\) | < 0.05 \(< 0.2\) | 1\(^{(0)}\) \((1)^{(h)}\) |
| Globe artichokes | NEU | –                        | A no residue situation can be anticipated based on metabolism study in primary and rotational crops, provided that proper equipment is used to avoid spray drift. However, this should be confirmed by at least two residue trials | 0.05*\(^{(i)}\) \((0.2\times)^{(f),(o)}\) \((tentative)\) | < 0.05 \(< 0.2\) | < 0.05 \(< 0.2\) | 1\(^{(0)}\) \((1)^{(h)}\) |
| SEU  | –                        | No data available. However for local treatments by dabbing and rubbing a no residue situation can be anticipated | 0.05*\(^{(i)}\) \((0.2\times)^{(f)}\) | < 0.05 \(< 0.2\) | < 0.05 \(< 0.2\) | 1\(^{(0)}\) \((1)^{(h)}\) |
| Crop               | Region/indoor(a) | Residue levels observed in the supervised residue trials relevant to the supported GAPs (mg/kg) | Recommendations/comments (OECD calculations) | MRL proposals (mg/kg) | HR_{M0} (mg/kg)(b) | STMR_{M0} (mg/kg)(c) | CF(d) |
|--------------------|------------------|------------------------------------------------------------------------------------------------|--------------------------------------------|----------------------|-------------------|----------------------|-------|
| Bamboo shoots      | NEU              | A no residue situation can be anticipated based on metabolism study in primary and rotational crops, provided that proper equipment is used to avoid spray drift. However, this should be confirmed by at least two residue trials | 0.05*{(i)} (0.2*{(i)}(tentative)         | < 0.05 (0.2)        | < 0.05 (0.2)     | 1^{(i)}               |
|                    | SEU              | A no residue situation can be anticipated based on metabolism studies in primary and rotational crops, provided that proper equipment is used to avoid spray drift. However, this should be confirmed by at least two residue trials | 0.05*{(i)} (0.2*{(i)}(tentative)         | < 0.05 (0.2)        | < 0.05 (0.2)     | 1^{(i)}               |
|                    | EU               | A no residue situation can be anticipated based on metabolism studies in primary and rotational crops, provided that proper equipment is used to avoid spray drift. However, this should be confirmed by at least two residue trials | 0.05*{(i)} (0.2*{(i)}(tentative)         | < 0.05 (0.2)        | < 0.05 (0.2)     | 1^{(i)}               |
| Palm hearts        | NEU              | A no residue situation can be anticipated based on metabolism study in primary and rotational crops, provided that proper equipment is used to avoid spray drift. However, this should be confirmed by at least two residue trials | 0.05*{(i)} (0.2*{(i)}(tentative)         | < 0.05 (0.2)        | < 0.05 (0.2)     | 1^{(i)}               |
|                    | SEU              | A no residue situation can be anticipated based on metabolism studies in primary and rotational crops, provided that proper equipment is used to avoid spray drift. However, this should be confirmed by at least two residue trials | 0.05*{(i)} (0.2*{(i)}(tentative)         | < 0.05 (0.2)        | < 0.05 (0.2)     | 1^{(i)}               |
|                    | EU               | A no residue situation can be anticipated based on metabolism studies in primary and rotational crops, provided that proper equipment is used to avoid spray drift. However, this should be confirmed by at least two residue trials | 0.05*{(i)} (0.2*{(i)}(tentative)         | < 0.05 (0.2)        | < 0.05 (0.2)     | 1^{(i)}               |
| Cultivated fungi   | NEU              | No data available. Uptake from the soil and/or cross-contamination cannot be excluded for the authorised GAP (metabolism studies are not representative for fungi) | --                                         | --                   | --                | --                   |

Notes:
- **MRL proposals (mg/kg)**: The MRL proposals (mg/kg) are based on OECD calculations.
- **HR_{M0} (mg/kg)**: The HR_{M0} values are tentative (0.2*) (tentative).
- **STMR_{M0} (mg/kg)**: The STMR_{M0} values are tentative (0.2*) (tentative).
- **CF(d)**: The CF values are tentative (1*).

(a) Crop classification.
(b) Tentative values.
(c) Tentative values.
(d) Tentative values.

References:
- Review of the existing MRLs for glyphosate - revised version to take into account omitted data.
- www.efsa.europa.eu/efsajournal
| Crop | Region/ indoor(a) | Residue levels observed in the supervised residue trials relevant to the supported GAPs (mg/kg) | Recommendations/comments (OECD calculations) | MRL proposals (mg/kg) | HR$_{Mo}$ (mg/kg)(b) | STMR$_{Mo}$ (mg/kg)(c) | CF(d) |
|------|------------------|-------------------------------------------------|------------------------------------------|------------------|-----------------|------------------|---------|
| SEU  | –                | No data available. Uptake from the soil and/or cross-contamination cannot be excluded for the authorised GAP (metabolism studies are not representative for fungi) | –                                      | –                | –               | –                | –       |
| Wild fungi | NEU | –                | Authorised GAP is on forestry. A no residue situation can be anticipated for this GAP, provided that adequate risk mitigation measures are in place to avoid cross-contamination in wild fungi | 0.05* (0.2*)(f) | < 0.05 (< 0.2) | < 0.05 (< 0.2) | 1(g) |
| SEU  | –                | Authorised GAP is on forestry. A no residue situation can be anticipated for this GAP, provided that adequate risk mitigation measures are in place to avoid cross-contamination in wild fungi | 0.05* (0.2*)(f) | < 0.05 (< 0.2) | < 0.05 (< 0.2) | 1(g) |
| Beans (dry) Peas (dry) | NEU | Mo: < 0.05; < 0.05; < 0.05; < 0.05; < 0.05; < 0.05; < 0.05; < 0.05; < 0.05; 0.05; 0.08; 5.23; 0.50; 0.70; 3.25; 7.62 RA: < 0.125; < 0.125; < 0.125; < 0.125; < 0.125; < 0.125; < 0.125; < 0.125; < 0.125; 0.035; 0.24; 0.26 | Combined data set on beans and peas (Germany, 2017, 2019) MRL$_{OECD}$ = 9.79 | 10(j) (20)(f),(j) (tentative) | 7.62 (15.24) | 0.11 (0.22) | 2.0 (1)(h) |
| SEU  | –                | No data available. Uptake from the soil and/or cross-contamination cannot be excluded for the authorised GAP (metabolism studies are not representative for fungi) | –                                      | –                | –               | –                | –       |
| EU   | –                | No data available. However, application on soil before seedling, transplanting and after harvest (i.e. BBCH 00) is expected to be less critical than the northern outdoor and the import tolerance GAPs | –                                      | –                | –               | –                | –       |
| Import (US) | Mo: < 0.05; 0.07; 0.12; 0.23; 0.29; 0.35; 0.63; 1.0; 2.8; 3.8; 11 RA: < 0.125; 0.145; 0.195; 0.305; 0.365; 0.425; 0.635; 1.0; 1.1; 2.9; 3.9; 11.2 | Trials on dry beans performed with 2 applications instead of 1 deemed acceptable to support the GAP on dry beans and dry peas considering that the first application (at emergence) does not affect the final residue levels and that the application rate of the second treatment was within the 25% tolerance (Germany, 2019) MRL$_{OECD}$ = 14.32 | 15(j) (30)(f),(j) (tentative) | 11 (22) | 0.46 (0.91) | 1.2 (1)(h) |
| Crop                  | Region/indoor<sup>(a)</sup> | Residue levels observed in the supervised residue trials relevant to the supported GAPs (mg/kg) | Recommendations/comments (OECD calculations)                                                                 | MRL proposals (mg/kg) | $HR_{Mo}$ (mg/kg)<sup>(b)</sup> | STMR<sub>Mo</sub> (mg/kg)<sup>(c)</sup> | CF<sup>(d)</sup> |
|----------------------|----------------------------|---------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|-----------------------|---------------------------------|---------------------------------|---------|
| Lentils (dry)        | NEU                        | **Mo:** $<0.05; <0.05; <0.05; <0.05; 0.06; 0.08; 0.14; 0.30; 0.70; 0.23; 2.5; 7.62$<br>**RA:** $<0.125; <0.125; <0.125; <0.125; 0.135; 0.155; 0.215; 0.305; 2.6; 7.79$ | Direct extrapolation from combined data set on beans and peas (Germany, 2017, 2019) $\text{MRL}_{OECD} = 9.79$ | $10^{(f)}$
(20)<sup>(f),<sup>(i)</sup></br>(tentative) | 7.62
(15.24) | 0.11
(0.22) | 2.0
(1)<sup>(h)</sup> |
| SEU                  | --                         | No data available. However, application on soil before seedling, transplanting and after harvest (i.e. BBCH 00) is expected to be less critical than the northern outdoor GAP | --                                               | --                                               | --                                         | --                                         | -- |
| EU                   | --                         | No data available. However, application on soil before seedling, transplanting and after harvest (i.e. BBCH 00) is expected to be less critical than the northern outdoor GAP | --                                               | --                                               | --                                         | --                                         | -- |
| Import (US)          | NEU                        | **Mo:** $<0.05; <0.05; 1.4; 3.02$<br>**RA:** $<0.125; <0.125; 1.48; 3.1$ | Trials on lentils performed in USA/Canada compliant with GAP for desiccation (Germany, 2017). Storage stability not covered for AMPA (deemed as minor deficiency) $\text{MRL}_{OECD} = 6.78$ | 7 (15)<sup>(f)</sup> | 3.02
(5.4) | 0.73
(1.46) | 1.8
(1)<sup>(h)</sup> |
| Lupins/lupini beans (dry) | NEU | **Mo:** $<0.05; <0.05; <0.05; <0.05; 0.06; 0.08; 0.14; 0.30; 0.70; 0.23; 2.5; 7.62$<br>**RA:** $<0.125; <0.125; <0.125; <0.125; 0.135; 0.155; 0.215; 0.305; 2.6; 7.79$ | Direct extrapolation from combined data set on beans and peas (Germany, 2017, 2019) $\text{MRL}_{OECD} = 9.79$ | $10^{(f)}$
(20)<sup>(f),<sup>(i)</sup></br>(tentative) | 7.62
(15.24) | 0.11
(0.22) | 2.0
(1)<sup>(h)</sup> |
| SEU                  | --                         | No data available. However, application on soil before seedling, transplanting and after harvest (i.e. BBCH 00) is expected to be less critical than the northern outdoor GAP | --                                               | --                                               | --                                         | --                                         | -- |
| EU                   | --                         | No data available. However, application on soil before seedling, transplanting and after harvest (i.e. BBCH 00) is expected to be less critical than the northern outdoor GAP | --                                               | --                                               | --                                         | --                                         | -- |
| Crop          | Region/indoor(a) | Residue levels observed in the supervised residue trials relevant to the supported GAPs (mg/kg) | Recommendations/comments (OECD calculations) | MRL proposals (mg/kg) | HR<sub>Mo</sub> (mg/kg)(b) | STMR<sub>Mo</sub> (mg/kg)(c) | CF(d) |
|--------------|------------------|-------------------------------------------------------------------------------------------------|---------------------------------------------|-----------------------|--------------------------|-----------------------------|------|
| Linseeds     | NEU Mo: 0.06; 0.21; 0.23; 0.28; 0.35; 0.40; 0.40; 0.48; < 0.5; < 0.5; 0.57; 0.60; 0.60; 0.70; 0.90; 0.96; < 1.0; 1.0; 1.3; 1.5; 2.0; 2.0; 2.0; 2.8; 4.1; 4.6; 8.6; 11.6 RA: –; –; 0.29; 0.31; –; –; 0.42; 0.48; –; –; 0.68; 0.68; 0.78; < 0.8; < 0.8; 0.98; 1.0; 1.1; < 1.3; 1.3; 1.4; 1.8; 2.3; 2.5; 3.1; 4.6; 4.7; 8.5; 11.9 | Trials on rapeseed compliant with GAP for desiccation (Germany, 2017). Extrapolation from rapeseed to linseed is applicable MRL<sub>OECD</sub> = 12.13 | 15 (15)(f) | 11.60 (11.94) | 0.70 (1.14) | 1.1 | (1)(h) |
|              | SEU Mo: 0.23; 0.93; 1.4; 5.6 RA: 0.31; 1.0; 1.48; 5.7 | | | 15(i) | 5.60 (5.74) | 1.17 (1.28) | 1.1 | (1)(h) |
| Peanuts/groundnuts | NEU – | A no residue situation can be anticipated based on metabolism study in primary and rotational crops, provided that proper equipment is used to avoid spray drift. However, this should be confirmed by at least two residue trials | 0.05*(i) (0.2*)(f),(i) (tentative) | < 0.05 (< 0.2) | < 0.05 (< 0.2) | 1(g) | (1)(h) |
|              | SEU – | Application on soil before seedling, transplanting and after harvest (i.e. BBCH 00). Available metabolism studies in primary and rotational crops indicate that a no residue situation can be anticipated for this GAP. However, this should be confirmed by at least two residue trials | 0.05*(i) (0.2*)(f),(i) (tentative) | < 0.05 (< 0.2) | < 0.05 (< 0.2) | 1(g) | (1)(h) |
| Poppy seeds | NEU – | A no residue situation can be anticipated based on metabolism study in primary and rotational crops, provided that proper equipment is used to avoid spray drift. However, this should be confirmed by at least two residue trials | 0.05*(i) (0.2*)(f),(i) (tentative) | < 0.05 (< 0.2) | < 0.05 (< 0.2) | 1(g) | (1)(h) |
| Crop               | Region/indoor(a) | Residue levels observed in the supervised residue trials relevant to the supported GAPs (mg/kg) | Recommendations/comments (OECD calculations)                                                                 | MRL proposals (mg/kg) | HR<sub>M0</sub> (mg/kg)(b) | STMR<sub>M0</sub> (mg/kg)(c) | CF(d) |
|-------------------|------------------|-----------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|-----------------------|-----------------------------|-----------------------------|-------|
| Sunflower seeds   | SEU              | –                                                                                             | Soil treatment performed at early growth stage (BBCH 09). No residues are expected. Available metabolism studies in primary and rotational crops indicate that no residue situation can be anticipated for this GAP. However, this should be confirmed by at least two residue trials | 0.05*(i)             | < 0.05                      | < 0.05                      | 1(g) |
|                   | NEU              | **Mo:** 2 < 0.5; < 0.05; 0.05; 0.79; 1.5; 1.8; 3.9; 6.9; 16.4<br>**RA:** 1.6; < 0.125; < 0.125; < 0.125; < 0.125; < 0.125; < 0.125 | Trials on sunflower seed compliant with GAP for desiccation, (Germany, 2017, 2019). MRL<sub>OECD</sub> = 23.61 | 30(i)                | 16.4                        | 1.15                         | 1.1(k) |
|                   | Import (US)      | –                                                                                             | No data available to support the GAP for desiccation                                                                 | –                     | –                           | –                           | –     |
| Mustard seeds     | SEU              | –                                                                                             | No data compliant with GAP for desiccation. No extrapolation possible from rapeseed as the GAP reported for mustard seed is more critical (PHI 7 days instead of 14 days) | –                     | –                           | –                           | –     |
|                   | NEU              | –                                                                                             | No data compliant with GAP for desiccation. No extrapolation possible from rapeseed as the GAP reported for mustard seed is more critical (PHI 8 days instead of 14 days) | –                     | –                           | –                           | –     |
| Sesame seeds      | NEU              | –                                                                                             | A no residue situation can be anticipated based on metabolism study in primary and rotational crops, provided that proper equipment is used to avoid spray drift. However, this should be confirmed by at least two residue trials | 0.05*(i)             | < 0.05                      | < 0.05                      | 1(g) |
|                   | Import (US)      | –                                                                                             | –                                                                                                                   | –                     | –                           | –                           | –     |
| Pumpkin seeds     | SEU              | –                                                                                             | Application on soil before seeding, transplanting and after harvest (i.e. BBCH 00). Available metabolism studies in primary and rotational crops indicate that a no residue situation can be anticipated for this GAP. However, this should be confirmed by at least two residue trials | 0.05*(i)             | < 0.05                      | < 0.05                      | 1(g) |
| Safflower seeds   | NEU              | –                                                                                             | –                                                                                                                   | –                     | –                           | –                           | –     |
| Gold of pleasure  | SEU              | –                                                                                             | –                                                                                                                   | –                     | –                           | –                           | –     |
| Hemp seeds        | –                | –                                                                                             | –                                                                                                                   | –                     | –                           | –                           | –     |
| Castor beans      | –                | –                                                                                             | –                                                                                                                   | –                     | –                           | –                           | –     |
| Crop                      | Region/ indoor<sup>(a)</sup> | Residue levels observed in the supervised residue trials relevant to the supported GAPs (mg/kg) | Recommendations/comments (OECD calculations)                                                                 | MRL proposals (mg/kg) | HR<sub>Mo</sub> (mg/kg)<sup>(b)</sup> | STMR<sub>Mo</sub> (mg/kg)<sup>(c)</sup> | CF<sup>(d)</sup> |
|--------------------------|-------------------------------|-------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|-----------------------|-------------------------------------|---------------------------------------|-------------|
| Borage seeds             | NEU                           | **Mo**: 0.06; 0.3; 0.3; 2 × 0.4; 0.04; 0.6; 0.7; 0.9; 1.0; 1.3; 2.8; 5.1; 6.8<br>**RA**: 0.11; 0.35; 0.35; 2 × 0.45; 0.045; 0.65; 0.75; 0.95; 1.05; 1.35; 2.85; 5.15; 6.85 | Trials on rapeseeds compliant with the GAP for borage seeds (United Kingdom, 2015)<br>Underlined values: samples with no information on storage conditions. Since results were in the range of the other trials, the lack of information is considered a minor deficiency and accepted. Only five trials analysed for AMPA (5 × < 0.05) which is expected to remain < LOQ<br>MRL<sub>OECD</sub> = 9.6 | 10<br>(10)<sup>(f)</sup> | 6.80<br>(6.85) | 0.65<br>(0.70) | 1<sup>(g)</sup> |
| SEU                      | –                             | Application on soil before seedling, transplanting and after harvest (i.e. BBCH 00). Available metabolism studies in primary and rotational crops indicate that a no residue situation can be anticipated for this GAP and this should be in principle confirmed by at least two residue trials. Nevertheless, as the NEU is clearly more critical, no additional trials supporting the SEU GAP are required | 0.05*<sup>(i)</sup> (0.2*<sup>(f),(i)</sup> (tentative) | < 0.05<br>(< 0.2) | < 0.05<br>(< 0.2) | –<sup>(h)</sup> | 1<sup>(g)</sup> |
| Olives for oil production | NEU                           | No data available. As olives can be picked from the soil, residue trials compliant with GAP are required | – | – | – | – | – |
| SEU                      | –                             | Trials on olives compliant with GAP for soil applications (Germany, 2015, 2017). Samples from ground picked olives were considered (in accordance with possible practices). In all trials analysing for AMPA, this metabolite is < LOQ. Samples stored for up to 32 months but no degradation is expected to have occurred MRL<sub>OECD</sub> = 21.45 | 30<br>(30)<sup>(f)</sup> | 16.00<br>(16.1) | 0.42<br>(0.53) | 1<sup>(g)</sup> |
| Oil palms kernels        | SEU                           | Residues are not expected in palm oil kernal after soil treatment on this crop (kernel is not directly exposed to possible spray drift and limited translocation has been observed in the metabolism studies) | 0.05*<sup>(e)</sup> (0.2*<sup>(f)</sup>) | < 0.05<br>(< 0.2) | < 0.05<br>(< 0.2) | –<sup>(h)</sup> | 1<sup>(g)</sup> |
| Crop                  | Region/indoor<sup>(a)</sup> | Residue levels observed in the supervised residue trials relevant to the supported GAPs (mg/kg) | Recommendations/comments (OECD calculations) | MRL proposals (mg/kg) | HR<sub>Mo</sub> (mg/kg)<sup>(b)</sup> | STMR<sub>Mo</sub> (mg/kg)<sup>(c)</sup> | CF<sup>(d)</sup> |
|----------------------|-----------------------------|---------------------------------------------------------------------------------------------|-----------------------------------------------|-----------------------|-------------------------------------|--------------------------------------|----------------|
| Oil palms fruits     | SEU                         | A no residue situation can be anticipated based on metabolism study in primary and rotational crops, provided that proper equipment is used to avoid spray drift. However, this should be confirmed by at least two residue trials | 0.05*<sup>(i)</sup> (0.2*)<sup>(f)</sup> (tentative) | < 0.05 (< 0.2) | < 0.05 (< 0.2) | 1<sup>(g)</sup> (1)<sup>(h)</sup> |
| Kapok                | SEU                         | Residues are not expected in fruits after soil treatment on this crop (morphology of kapok trees prevent from drift contaminations) | 0.05*<sup>(i)</sup> (0.2*)<sup>(f)</sup> | < 0.05 (< 0.2) | < 0.05 (< 0.2) | 1<sup>(g)</sup> (1)<sup>(h)</sup> |
| Barley grains/oat grains | NEU                       | Trials on barley compliant with GAP for desiccation (Germany, 2015); covered by RAR representative use, some trials did not involve analysis of AMPA, but its contribution is considered insignificant. Extrapolation to oats is applicable MRL<sub>OECD</sub> = 28.57 | 30<sup>(30)<sup>(f)</sup> | 21.40 (21.64) | 5.60 (5.84) | 1<sup>(g)</sup> (1)<sup>(h)</sup> |
|                       | SEU                         | Trials on barley compliant with GAP for desiccation (Germany, 2015, 2019; France, 2019). Extrapolation to oats is applicable MRL<sub>OECD</sub> > 29.27 | 30<sup>(30)<sup>(f)</sup> | 19.00 (19.34) | 7.9 (8.0) | 1<sup>(g)</sup> (1)<sup>(h)</sup> |
| Import (US)          |                             | No data available to support the GAP for desiccation | – | – | – | – |

<sup>(a)</sup> Crop grown indoors, foreign crop grown outdoors.

<sup>(b)</sup> HR<sub>Mo</sub> = MRL<sub>Mo</sub> / UC<sub>50</sub>.

<sup>(c)</sup> STMR<sub>Mo</sub> = MRL<sub>Mo</sub> / UC<sub>95</sub>.

<sup>(d)</sup> CF = STMR<sub>Mo</sub> / STMR<sub>OECD</sub>.

<sup>(e)</sup> HR<sub>Mo</sub>, STMR<sub>Mo</sub> and MRL<sub>Mo</sub> are relevant to the supported GAPs.

<sup>(f)</sup> Tentative values.

<sup>(g)</sup> MRL<sub>OECD</sub>.

<sup>(h)</sup> Recommendation or conclusion for the GAP.

Import (US) No data available to support the GAP for desiccation

Trials on barley compliant with GAP for desiccation (Germany, 2015); covered by RAR representative use, some trials did not involve analysis of AMPA, but its contribution is considered insignificant. Extrapolation to oats is applicable MRL<sub>OECD</sub> = 28.57

Trials on barley compliant with GAP for desiccation (Germany, 2015, 2019; France, 2019). Extrapolation to oats is applicable MRL<sub>OECD</sub> > 29.27
| Crop                          | Region/ indoor(a) | Residue levels observed in the supervised residue trials relevant to the supported GAPs (mg/kg) | Recommendations/comments (OECD calculations) | MRL proposals (mg/kg) | HR_{Mo} (mg/kg)(b) | STMR_{Mo} (mg/kg)(c) | Cf(d) |
|------------------------------|-------------------|-------------------------------------------------------------------------------------------------|------------------------------------------------|-----------------------|-------------------|---------------------|-------|
| Barley straw                | NEU               | **Mo**: 4.6; 6.9; 9.6; 10.5; 11; 11.5; 12.8; 12.8; 14.5; 16; 17; 18; 22; 24; 26; 26.3; 26.5; 27; 27.3; 28.4; 32.2; 33.3; 36.9; 37; 41.5; 44; 49.7; 54; 56; 60.5; 69.6; 80.5; 86; 90.2; 109; 115; 117; 136; 140 | Trials on barley compliant with GAP for desiccation (Germany, 2015); covered by RAR representative use, some trials did not involve analysis of AMPA but its contribution is considered insignificant. Extrapolation to oats is applicable MRL_{OECD} = 195.54 | 200\(^{(i)}\) (200)\(^{(j)}\) (tentative) | 140.00 (142) | 28.40 (29.5) | 1\(^{(o)}\) (1)\(^{(h)}\) |
| Oats straw                   |                   | **RA**: 4.7; 6.9; 10; 10.6; 11.3; 12.1; 13.1; 13.2; 14.6; 16.3; 17.7; 18; 22; 24.5; 26.7; 27.1; 27.6; 28.6; 28.7; 29.3; 29.6; 32.7; 33.9; 37.8; 38; 42.1; 44.4; 51.3; 56; 60.8; 61.9; 70.7; 83.6; 89.8; 92; 109; 115; 119; 140; 142 | | | | | |
|                             |                   | **NEU**: 33; 33; 34; 49.5; 66; 95; 96; 102 | Trials on barley compliant with GAP for desiccation (Germany, 2015, 2019; France, 2019). Extrapolation to oats is applicable MRL_{OECD} = 190.7 | 200\(^{(i)}\) (200)\(^{(j)}\) (tentative) | 102.00 (105) | 57.75 (59.5) | 1\(^{(o)}\) (1)\(^{(h)}\) |
|                             |                   | **RA**: 34; 33.9; 34.9; 51; 68.1; 96; 99.6; 105 | | | | | | |
| Buckwheat and other pseudo-cereal grains | NEU               | – | Cereals straw not relevant for import tolerance GAP | – | – | – | – |
|                             |                   | | | | | | |
|                             | SEU               | **Mo**: 33; 33; 34; 49.5; 66; 95; 96; 102 | | | | | | |
|                             |                   | **RA**: 33.9; 34.9; 51; 68.1; 96; 99.6; 105 | | | | | | |
| Common millet/ proso millet grains | NEU               | **Mo**: 0.229; 0.27; 0.279; 0.319; 0.452; 0.558; 0.7; 0.753 | Trials on maize compliant with GAP for desiccation (Germany, 2017). Only four trials analysed for AMPA. Residues of AMPA were reconverted to glyphosate using respective molecular weights, assuming that they were expressed as AMPA in the evaluation report. Applicable extrapolation to millet MRL_{OECD} = 1.34 | 1.5 \(^{(3)}\) | 0.75 \(^{(1.77)}\) | 0.39 \(^{(0.94)}\) | 2.3 \(^{(1)\(^{(h)}\)}\) |
| Crop                  | Region/ indoor(a) | Residue levels observed in the supervised residue trials relevant to the supported GAPs (mg/kg) | Recommendations/comments (OECD calculations)                                                                 | MRL proposals (mg/kg) | HR_{Mo} (mg/kg)(b) | STMR_{Mo} (mg/kg)(c) | CF(d) |
|----------------------|-------------------|-----------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|-----------------------|-------------------|----------------------|-------|
| SEU                  | –                 | No data available to support the GAP for desiccation                                             |                                                                                                                 | –                     | –                 | –                     | –     |
| Import (US)          | Mo: < 0.05; < 0.05; < 0.05; < 0.05; < 0.05; < 0.05; < 0.05; < 0.05; 0.051; 0.058; 0.063; 0.074; 0.1; 0.11; 0.17; 0.19; 0.54; 3.2 RA: < 0.125; < 0.125; < 0.125; < 0.125; < 0.125; < 0.125; < 0.125; < 0.23; 0.245; 0.146; 0.19; 0.133; 0.199; 0.14; 0.18; 0.245; 0.265; 0.615; 3.3 | Conventional GAP supported by trials performed on genetically modified varieties of maize (Germany, 2019). Since the GM variety used in the trials is not related to glyphosate tolerance the data can be used to derive MRL and risk assessment values | 4                     | (4)(f)            | 3.2                   | (3.3)            | 0.05              | (0.14)            | 2      |
| Common millet straw  | NEU               | No data available to support the GAP for desiccation                                              |                                                                                                                 | –                     | –                 | –                     | –     |
| SEU                  | –                 | No data available to support the GAP for desiccation                                              |                                                                                                                 | –                     | –                 | –                     | –     |
| Import (US)          | –                 | Cereals straw not relevant for import tolerance GAP                                               |                                                                                                                 | –                     | –                 | –                     | –     |
| Sorghum grains       | NEU               | Mo: 0.229; 0.27; 0.279; 0.319; 0.452; 0.558; 0.7; 0.753 RA: 0.72; 0.43; 0.82; 0.48; –; –; –; –; –; – | Direct extrapolation from common millet grain (Germany, 2017) MRL_{OECD} = 1.34                                | 1.5                   | (3)(f)            | 0.75                  | (1.77)           | 0.39              | (0.94)            | 2.3    |
|                       | SEU               | –                                                                                               | No data available to support the GAP for desiccision                                                         | –                     | –                 | –                     | –     |
| Sorghum stover       | NEU               | No data available to support the GAP for desiccation                                              |                                                                                                                 | –                     | –                 | –                     | –     |
|                       | SEU               | No data available to support the GAP for desiccation                                              |                                                                                                                 | –                     | –                 | –                     | –     |
### Crop Region/indoor\(^{(a)}\) | Residue levels observed in the supervised residue trials relevant to the supported GAPs (mg/kg) | Recommendations/comments (OECD calculations) | MRL proposals (mg/kg) | \(HR_{Mo}\) (mg/kg)\(^{(b)}\) | \(STMR_{Mo}\) (mg/kg)\(^{(c)}\) | CF\(^{(d)}\) |
|---|---|---|---|---|---|---|
| Import (US) | – | Cereals straw not relevant for import tolerance GAP | – | – | – | – |
| Rice grains SEU | – | No data available to support the GAP for desiccation | – | – | – | – |
| Rice straw SEU | – | No data available to support the GAP for desiccation | – | – | – | – |
| Wheat grains Rye grains | NEU | **Mo**: 0.05; 0.11; 0.16; 0.19; 0.22; 0.23; 0.23; 0.26; 0.33; 0.5; 0.5; 0.6; 0.64; 0.67; 0.7; 0.7; 0.7; 0.7; 0.7; 0.7; 0.74; 0.75; 0.75; 0.75; 0.77; 0.85; 1.3; 1.4; 1.5; 1.5; 1.55; 1.6; 1.7; 1.7; 1.75; 2.2; 2.4; 2.9; 3.1; 3.45; 3.5; 3.7; 3.85; 4.7; 4.8; 4.85; 5.4; 9.5; 12.4; 17.5 | Trials on wheat compliant with GAP for desiccation (Germany, 2015, 2019); covered by RAR representative use. Applicable extrapolation to rye. \(MRL_{OECD} = 17.5\) | 20 (20)\(^{(f)}\) | 17.50 (18.14) | 0.85 (0.93) | 1\(^{(g)}\) |
| SEU | **Mo**: 0.07; 0.38; 0.4; 0.4; 0.47; 0.6; 0.95; 1.2; 1.2; 2.8 | Trials on wheat compliant with GAP for desiccation (Germany, 2015, 2019). Applicable extrapolation to rye. \(MRL_{OECD} = 3.97\) | 4 (4)\(^{(f)}\) | 2.80 (3.04) | 0.54 (0.62) | 1\(^{(g)}\) |
| Import (US) | – | No data available to support the GAP for desiccation | – | – | – | – |
| Crop                | Region/indoor(a) | Residue levels observed in the supervised residue trials relevant to the supported GAPs (mg/kg) | Recommendations/comments (OECD calculations) | MRL proposals (mg/kg) | HR<sub>Mo</sub> (mg/kg)<sup>(b)</sup> | STMR<sub>Mo</sub> (mg/kg)<sup>(c)</sup> | CF<sup>(d)</sup> |
|---------------------|-----------------|-------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|----------------------|-------------------------------------|-------------------------------------|---------|
| Wheat straw         | NEU             | **Mo**: 1.4; 5.3; 8.4; 9.5; 10.3; 10.6; 11.4; 14.7; 14.9; 17.3; 18.5; 19.1; 19.7; 21.5; 24.8; 26.9; 27.4; 27.5; 29.6; 31.4; 34.8; 42; 43.2; 43.8; 44.5; 46; 52.8; 57.7; 63.3; 68; 70.5; 84.5; 85; 95.3; 95.5; 95.7; 96.5; 99; 175 | Trials on wheat compliant with GAP for desiccation (Germany, 2015, 2019); covered by RAR representative use. Applicable extrapolation to rye MRL<sub>OECD</sub> = 192.2 | 200<sup>(i)</sup> (200)<sup>(f),(i)</sup> (tentative) | 175 (179) | 31.4 (31.8) | 1<sup>(g)</sup> |
| Rye straw           |                 | **RA**: 1.5; 5.4; 9.3; 10.5; 10.9; 11; 12.6; 15.7; 15.7; 17.6; 19.2; 19.4; 19.9; 22.1; 25.5; 28; 28.2; 28.9; 29.6; 31.8; 35.9; 42.6; 43.2; 44.2; 45.4; 46; 52.8; 60; 64.3; 68; 71.4; 87.5; 88.5; 96.5; 97.3; 97.6; 98; 103; 179 | | | | | |
| SEU                 | Mo: 3.4; 7.1; 15.5; 16; 20; 22; 28; 28.5; 55.5; 98 | **RA**: 3.5; 7.9; 16.9; 18.6; 20.9; 23.2; 29.6; 29.7; 56.5; 99 | Trials on wheat compliant with GAP for desiccation (Germany, 2015). Applicable extrapolation to rye MRL<sub>OECD</sub> = 141.6 | 150<sup>(i)</sup> (150)<sup>(f),(i)</sup> (tentative) | 98 (99) | 21 (22.1) | 1<sup>(g)</sup> |
| Import (US)         | –               | Cereals straw not relevant for import tolerance GAP | | | | | | |
| Teas                | SEU             | Application on soil before seeding, transplanting and after harvest (i.e. BBCH 00). Available metabolism studies in primary and rotational crops indicate that a no residue situation can be anticipated for this GAP. However, this should be confirmed by at least two residue trials | 0.05<sup>(f),(m)</sup> (0.2<sup>(e)</sup>)<sup>(g),(m)</sup> (tentative) | <0.05 (<0.2) | <0.05 (<0.2) | 1<sup>(g)</sup> |
| Import (US)         | –               | Residue trials on tea were reported (Germany, 2019). However, as an essential GAP parameter is missing (growth stage at last treatment or PHI), it is not possible to use these trials to derive a MRL | | | | | |
### Crop | Region/indoor(a) | Residue levels observed in the supervised residue trials relevant to the supported GAPs (mg/kg) | Recommendations/comments (OECD calculations) | MRL proposals (mg/kg) | HR\textsubscript{Mo} (mg/kg)(b) | STMR\textsubscript{Mo} (mg/kg)(c) | CF(d) |
|---|---|---|---|---|---|---|---|
| Coffee beans | SEU | Application on soil before seedling, transplanting and after harvest (i.e. BBCH 00). Available metabolism studies indicate that a no residue situation can be anticipated for this GAP | 0.05*\textsuperscript{f} (mg) (< 0.2*)\textsuperscript{f} (tentative) | < 0.05 (< 0.2) | < 0.05 (< 0.2) | 1\textsuperscript{(g)} |
| Herbal infusions (from flowers) | NEU | A no residue situation can be anticipated based on metabolism study in primary and rotational crops, provided that proper equipment is used to avoid spray drift. However this should be confirmed by at least two residue trials | 0.05*\textsuperscript{f} (mg) (< 0.2*)\textsuperscript{f} (tentative) | < 0.05 (< 0.2) | < 0.05 (< 0.2) | 1\textsuperscript{(g)} |
| Herbal infusions (from roots) | SEU | Soil treatment performed at BBCH 00, i.e. before sowing, transplanting or after harvest; Studies on rotational crops indicate that no residues uptake occurs in leafy and in roots crops. No residues are expected at harvest | 0.05*\textsuperscript{f} (mg) (< 0.2*)\textsuperscript{f} (tentative) | < 0.05 (< 0.2) | < 0.05 (< 0.2) | 1\textsuperscript{(g)} |
| Herbal infusions (from leaves and herbs) | NEU | A no residue situation can be anticipated based on metabolism study in primary and rotational crops, provided that proper equipment is used to avoid spray drift. However this should be confirmed by at least two residue trials | 0.05*\textsuperscript{f} (mg) (< 0.2*)\textsuperscript{f} (tentative) | < 0.05 (< 0.2) | < 0.05 (< 0.2) | 1\textsuperscript{(g)} |

(a) For indoor trials, GAP compliant trials were available but could not be considered further since generated by using an analytical method not properly validated (2 × < 0.05; 0.07; Germany, 2015)
| Crop                      | Region/ indoor | Residue levels observed in the supervised residue trials relevant to the supported GAPs (mg/kg) | Recommendations/comments (OECD calculations) | MRL proposals (mg/kg) | $HR_{Mo}$ (mg/kg) | $STMR_{Mo}$ (mg/kg) | CF(d) |
|---------------------------|----------------|-----------------------------------------------------------------------------------------------|---------------------------------------------|----------------------|------------------|-------------------|--------|
| Carobs/Saint John’s breads | SEU            | Residues are not expected in fruits after soil treatment on this crop (morphology of carob trees prevent from drift contaminations) |                              | 0.05*(m) (0.2*)*(f),(m) (tentative) | < 0.05 (< 0.2) | < 0.05 (< 0.2) | 1^{(g)} |
| Hops                      | NEU            | A no residue situation can be anticipated based on metabolism study in primary and rotational crops, provided that proper equipment is used to avoid spray drift. However this should be confirmed by at least two residue trials |                              | 0.05*(i),(m) (0.2*)*(f),(i),(m) (tentative) | < 0.05 (< 0.2) | < 0.05 (< 0.2) | 1^{(g)} |
|                          | SEU            | Application on soil before seedling, transplanting and after harvest (i.e. BBCH 00). Available metabolism studies in primary and rotational crops indicate that a no residue situation can be anticipated for this GAP. However, this should be confirmed by at least two residue trials |                              | 0.05*(i),(m) (0.2*)*(f),(i),(m) (tentative) | < 0.05 (< 0.2) | < 0.05 (< 0.2) | 1^{(g)} |
| Seed spices               | NEU            | A no residue situation can be anticipated based on metabolism study in primary and rotational crops, provided that proper equipment is used to avoid spray drift. However, this should be confirmed by at least two residue trials |                              | 0.05*(i),(m) (0.2*)*(f),(i),(m) (tentative) | < 0.05 (< 0.2) | < 0.05 (< 0.2) | 1^{(g)} |
| Fruit spices              | SEU            | Application on soil before seedling, transplanting and after harvest (i.e. BBCH 00). Available metabolism studies in primary and rotational crops indicate that a no residue situation can be anticipated for this GAP. However, this should be confirmed by at least two residue trials |                              | 0.05*(i),(m) (0.2*)*(f),(i),(m) (tentative) | < 0.05 (< 0.2) | < 0.05 (< 0.2) | 1^{(g)} |
| Root and rhizome spices   | NEU            | A no residue situation can be anticipated based on metabolism study in primary and rotational crops, provided that proper equipment is used to avoid spray drift. However, this should be confirmed by at least two residue trials |                              | 0.05*(i),(m) (0.2*)*(f),(i),(m) (tentative) | < 0.05 (< 0.2) | < 0.05 (< 0.2) | 1^{(g)} |
| Crop               | Region/indoor<sup>(a)</sup> | Residue levels observed in the supervised residue trials relevant to the supported GAPs (mg/kg)                                                                 | Recommendations/comments (OECD calculations)                                                                 | MRL proposals (mg/kg) | $HR_{Mo}$ (mg/kg)<sup>(b)</sup> | $STMR_{Mo}$ (mg/kg)<sup>(c)</sup> | CF<sup>(d)</sup> |
|-------------------|-------------------------------|---------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|----------------------|-------------------------------|-------------------------------|----------------|
| SEU               |                               | Application on soil before seedling, transplanting and after harvest (i.e. BBCH 00). Available metabolism studies in primary and rotational crops indicate that a no residue situation can be anticipated for this GAP. However, this should be confirmed by at least two residue trials. | $0.05^{*}(l),(m)$ (tentative) <br> $(0.2*)^{(f),(l),(m)}$ (tentative) | $< 0.05$             | $< 0.05$              | $< 0.05$              | $1^{(g)}$          |
| Bark spices       | SEU                           | Application on soil before seedling, transplanting and after harvest (i.e. BBCH 00). Available metabolism studies in primary and rotational crops indicate that a no residue situation can be anticipated for this GAP. However, this should be confirmed by at least two residue trials. | $0.05^{*}(l),(m)$ (tentative) <br> $(0.2*)^{(f),(l),(m)}$ (tentative) | $< 0.05$             | $< 0.05$              | $< 0.05$              | $1^{(g)}$          |
| Flower pistil     |                               |                                                                           |                                                                                                           |                     |                               |                               |                 |
| spicines          |                               |                                                                           |                                                                                                           |                     |                               |                               |                 |
| Aril spices       |                               |                                                                           |                                                                                                           |                     |                               |                               |                 |
| Sugar canes       | SEU                           | Application on soil before seedling, transplanting and after harvest (i.e. BBCH 00). Available metabolism studies in primary and rotational crops indicate that a no residue situation can be anticipated for this GAP. However, this should be confirmed by at least two residue trials. | $0.05^{*}(l)$ (tentative) <br> $(0.2*)^{(f),(l)}$ (tentative) | $< 0.05$             | $< 0.05$              | $< 0.05$              | $1^{(g)}$          |
| Import (US)       |                               | No data available                                                        |                                                                                                           |                     |                               |                               |                 |
| Chicory roots     | NEU                           | Application on soil before seedling, transplanting and after harvest (i.e. BBCH 00). Available metabolism studies in primary and rotational crops indicate that a no residue situation can be anticipated for this GAP. However, this should be confirmed by at least two residue trials. | $0.05^{*}(l)$ (tentative) <br> $(0.2*)^{(f),(l)}$ (tentative) | $< 0.05$             | $< 0.05$              | $< 0.05$              | $1^{(g)}$          |
| Chicory roots     | SEU                           | Application on soil before seedling, transplanting and after harvest (i.e. BBCH 00). Available metabolism studies in primary and rotational crops indicate that a no residue situation can be anticipated for this GAP. However, this should be confirmed by at least two residue trials. | $0.05^{*}(l)$ (tentative) <br> $(0.2*)^{(f),(l)}$ (tentative) | $< 0.05$             | $< 0.05$              | $< 0.05$              | $1^{(g)}$          |
| Crop        | Region/indoor(a) | Residue levels observed in the supervised residue trials relevant to the supported GAPs (mg/kg)                                                                 | Recommendations/comments (OECD calculations)                                                                                                                                                                                                 | MRL proposals (mg/kg) | HR<sub>Mo</sub> (mg/kg)<sup>(b)</sup> | STMR<sub>Mo</sub> (mg/kg)<sup>(c)</sup> | CF<sup>(d)</sup> |
|-------------|------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|--------------------------------------|---------------------------------------|------------|
| Alfalfa forage | NEU              | Application on soil before seedling, transplanting and after harvest (i.e. BBCH 00). Available metabolism studies in primary and rotational crops indicate that a no residue situation can be anticipated for this GAP. However, this should be confirmed by at least two residue trials | 0.05*<sup>(i)</sup> (<0.05)<sup>(l)</sup> (tentative), 0.2*<sup>(i)</sup> (<0.2)<sup>(l)</sup> (tentative)                                                                                                                                                                                                 | < 0.05 (< 0.2)        | < 0.05 (< 0.2)                      | < 0.05 (< 0.2)                      | 1<sup>(g)</sup> |
|              | SEU              | A no residue situation can be anticipated based on metabolism study in primary and rotational crops, provided that proper equipment is used to avoid spray drift. However, this should be confirmed by at least two residue trials                                                                                                                | 0.05*<sup>(i)</sup> (<0.05)<sup>(l)</sup> (tentative), 0.2*<sup>(i)</sup> (<0.2)<sup>(l)</sup> (tentative)                                                                                                                                                                                                 | < 0.05 (< 0.2)        | < 0.05 (< 0.2)                      | < 0.05 (< 0.2)                      | 1<sup>(g)</sup> |
| Clover forage | NEU              | Application on soil before seedling, transplanting and after harvest (i.e. BBCH 00). Available metabolism studies in primary and rotational crops indicate that a no residue situation can be anticipated for this GAP. However, this should be confirmed by at least two residue trials                                                                 | 0.05*<sup>(i)</sup> (<0.05)<sup>(l)</sup> (tentative), 0.2*<sup>(i)</sup> (<0.2)<sup>(l)</sup> (tentative)                                                                                                                                                                                                 | < 0.05 (< 0.2)        | < 0.05 (< 0.2)                      | < 0.05 (< 0.2)                      | 1<sup>(g)</sup> |
|              | SEU              | Application on soil before seedling, transplanting and after harvest (i.e. BBCH 00). Available metabolism studies in primary and rotational crops indicate that a no residue situation can be anticipated for this GAP. However, this should be confirmed by at least two residue trials                                                                 | 0.05*<sup>(i)</sup> (<0.05)<sup>(l)</sup> (tentative), 0.2*<sup>(i)</sup> (<0.2)<sup>(l)</sup> (tentative)                                                                                                                                                                                                 | < 0.05 (< 0.2)        | < 0.05 (< 0.2)                      | < 0.05 (< 0.2)                      | 1<sup>(g)</sup> |
| Grass forage  | NEU Mo: 3.2; 3.9; 7.4; 8.7; 9.6; 15; 16; 21; 29; 40; 42; 45; 139 RA: 3.5; 3.5; 9; 9; 9; 15; 22; 15; 15; 43; 46; 46          | Trials on grass/pasture compliant with GAP for desiccation (within the 25% deviation). Means of analytical replicates were considered (Germany, 2017) MRL<sub>OECD</sub> = 178.56                                                                                                         | 200<sup>(i)</sup> (200)<sup>(i)</sup> (tentative)                                                                                                                                                                                                                                                                                   | 139 (139)            | 16 (16)                             | 1<sup>(g)</sup>                             | 1<sup>(g)</sup> |
|              | SEU              | Application on soil before seedling, transplanting and after harvest (i.e. BBCH 00). Available metabolism studies in primary and rotational crops indicate that a no residue situation can be anticipated for this GAP. However, this should be confirmed by at least two residue trials                                                                 | 0.05*<sup>(i)</sup> (<0.05)<sup>(l)</sup> (tentative), 0.2*<sup>(i)</sup> (<0.2)<sup>(l)</sup> (tentative)                                                                                                                                                                                                 | < 0.05 (< 0.2)        | < 0.05 (< 0.2)                      | < 0.05 (< 0.2)                      | 1<sup>(g)</sup> |
| Crop            | Region/ indoor\(^{(a)}\) | Residue levels observed in the supervised residue trials relevant to the supported GAPs (mg/kg) | Recommendations/comments (OECD calculations)                                                                 | MRL proposals (mg/kg) | HR\(_{\text{Mo}}\) (mg/kg)\(^{(b)}\) | STMR\(_{\text{Mo}}\) (mg/kg)\(^{(c)}\) | CF\(^{(d)}\) |
|----------------|--------------------------|---------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|-----------------------|-----------------------------------|-----------------------------------|----------|
| Fodder beetroots | NEU                      | --                                                                               | No data available. However, for local treatments by dabbing and rubbing a no-residue situation can be anticipated | 0.05*\(^{(i)}\) (0.2*)\(^{(f),(l)}\) (tentative) | < 0.05 (< 0.2) | < 0.05 (< 0.2) | 1\(^{(g)}\) |
|                |                          |                                                                                  |                                                                                                                 |                       |                                   |                                   |          |
|                | SEU                      | Mo: 2 × < 0.05 RA: 2 × < 0.125                                                 | A no residue situation can be anticipated for this GAP (application on soil at BBCH 00), which is confirmed by 2 southern residue trials performed on sugar beet and performed with a more critical GAP (Germany, 2017) | 0.05*\(^{(i)}\) (0.2*)\(^{(f),(l)}\) (tentative) | < 0.05 (< 0.2) | < 0.05 (< 0.2) | 1\(^{(g)}\) |
|                |                          |                                                                                  |                                                                                                                 |                       |                                   |                                   |          |
| Fodder beetroots | NEU                      | --                                                                               | No data available. However, for local treatments by dabbing and rubbing, a no-residue situation can be anticipated | 0.05*\(^{(i)}\) (0.2*)\(^{(f),(l)}\) (tentative) | < 0.05 (< 0.2) | < 0.05 (< 0.2) | 1\(^{(g)}\) |
|                |                          |                                                                                  |                                                                                                                 |                       |                                   |                                   |          |
|                | SEU                      | Mo: 2 × < 0.05 RA: 2 × < 0.125                                                 | A no residue situation can be anticipated for this GAP (application on soil at BBCH 00), which is confirmed by 2 southern residue trials performed on sugar beet and performed with a more critical GAP (Germany, 2017) | 0.05*\(^{(i)}\) (0.2*)\(^{(f),(l)}\) (tentative) | < 0.05 (< 0.2) | < 0.05 (< 0.2) | 1\(^{(g)}\) |

**RD-enforcement main=RD-enforcement optional:** sum of glyphosate, AMPA and N-acetyl-glyphosate, expressed as glyphosate

| Crop            | Region/ indoor\(^{(a)}\) | Residue levels observed in the supervised residue trials relevant to the supported GAPs (mg/kg) | Recommendations/comments                                                                                     | MRL proposals (mg/kg) | HR\(_{\text{Mo}}\) (mg/kg)\(^{(b)}\) | STMR\(_{\text{Mo}}\) (mg/kg)\(^{(c)}\) | CF\(^{(d)}\) |
|----------------|--------------------------|---------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------|-----------------------|-----------------------------------|-----------------------------------|----------|
| Sweet corn     | NEU                      | Mo: 4 × < 0.2 RA: –                                                             | Trials on maize (sampling on immature maize, 30 days before maturity) (Germany, 2017). Glyphosate and AMPA are below LOQ. N-acetyl-glyphosate is not expected in conventional crops | 0.2*\(^{(i)}\) (tentative) | < 0.2                             | < 0.2                             | 1\(^{(n)}\) |
|                |                          |                                                                                  |                                                                                                                 |                       |                                   |                                   |          |
|                | SEU                      | --                                                                               | A no residue situation can be anticipated based on metabolism studies in primary and rotational crops, provided that proper equipment is used to avoid spray drift. However this should be confirmed by at least two residue trials | 0.2*\(^{(i),(f)}\) (tentative) | < 0.2                             | < 0.2                             | 1\(^{(n)}\) |
| Crop                    | Region/ indoor(a) | Residue levels observed in the supervised residue trials relevant to the supported GAPs (mg/kg) | Recommendations/comments (OECD calculations) | MRL proposals (mg/kg) | HR<sub>Mo</sub> (mg/kg)<sup>(b)</sup> | STMR<sub>Mo</sub> (mg/kg)<sup>(c)</sup> | CF<sup>(d)</sup> |
|------------------------|-------------------|-------------------------------------------------------------------------------------------------|---------------------------------------------|-----------------------|---------------------------------|---------------------------------|-----------------|
| Cotton seeds           | NEU               | --                                                                                              | No data available but this GAP is expected to be less critical than the southern outdoor GAP (desiccation). A no residue situation can be anticipated based on metabolism study in primary and rotational crops, provided that proper equipment is used to avoid spray drift. | --                    | --                              | --                              | --              |
|                        | SEU               | Mo: 0.14; 0.30; 0.34; 0.38; 0.49; 0.58; 0.92                                                    | Trials on cotton seeds compliant with GAP for desiccation; with 25% tolerance on the application rate (Germany, 2017). Residue levels are expressed for the sum of glyphosate and AMPA, expressed as glyphosate (AMPA < LOQ). N-acetyl-glyphosate is not expected in conventional crop. MRL<sub>OECD</sub> = 1.45 | 1.5<sup>(f)</sup> (tentative) | 0.92                             | 0.38                              | 1<sup>(n)</sup> |
|                        | RA: --            |                                                                                                 |                                             |                       |                                 |                                 |                 |
| Rapeseed/canola seed   | NEU               | Mo: 0.29; 0.31; 0.42; 0.48; 0.68; 0.68; 0.78; < 0.8; < 0.8; 0.98; 1.0; 1.1; < 1.3; 1.3; 1.4; 1.8; 2.3; 2.5; 3.1; 4.6; 4.7; 8.5; 11.9 | Trials on rapeseed compliant GAP (Germany, 2017). Residue levels are expressed for the sum of glyphosate and AMPA, expressed as glyphosate. N-acetyl-glyphosate is not expected in conventional crop. MRL<sub>OECD</sub> = 13.6 | 15<sup>(f)</sup> (tentative) | 11.9                              | 1.10                              | 1<sup>(n)</sup> |
|                        | RA: --            |                                                                                                 |                                             |                       |                                 |                                 |                 |
|                        | SEU               | Mo: 0.31; 1.0; 1.48; 5.7                                                                       | Trials on rapeseed compliant with GAP (2) or performed with a shorter PHI of 10 days (2) (Germany, 2015). Residue levels are expressed for the sum of glyphosate and AMPA, expressed as glyphosate. N-acetyl-glyphosate is not expected in conventional crop. MRL<sub>OECD</sub> = 11.9 | 15<sup>(f)</sup> (tentative) | 5.70                             | 1.24                              | 1<sup>(n)</sup> |
| Soyabeans              | NEU               | --                                                                                              | No data available to support the GAP for desiccation. | --                    | --                              | --                              | --              |
|                        | SEU               | --                                                                                              | No data available to support the GAP for desiccation. | --                    | --                              | --                              | --              |
| Crop                  | Region/indoor<sup>a</sup> | Residue levels observed in the supervised residue trials relevant to the supported GAPs (mg/kg) | Recommendations/comments (OECD calculations) | MRL proposals (mg/kg) | HR<sub>Mo</sub> (mg/kg)<sup>b</sup> | STMR<sub>Mo</sub> (mg/kg)<sup>c</sup> | CF<sup>d</sup> |
|----------------------|---------------------------|-----------------------------------------------------------------------------------------------|-----------------------------------------------|-----------------------|---------------------------------|---------------------------------|------------------|
| Import (US)          |                           | Trials on soybeans compliant with GAP (Germany, 2019). The value of 3.4 mg/kg obtained at PHI 30 days was considered as it corresponds to higher residue at longer PHI (further decline studies are required). Residue levels are expressed for the sum of glyphosate and AMPA, expressed as glyphosate. N-acetyl-glyphosate is not expected in conventional crop | 5<sup>(f)</sup> (tentative)                  | 3.4                  | 0.675                           | 1<sup>(n)</sup>                    |                  |
| Maize/corn grain     | NEU                       | Trials on maize compliant with GAP (Germany, 2017). 4 trials analysed for glyphosate and AMPA (AMPA residues were reconverted to glyphosate using respective molecular weights, assuming that they were expressed as AMPA in the evaluation report). 4 other trials analysed for glyphosate only (0.45; 0.56; 0.7; 0.75) were reconverted to the sum of glyphosate and AMPA, using the CF of 2.3 | 3<sup>(f)</sup> (tentative)                  | 1.73                 | 0.93                            | 1<sup>(n)</sup>                    |                  |
|                       |                            | Conventional GAP supported by trials performed on genetically modified varieties of maize (Germany, 2019). Since the GM variety used in the trials is not related to glyphosate tolerance, the data can be used to derive MRL and risk assessment values | 4<sup>(f)</sup> (tentative)                  | 3.3                  | 0.14                            | 1<sup>(n)</sup>                    |                  |
|                       |                            | No data available to support the GAP for desiccation.                                          |                                               |                      |                                 |                                 |                  |
| SEU                  |                           | No data available to support the GAP for desiccation.                                          |                                               |                      |                                 |                                 |                  |
| Import (US)          |                           | Conventional GAP supported by trials performed on genetically modified varieties of maize (Germany, 2019). Since the GM variety used in the trials is not related to glyphosate tolerance, the data can be used to derive MRL and risk assessment values | 4<sup>(f)</sup> (tentative)                  | 3.3                  | 0.14                            | 1<sup>(n)</sup>                    |                  |
| SEU                  |                           | No data available to support the GAP for desiccation.                                          |                                               |                      |                                 |                                 |                  |
| Crop               | Region/ indoor\(^{(a)}\) | Residue levels observed in the supervised residue trials relevant to the supported GAPs (mg/kg) | Recommendations/comments (OECD calculations) | MRL proposals (mg/kg) | HR\(_{Mo}\) (mg/kg)\(^{(b)}\) | STMR\(_{Mo}\) (mg/kg)\(^{(c)}\) | CF\(^{(d)}\) |
|--------------------|---------------------------|---------------------------------------------------------------------------------|---------------------------------------------------------------------------------|---------------------|-----------------------------|-----------------------------|----------|
| SEU                | No data available to support the GAP for desiccation |                                |                                                                                       | –                   | –                           | –                           | –        |
| Sugar beetroots    | SEU                        | –                                 | Trials on sugar beets compliant with GAP (Germany, 2017). Glyphosate and AMPA are below LOQ. N-acetyl-glyphosate is not expected in conventional crops | 0.2\(^{(f)}\) (tentative) | < 0.2                      | < 0.2                       | 1\(^{(i)}\) |
| Sugar beet tops    | SEU                        | No data available | Trials on sugar beets compliant with GAP (Germany, 2017). Glyphosate and AMPA are below LOQ. N-acetyl-glyphosate is not expected in conventional crops | 0.2\(^{(f)}\)\(^{(l)}\) (tentative) | < 0.2                      | < 0.2                       | 1\(^{(i)}\) |
|                   | –                           | No data available |                                                                      | –                   | –                           | –                           | –        |

GAP: Good Agricultural Practice; OECD: Organisation for Economic Co-operation and Development; MRL: maximum residue level.

\(^{(a)}\): Indicates that the MRL is proposed at the limit of quantification.

\(^{(a)}\): NEU: Outdoor trials conducted in northern Europe, SEU: Outdoor trials conducted in southern Europe, Indoor: indoor EU trials or Country code: if non-EU trials.

\(^{(b)}\): Highest residue according to the residue definition for monitoring.

\(^{(c)}\): Supervised trials median residue according to the residue definition for monitoring.

\(^{(d)}\): Conversion factor for risk assessment; median of the individual conversion factors at the supported PHI for each residues trial (unless otherwise specified).

\(^{(e)}\): Values calculated for the optional residue definition correspond to the value calculated for glyphosate, plus residue levels of AMPA (from the trials), plus the LOQ of N-acetyl-glyphosate, expressed as glyphosate (i.e. 0.9 × 0.05 = 0.04 mg/kg). When metabolite AMPA is below the LOQ, the LOQ was expressed as glyphosate (1.5 × 0.05 = 0.075 mg/kg).

\(^{(f)}\): MRLs referring to the residue definition for enforcement ‘sum of glyphosate, AMPA and N-acetyl-glyphosate, expressed as glyphosate’ are tentative because confirmatory methods for analysis of N-acetyl-glyphosate and AMPA are still required.

\(^{(g)}\): A conversion factor of 1 was derived since AMPA (or both glyphosate and AMPA) is expected to remain ≤ LOQ. N-acetyl-AMPA and N-acetyl-glyphosate are not expected in conventional crops.

\(^{(h)}\): A conversion factor of 1 was derived since AMPA is not expected in conventional crops, a CF of 1 is applicable for all MRLs and risk assessment values derived under the optional residue definition.

\(^{(i)}\): Tentative MRL is derived because additional trials are required.

\(^{(j)}\): Tentative MRL is derived because the complete summary of the residue trials (including full assessment of the studies) is still required for the northern outdoor trials; moreover, storage stability of AMPA in high protein content commodities is not covered.

\(^{(k)}\): A tentative conversion factor of 1.1 is proposed for sunflower seed although the three available trials indicate levels of AMPA to remain below the LOQ. This CF of 1.1 is consistent with the CF derived for other oilseed commodities (see linseed) and may be refined when the additional trials required (performed with analysis for parent and AMPA) will be provided.

\(^{(l)}\): Tentative MRL is derived in view of the future MRL setting in feed items.

\(^{(m)}\): Tentative MRL is derived as a fully validated analytical method for enforcement in complex matrices is still required.

\(^{(n)}\): A conversion factor of 1 was derived since N-acetyl-AMPA is not expected in conventional crops.
### B.1.2.2. Summary of residues data from the supervised residue trials on genetically modified EPSPS crops

| Crop                               | Region/indoor | Residue levels observed in the supervised residue trials relevant to the supported GAPs (mg/kg) | Recommendations/comments (OECD calculations) | MRL proposals (mg/kg) | HR_{Mo} (mg/kg) | STMR_{Mo} (mg/kg) | CF^{(d)} |
|------------------------------------|---------------|------------------------------------------------------------------------------------------------|---------------------------------------------|-----------------------|----------------|------------------|----------|
| **Genetically modified EPSPS crops** |               | sum of glyphosate, AMPA and N-acetyl-glyphosate, expressed as glyphosate                           |                                             |                       |                |                  |          |
| Sweet corn                         | Import (US)   | 3 applications at 4, 0.86 and 1.7 kg/ha  
Mo: 0.205; 0.33; 0.58; 1.0; 1.3; 1.45^{(9)}  
RA: –  
4 applications: 1 × 1.5 and 3 × 1.7 kg/ha  
Mo: 0.185; 0.43  
RA: – | Trials on sweet corn approximating the GAP (3 × 1.7 kg/ha) considered acceptable since first applications done at an early growth stage are not expected to have a significant impact on the final residue level (Germany, 2017). Residues analysed only for glyphosate and AMPA acceptable since N-acetyl-glyphosate and N-acetyl-AMPA are not expected in EPSPS crops. MRL_{OECD} = 2.68 | 3^{(e),(f)} (tentative) | 1.45 | 0.51 | 1.0 |
| Cotton seeds                       | Import (US)   | Mo: 14.1; 7.7; 20; 21.6; 22.4; 17.5; 8.0; 6.2; 17.7; 23.7; 25.2; 30.9; 13.0; 18.8; 14.1; 7.6; 23.9  
RA: – | Trials on cotton seeds performed with higher dose rate at first application (3.3 kg/ha instead of 1.7) considered acceptable since the first application done at an early growth stage is not expected to have a significant impact on the final residue level (Germany, 2017). Residues analysed only for glyphosate and AMPA acceptable since N-acetyl-glyphosate and N-acetyl-AMPA are not expected in EPSPS crops. MRL_{OECD} = 51.6 | 60^{(e),(f)} (tentative) | 30.9 | 17.7 | 1.0 |
| Sugar beets roots                  | Import (US)   | Mo: 1.1  
RA: – | One trial approximating the GAP is available (Germany, 2019) considering that the first application made at sowing stage has no impact on the final residue level. However, one trial is not enough to derive a MRL | – | – | – | – |
| Sugar beets tops                   | Import (US)   | – | Sugar beet tops not relevant for import tolerance GAP | – | – | – | – |
**B.1.2.3. Summary of residues data from the supervised residue trials on genetically modified GOX crops**

| Crop | Region/indoor (a) | Residue levels observed in the supervised residue trials relevant to the supported GAPs (mg/kg) | Recommendations/comments (OECD calculations) | MRL proposals (mg/kg) | HR_{Mo} (mg/kg)\(b\) | STMR_{Mo} (mg/kg)\(c\) | CF\(d\) |
|------|-------------------|-----------------------------------------------------------------------------------|---------------------------------------------|----------------------|-----------------------|-----------------------|-------|
| Soyabean | – | – | According to the EU Register of authorised GMOs, the import of EPSPS maize and EPSPS soyabean is authorised in EU. Nevertheless, as no import tolerances on these GM crops were reported by MSs during the GAP collection phase, it was not possible to derive an MRL based on these uses | – | – | – | – |
| Maize | – | – | | | | | |

GAP: Good Agricultural Practice; OECD: Organisation for Economic Co-operation and Development; MRL: maximum residue level.

*: Indicates that the MRL is proposed at the limit of quantification.

(a): NEU: Outdoor trials conducted in northern Europe, SEU: Outdoor trials conducted in southern Europe, Indoor: indoor EU trials or Country code: if non-EU trials.

(b): Highest residue according to the residue definition for monitoring.

(c): Supervised trials median residue according to the residue definition for monitoring.

(d): Conversion factor for risk assessment; median of the individual conversion factors at the supported PHI for each residue trial.

\(\text{cf}^{(g)}\): Tentative MRL is derived as confirmatory methods for analysis of N-acetyl-glyphosate and AMPA are still required.

\(\text{cf}^{(f)}\): As N-acetyl compounds were not analysed for in the trials, in case risk managers wish to exclude the N-acetyl-glyphosate from the residue definition for enforcement, the derived MRL will be still valid.

\(\text{cf}^{(g)}\): Value corresponds to the highest residue level measured at longer PHI.
## B.1.2.4. Summary of residues data from the supervised residue trials on genetically modified GAT crops

| Crop               | Region/ indoor\(^{(a)}\) | Residue levels observed in the supervised residue trials relevant to the supported GAPs (mg/kg) | Recommendations/comments (OECD calculations) | MRL proposals (mg/kg) | HR\(_{Mo}\) (mg/kg)\(^{(b)}\) | STMR\(_{Mo}\) (mg/kg)\(^{(c)}\) | CF\(^{(d)}\) |
|--------------------|---------------------------|----------------------------------------------------------------------------------------------|----------------------------------------------|----------------------|-----------------------------|-----------------------------|---------|
| **Genetically modified GAT crops** |                           | **RD-enforcement 1=RD-enforcement 2:** sum of glyphosate, AMPA and N-acetyl-glyphosate, expressed as glyphosate |
| **Rape seeds**     | Import (US)               | **Mo:** 1.83; 10.1; 5.6; 1.58; 2.8; 3.3; 5.8; 11.2; 3.5; 2.7; 3.3; 2.2; 0.88; 0.81; 14.8  
                      |                             | **RA:** 1.88; 10.2; 5.6; 1.63; 2.9; 3.4; 5.8; 11.2; 3.5; 2.7; 3.3; 2.3; 0.93; 0.86; 15.2 | GAT GM rapeseed is currently not authorised for placing on the market within the EU. Therefore GAP and supporting residue trials were not considered further in the assessment. MRL\(_{OECD}\) = 21.34 |
|                    |                           |                                               |                                               |                      |                             |                             |         |

GAP: Good Agricultural Practice; OECD: Organisation for Economic Co-operation and Development; MRL: maximum residue level.

\(^{(a)}\): NEU: Outdoor trials conducted in northern Europe, SEU: Outdoor trials conducted in southern Europe, Indoor: indoor EU trials or Country code: if non-EU trials.

\(^{(b)}\): Highest residue according to the residue definition for monitoring.

\(^{(c)}\): Supervised trials median residue according to the residue definition for monitoring.

\(^{(d)}\): Conversion factor for risk assessment; median of the individual conversion factors at the supported PHI for each residues trial.
### B.1.2.5. Residues in succeeding crops

| Confined rotational crop study (quantitative aspect) | According to the results from the confined rotational crop studies performed up to 1.5N, residues of glyphosate or AMPA are not expected in rotational root and leafy crops following annual application of glyphosate, provided that the active substance is used according to the GAPs considered in this review. Residues of glyphosate and its metabolite AMPA above the LOQ of 0.05 mg/kg cannot be excluded in cereals grain (only AMPA), forage and chaff grown in rotation with crops treated with glyphosate. Therefore, MSs are recommended to implement proper mitigation measures when granting authorisation of plant protection products containing glyphosate, in order to avoid residues to occur in rotated cereals. Moreover, as the available studies do not cover the plateau concentration calculated for AMPA, proper mitigation measures should also be implemented to avoid accumulation of AMPA in soil and possible uptake of AMPA in rotational crops |
| Field rotational crop study | Currently not available |

### B.1.2.6. Processing factors

| Processed commodity | Number of studies(a) | Individual values | Median PF |
|---------------------|----------------------|-------------------|-----------|
| **Conventional crops** | | | |
| Residue definition for enforcement: (glyphosate) | | |
| Residue definition for risk assessment: sum of glyphosate, AMPA, N-acetyl-glyphosate and N-acetyl-AMPA, expressed as glyphosate | | |
| **Robust processing factors (sufficiently supported by data)** | | |
| Citrus, juice | 6 | 0.45; < 0.71; < 0.83; < 0.83; 0.83; < 1 | 0.83 |
| Citrus, peel | 6 | < 0.83; 2.3; 2.8; 3.1; 3.1; 5.0 | 3 |
| Citrus, dry pomace(d) | 6 | 1.4; 1.8; 1.8; 3.3; 4.9; 5.3 | 2.6 |
| Citrus, press liquor | 6 | < 0.83; 1.7; 1.9; 2.1; 2.3; 2.7 | 2 |
| Olives, crude oil | 19 | 2 < 0.03; < 0.04; 4 < 0.05; 2 < 0.06; < 0.09; 2 < 0.13; < 0.17; < 0.25; < 0.35; < 0.38; < 0.42; 2 < 0.63 | 0.09 |
| Olives, refined oil | 6 | 2 < 0.05; 0.09; < 0.35; < 0.38; < 0.42 | 0.22 |
| Linseed, oil | 4 | < 0.1; < 0.18; 2 < 0.31 | 0.25 |
| Linseed, press cake | 4 | 1.1; < 1.5; 2 < 1.6 | 1.6 |
| Rye, bran | 4 | 0.17; 1.3; 1.7; 4.8 | 1.5 |
| Rye, flour | 4 | 0.11; 0.33; 0.55; 1.5 | 0.44 |
| Rye, wholemeal flour | 4 | 0.01; 0.89; 1.1; 4.4 | 1 |
| Rye, wholemeal bread | 4 | 0.07; 0.48; 0.78; 2.6 | 0.63 |
| Rye, middlings | 4 | 0.07; 1.2; 1.5; 7.8 | 1.35 |
| Wheat, bran | 13 | 0.96; 1.2; 1.3; 1.3; 1.6; 1.7; 1.8; 1.8; 1.9; 2.0; 2.3; 2.8 | 1.8 |
| Wheat, flour | 13 | 0.08; 0.12; 0.17; 0.29; 0.52; 0.55; 0.57; 0.63; 0.72; 0.77; 0.92 | 0.57 |
| Grass, hay | 6 | 2 < 0.8; 1.0; 1.2; 2 < 1.7 | 1.1 |
| Grass, silage | 7 | 0.6; 2 < 0.7; 3 < 0.9; 1.2 | 0.9 |
| Processed commodity | Number of studies (a) | Processing factor (PF) | CFP (b) | Median PF |
|---------------------|-----------------------|------------------------|---------|-----------|
| Sugar cane, bagasse | 24                    | 0.22; 0.24; 0.32; 0.29; 0.18; 0.26; 0.48; 0.62; 0.56; 0.86; 0.18; 0.71; 0.90; 0.37; 0.32; 0.77; 0.45; 0.25; 0.52; 0.37; 0.30; 0.24; 0.25; 0.98 | 0.34 | 1 |
| Sugar cane, raw sugar | 25                    | 0.68; 0.50; 0.85; 1.97; 0.66; 0.68; 1.24; 0.64; 2.42; 0.37; 1.5; 1.1; 1.28; 1.48; 1.69; 0.77; 1.23; 1.08; 5.72; 2.46; 0.67; 0.29; 0.36; 0.93 | 0.93 | 1 |
| Sugar cane, molasses | 25                    | 7.02; 9.08; 13.9; 8.47; 3.22; 8.36; 7.71; 8.53; 6.92; 27.1; 5.44; 4.0; 5.0; 8.72; 6.11; 5.77; 4.77; 7.74; 9.17; 15.9; 10.2; 8.95; 7.8; 5.37; 11.6 | 7.8 | 1 |
| Sugar cane, refined sugar | 12                | 0.02; 0.01; < 0.29; < 0.51; 0.74; < 0.14; 0.65; 0.85; 2.45; 1.49; < 0.70; < 0.30 | 0.58 | 1 |

**Indicative processing factors (limited dataset)**

| Processed commodity | Number of studies (a) | Processing factor (PF) | CFP (b) | Median PF |
|---------------------|-----------------------|------------------------|---------|-----------|
| Wheat, wholemeal flour | 2                    | 0.54; 1.7 | 1.1 | 1 (c) |
| Wheat, wholemeal bread | 2                    | 0.34; 0.39 | 0.37 | 1 (c) |
| Wheat, middlings | 2                    | 0.32; 0.89 | 0.61 | 1 (c) |
| Wheat, semolina | 2                    | 0.14; 0.16 | 0.15 | 1 (c) |
| Wheat, semolina bran | 2                    | 1.4; 2.2 | 1.8 | 1 (c) |

**Conventional crops**

**Residue definition for enforcement:** sum of glyphosate, AMPA, N-acetyl-glyphosate, expressed as glyphosate (e)

**Residue definition for risk assessment:** sum of glyphosate, AMPA, N-acetyl-glyphosate and N-acetyl-AMPA, expressed as glyphosate

**Robust processing factors (sufficiently supported by data)**

| Processed commodity | Number of studies (a) | Processing factor (PF) | CFP (b) | Median PF |
|---------------------|-----------------------|------------------------|---------|-----------|
| Soyabeans, fat free meal | 4                    | 0.84; 0.88; 0.96; 1.0 | 0.92 | 1 |
| Soyabeans, hulls | 4                    | 4.0; 4.2; 4.6; 4.9 | 4.4 | 1 |
| Soyabeans, crude oil | 4                    | 0.011; 0.013; < 0.02; < 0.02 | 0.02 | 1 |
| Rape seed, crude oil | 4                    | < 0.1; < 0.13; < 0.15; < 0.27 | 0.14 | 1 |
| Rape seed, refined oil | 5                    | < 0.05; < 0.1; < 0.13; < 0.15; < 0.27 | 0.13 | 1 |
| Rape seed, press cake | 5                    | 1.2; < 1.3; 1.4; 1.5; 2.2 | 1.4 | 1 |
| Maize, fat free meal | 4                    | 1.0; 1.0; 1.2; 1.2 | 1.1 | 1 |
| Maize, crude oil | 4                    | < 0.05; < 0.08; < 0.11; < 0.14 | 0.1 | 1 |

**Indicative processing factors (limited dataset)**

| Processed commodity | Number of studies (a) | Processing factor (PF) | CFP (b) | Median PF |
|---------------------|-----------------------|------------------------|---------|-----------|
| Maize, flour | 2                    | 0.9; 0.9 | 0.9 | 1 |

**Genetically modified GAT crops**

**Residue definition for enforcement:** sum of glyphosate, AMPA, N-acetyl-glyphosate, expressed as glyphosate

**Residue definition for risk assessment:** sum of glyphosate, AMPA, N-acetyl-glyphosate and N-acetyl-AMPA, expressed as glyphosate
| Processed commodity | Number of studies (a) | Processing factor (PF)** | CF (b)** | Median PF |
|---------------------|-----------------------|--------------------------|----------|-----------|
| **Robust processing factors (sufficiently supported by data)** | | | | |
| Rape seed, refined oil | 3 | < 0.004; 2 × < 0.01 | 0.01 | 1 |
| Rape seed, press cake | 3 | 1.6; 1.5; 0.31 | 1.5 | 1 |
| **Indicative processing factors (limited dataset)** | | | | |
| Soyabean, fat free meal | 1 | 0.68 | 0.68 | 1.3 |
| Soyabean, hulls | 1 | 5.3 | 5.3 | 1.2 |
| Soyabean, refined oil | 1 | < 0.05 | 0.05 | 1 |
| Maize, meal | 2 | 1.1; 0.97 | 1.1 | 1.2 |
| Maize, refined oil | 2 | < 0.53; < 0.83 | 0.68 | 1 |
| Maize, flour | 2 | 0.85; 1.0 | 0.93 | 1.2 |
| Maize, starch | 2 | < 0.53; < 0.83 | 0.68 | 1 |

(a): Studies with residues in the RAC at or close to the LOQ were disregarded (unless concentration may occur).
(b): Conversion factor for risk assessment in the processed commodity; median of the individual conversion factors for each residues trial.
(c): Since residues of AMPA were below the LOQ in both raw and processed commodities, a CF of 1 is proposed for risk assessment.
(d): Reported as citrus feed meal by the RMS.
(e): Although studies were performed on conventional crops, since glyphosate tolerant varieties are currently on the market for soyabean, rapeseeds and maize, the PF were calculated considering the residue definitions as derived for genetically modified crops.

**B.2. Residues in livestock**

| Relevant groups | Dietary burden expressed in mg/kg bw per day | mg/kg DM | Most critical diet (a) | Most critical commodity (a) | Trigger exceeded (Y/N) |
|-----------------|---------------------------------------------|----------|------------------------|-----------------------------|------------------------|
| Cattle (all diets) | 1.76 | 13.1 | 45.6 | 341 | Cattle (dairy) | Grass, forage (fresh) | Yes |
| Cattle (dairy only) | 1.76 | 13.1 | 45.6 | 341 | Cattle (dairy) | Grass, forage (fresh) | Yes |
| Sheep (all diets) | 2.07 | 17.7 | 62.2 | 530 | Sheep (ram/ewe) | Grass, forage (fresh) | Yes |
| Sheep (ewe only) | 2.07 | 17.7 | 62.2 | 530 | Sheep (ram/ewe) | Grass, forage (fresh) | Yes |
| Swine (all diets) | 0.56 | 2.83 | 24.0 | 122 | Swine (breeding) | Grass, forage (fresh) | Yes |
| Poultry (all diets) | 1.02 | 2.15 | 14.9 | 31.4 | Poultry (layer) | Wheat, straw | Yes |
| Poultry (layer only) | 1.02 | 2.15 | 14.9 | 31.4 | Poultry (layer) | Wheat, straw | Yes |

(a): Calculated for the maximum dietary burden.
## B.2. Nature of residues and methods of analysis in livestock

### B.2.1.1. Metabolism studies, methods of analysis and residue definitions in livestock

| Livestock (available studies) | Animal                  | Dose (mg/kg bw per day) | Duration (days) | N rate/comment                                                                 |
|-------------------------------|-------------------------|--------------------------|-----------------|-------------------------------------------------------------------------------|
|                               | Laying hen              | 18.2                     | 5–7             | 8N compared to maximum dietary burden poultry                                  |
|                               | 0.067–7.1               |                          | 4               | Informative only (residues not sufficiently identified)                       |
|                               | Lactating goat          | 7.1–8.0                  | 5               | 0.5–0.6N compared to maximum dietary burden sheep                             |
|                               |                         |                          |                 |                                                                                |
|                               | Glyphosate and AMPA (9:1) |                         |                 |                                                                                |
|                               | Laying hen              | 9.7 glyphosate + 1.03 AMPA | 7               | 5N compared to maximum dietary burden poultry                                 |
|                               |                         |                          |                 |                                                                                |
|                               | Lactating goat          | 4.1 glyphosate + 0.45 AMPA | 5               | 0.3N compared to maximum dietary burden sheep                                 |
|                               |                         |                          |                 |                                                                                |
|                               | Glyphosate-trimesium     |                          |                 |                                                                                |
|                               | Laying hen              | 4.1                      | 10              | 2N compared to maximum dietary burden poultry                                 |
|                               |                         |                          |                 |                                                                                |
|                               | Lactating goat          | 2.6                      | 7               | 0.2N compared to maximum dietary burden sheep                                 |
|                               |                         |                          |                 |                                                                                |
|                               | 2.0(a)                  |                          | 4               | Informative only (residues not sufficiently identified)                       |
|                               |                         |                          |                 |                                                                                |
|                               | N-acetyl-glyphosate      |                          |                 |                                                                                |
|                               | Laying hen              | 4.5                      | 7               | 2N compared to maximum dietary burden poultry                                 |
|                               |                         |                          |                 |                                                                                |
|                               | Lactating goat          | 6.8                      | 5               | 0.5N compared to maximum dietary burden sheep                                 |
| **Sources:** Germany (2015, 2017) |                         |                          |                 |                                                                                |

(a): Reported in the study as 70 mg/kg in the feed and recalculated assuming a body weight of 70 kg and maximum daily intake of 2 kg feed.

| Time needed to reach a plateau concentration in milk and eggs (days) | Milk: < 7 days | Eggs: 14 days (based on 28 day feeding study, no plateau reached within 8 days in metabolism studies) |
|----------------------------------------------------------------------|----------------|-------------------------------------------------------------------------------------------------------|
| Metabolism in rat and ruminant similar (Yes/No)                      | Yes            |                                                                                                      |
| Animal residue definition for monitoring (RD-Mo)                     | Sum of glyphosate, AMPA and N-acetyl-glyphosate, expressed as glyphosate |
| Animal residue definition for risk assessment (RD-RA)                | Sum of glyphosate, AMPA, N-acetyl-glyphosate and N-acetyl-AMPA, expressed as glyphosate |
| Conversion factor (monitoring to risk assessment)                    | See Appendix B.2.2.1 |
| Fat soluble residues (Yes/No)                                       | No             |                                                                                                      |
| Methods of analysis for monitoring of residues (analytical technique, crop groups, LOQs) | HPLC-MS/MS; ILV available; LOQ for glyphosate, AMPA and N-acetyl-glyphosate: 0.025 mg/kg each in meat, milk and egg and 0.05 mg/kg each in liver, kidney and fat. A confirmatory GC-MS method is only available for glyphosate in milk, eggs and meat. A confirmatory method for glyphosate in fat and in liver/kidney as well as a confirmatory method for AMPA and N-acetyl-glyphosate in all matrices is missing |
### B.2.1.2. Stability of residues in livestock

| Animal products  (available studies) | Animal Commodity T (°C) | Stability (months/years) |
|--------------------------------------|-------------------------|-------------------------|
| **Glyphosate**                       |                         |                         |
| Swine Fat                            | –20                     | 26                      |
| Swine Muscle                         | –20                     | 26                      |
| Swine Liver                          | –20                     | 26                      |
| Swine Kidney                         | –20                     | 26                      |
| Cow Milk                             | –20                     | 16                      |
| Chicken Egg                          | –20                     | ≤14                     |
| **AMPA**                             |                         |                         |
| Swine Fat                            | –20                     | 26                      |
| Swine Muscle                         | –20                     | 26                      |
| Swine Liver                          | –20                     | 26                      |
| Swine Kidney                         | –20                     | 26                      |
| Cow Milk                             | –20                     | 16                      |
| Chicken Egg                          | –20                     | ≤14                     |

Source: Germany (2015)
Storage stability of N-acetyl-glyphosate and N-acetyl-AMPA not investigated

### B.2.2. Magnitude of residues in livestock

#### B.2.2.1. Summary of the residue data from livestock feeding studies

| Animal Commodity | Residues at the closest feeding level (mg/kg) | Estimated value at 1N MRL proposal (mg/kg) | CF<sup>(c)</sup> |
|------------------|-----------------------------------------------|-------------------------------------------|------------------|
|                  | Mean   | Highest | STMR<sup>(a)</sup> (mg/kg) | HR<sup>(b)</sup> (mg/kg) |                      |
| **Cattle (all diets)** – Closest feeding level (19.4 mg/kg bw per day; 1.5N dietary burden)<sup>(d)</sup> | | | | | |
| Muscle           | 0.20   | 0.20    | 0.17                     | 0.18              | 0.2<sup>(e)</sup> (tentative) |
| Fat              | 0.20   | 0.22    | < 0.2                    | < 0.2             | 0.2<sup>(e)</sup>,<sup>(f)</sup> (tentative) |
| Liver            | 0.71   | 0.85    | 0.54                     | 0.69              | 0.7<sup>(e)</sup>,<sup>(f)</sup> (tentative) |
| Kidney           | 8.39   | 10.2    | 0.66                     | 6.79              | 7<sup>(e)</sup>,<sup>(f)</sup> (tentative) |
| **Cattle (dairy only)** – Closest feeding level (19.4 mg/kg bw per day; 1.5N dietary burden)<sup>(d)</sup> | | | | | |
| Milk<sup>(g)</sup> | 0.10   | n.a.    | < 0.1                    | < 0.1             | 0.1<sup>(e)</sup> (tentative) |
| **Sheep (all diets)**<sup>(h)</sup> – Closest feeding level (19.4 mg/kg bw; 1.1N dietary burden)<sup>(d)</sup> | | | | | |
| Muscle           | 0.20   | 0.20    | 0.17                     | 0.19              | 0.2<sup>(e)</sup> (tentative) |
| Fat              | 0.20   | 0.22    | < 0.2                    | < 0.2             | 0.2<sup>(e)</sup>,<sup>(f)</sup> (tentative) |
| Liver            | 0.71   | 0.85    | 0.54                     | 0.81              | 0.7<sup>(e)</sup>,<sup>(f)</sup> (tentative) |
| Kidney           | 8.39   | 10.2    | 0.80                     | 9.27              | 7<sup>(e)</sup>,<sup>(f)</sup> (tentative) |
| **Sheep (dairy only)**<sup>(h)</sup> – Closest feeding level (19.4 mg/kg bw; 1.1N dietary burden)<sup>(d)</sup> | | | | | |
| Milk<sup>(g)</sup> | 0.10   | n.a.    | < 0.1                    | < 0.1             | 0.1<sup>(e)</sup> (tentative) |
| **Swine** – Closest feeding level (3.91 mg/kg bw per day; 1.4N rate)<sup>(j)</sup> | | | | | |
| Muscle           | < 0.17 | < 0.17  | < 0.17                   | < 0.17            | 0.2<sup>(e)</sup> (tentative) |
| Fat              | < 0.17 | < 0.17  | < 0.2                    | < 0.2             | 0.2<sup>(e)</sup>,<sup>(f)</sup> (tentative) |
| Liver            | 0.42   | 0.46    | < 0.17                   | 0.35              | 0.4<sup>(e)</sup>,<sup>(f)</sup> (tentative) |
| Kidney           | 3.07   | 3.58    | 0.21                     | 2.43              | 3<sup>(e)</sup>,<sup>(f)</sup> (tentative) |
| **Poultry (all diets)** – Closest feeding level (2.96 mg/kg bw per day; 1.3N rate)<sup>(i)</sup> | | | | | |
| Muscle           | < 0.17 | < 0.17  | < 0.17                   | < 0.17            | 0.2<sup>(e)</sup> (tentative) |
| Fat              | < 0.17 | < 0.17  | < 0.2                    | < 0.2             | 0.2<sup>(e)</sup>,<sup>(f)</sup> (tentative) |

Notes:
- MRL: Maximum Residue Level
- STMR: Standardised Target MRL
- HR: Highest Residue
- CF: Conversion Factor

Notes on tables:
- (a) Standardised Target MRL
- (b) Highest Residue
- (c) Conversion Factor
- (d) Dietary burden
- (e) Tentative
- (f) Subject to confirmation

Review of the existing MRLs for glyphosate - revised version to take into account omitted data
www.efsa.europa.eu/efsajournal 157 EFSA Journal 2019;17(10):5862
| Animal commodity | Residues at the closest feeding level (mg/kg) | Estimated value at 1N | MRL proposal (mg/kg) | CF(c) |
|------------------|---------------------------------------------|-----------------------|----------------------|-------|
|                  | Mean | Highest | STMR(a) (mg/kg) | HR(b) (mg/kg) | |
| Liver            | 0.19 | 0.20    | < 0.2          | < 0.2          | 0.2*(e),(f) (tentative) | 1 |
| Poultry (layer only) – Closest feeding level (2.96 mg/kg bw per day; 1.3N rate)(j) | | | | |
| Eggs             | < 0.10 | < 0.10 | < 0.10 | < 0.10 | 0.1*(e) (tentative) | 1 |

n.a. not applicable

*: Indicates that the MRL is proposed at the limit of quantification.
(a): The mean residue level for milk and the mean residue levels for eggs and tissues were recalculated at the 1N rate for the median dietary burden.
(b): The mean residue level in milk and the highest residue levels in eggs and tissues, were recalculated at the 1N rate for the maximum dietary burden.
(c): Conversion factor from enforcement to risk assessment. CF of 1 is proposed because N-acetyl-AMPA is not expected at significant levels.
(d): Closest feeding level and N dose rate related to the maximum dietary burden. Study performed with glyphosate-trimesium with dose rate expressed as glyphosate equivalents.
(e): MRL proposal is tentative because a confirmatory method for AMPA and N-acetyl-glyphosate is still required for all animal matrices.
(f): MRL proposal is tentative because a confirmatory method for glyphosate is still required for fat, liver and kidney.
(g): Highest residue level from day 1 to day 28 (daily mean of 2 cows).
(h): Since extrapolation from cattle to other ruminants and swine is acceptable, results of the livestock feeding study on ruminants were relied upon to derive the MRL and risk assessment values in sheep.
(i): Closest feeding level and N dose rate related to the maximum dietary burden. Study performed on pigs dosed with glyphosate and AMPA at 9:1. Dose rate reported refer to the sum of glyphosate and AMPA, expressed as glyphosate.
(j): Closest feeding level and N dose rate related to the maximum dietary burden. Study performed on hens dosed with glyphosate and AMPA at 9:1. Dose rate reported refer to the sum of glyphosate and AMPA, expressed as glyphosate.

**B.3. Consumer risk assessment**

**B.3.1. Consumer risk assessment without consideration of the existing CXLs**

| ADI | 0.5 mg/kg bw per day (EFSA, 2015) |
|-----|----------------------------------|

**Highest IEDI, according to EFSA PRIMo**

**Scenario 1 (considering the main RD-monitoring):**
3.7% ADI (IE adult)

**Scenario 2 (considering the optional RD-monitoring):**
4.4% ADI (IE adult)

**Assumptions made for the calculations**

**Scenario 1 (considering the main RD-monitoring):**
The calculation is based on the median residue levels and conversion factors in the raw agricultural commodities derived from the reported uses on conventional and genetically modified crops. For those commodities where data were insufficient to derive a MRL, EFSA considered the existing EU MRL multiplied by a conversion factor for an indicative calculation. For mustard seed, the conversion factor of 1.1 (as derived from trials performed on other oilseeds) was considered. For buckwheat and rice grain, the conversion factor of 2.3 (as derived from trials performed on other cereals) was considered. For cultivated fungi, the conversion factor of 2.3 (worst-case CF derived in this review) was considered.
The contributions of commodities where no GAP was reported in the framework of this review were not included in the calculation.

**Scenario 2 (considering the optional RD-monitoring):**
The calculation is based on the median residue levels in the raw agricultural commodities derived from the reported uses on conventional and genetically modified crops and expressed under the optional residue definition for monitoring (i.e. including glyphosate, AMPA and N-acetyl-glyphosate for all commodities). No CF was considered because residues of N-acetyl-AMPA above the LOQ are not expected. For MRLs proposed at the LOQ, risk assessment was performed considering a combined LOQ (summing up individual LOQs of glyphosate, AMPA and N-acetyl-glyphosate). For those commodities where data were insufficient to derive a MRL, EFSA considered the existing EU MRL.
ARfD 0.5 mg/kg bw (EFSA, 2015)

**Highest IESTI, according to EFSA PRIMo**

| Scenario 1 (considering the main RD-monitoring): | 80.4% ARfD (dry beans) |
| Scenario 2 (considering the optional RD-monitoring): | 80.4% ARfD (dry beans) |

**Assumptions made for the calculations**

**Scenario 1 (considering the main RD-monitoring):**
The calculation is based on the highest residue levels and conversion factors in the raw agricultural commodities derived from the reported uses on conventional and genetically modified crops.

For those commodities where data were insufficient to derive a MRL, EFSA considered the existing EU MRL multiplied by a conversion factor for an indicative calculation, as follows. For mustard seed, the conversion factor of 1.1 (as derived from trials performed on other oilseeds) was considered. For buckwheat and rice grain, the conversion factor of 2.3 (as derived from trials performed on other cereals) was considered. For cultivated fungi, the conversion factor of 2.3 (worst-case CF derived in this review) was considered.

The contributions of commodities where no GAP was reported in the framework of this review were not included in the calculation.

**Scenario 2 (considering the optional RD-monitoring):**
The calculation is based on the highest residue levels in the raw agricultural commodities derived from the reported uses on conventional and genetically modified crops and expressed under the optional residue definition for monitoring (i.e. including glyphosate, AMPA and N-acetyl-glyphosate for all commodities). No CF was considered because residues of N-acetyl-AMPA above the LOQ are not expected. For MRLs proposed at the LOQ, risk assessment was performed considering a combined LOQ (summing up individual LOQs of glyphosate, AMPA and N-acetyl-glyphosate). For those commodities where data were insufficient to derive a MRL, EFSA considered the existing EU MRL.

**Assumptions made for the calculations**

**Scenario 1 (considering the main RD-monitoring):**
For those commodities having a CXL higher than the EU MRL proposal, the median residue levels from the EU scenario were replaced by the median residue levels derived by JMPR. CXLs for sweet corn, cotton seeds, soyabeans, maize and all livestock commodities having a different residue definition (not comparable with the definition derived by EFSA), could not be included in the calculation.

**Scenario 2 (considering the optional RD-monitoring):**
For those commodities having a CXL higher than the EU MRL proposal, the median residue levels from the EU scenario were replaced by the median residue levels derived by JMPR. CXLs for sweet corn, cotton seeds, soyabeans, maize, dry beans, dry lentils, dry peas, sunflower seeds, sugar canes and all livestock commodities having a different residue definition (not comparable with the optional definition), could not be included in the calculation.

---

**B.3.2. Consumer risk assessment with consideration of the existing CXLs**

**ADI 0.5 mg/kg bw per day (EFSA, 2015)**

**Highest IEDI, according to EFSA PRIMo**

| Scenario 1 (considering the main RD-monitoring): | 18.8% ADI (UK toddler) |
| Scenario 2 (considering the optional RD-monitoring): | 19.1% ADI (UK toddler) |

**Assumptions made for the calculations**

**Scenario 1 (considering the main RD-monitoring):**
For those commodities having a CXL higher than the EU MRL proposal, the median residue levels from the EU scenario were replaced by the median residue levels derived by JMPR. CXLs for sweet corn, cotton seeds, soyabeans, maize and all livestock commodities having a different residue definition (not comparable with the definition derived by EFSA), could not be included in the calculation.

**Scenario 2 (considering the optional RD-monitoring):**
For those commodities having a CXL higher than the EU MRL proposal, the median residue levels from the EU scenario were replaced by the median residue levels derived by JMPR. CXLs for sweet corn, cotton seeds, soyabeans, maize, dry beans, dry lentils, dry peas, sunflower seeds, sugar canes and all livestock commodities having a different residue definition (not comparable with the optional definition), could not be included in the calculation.

---

ARfD 0.5 mg/kg bw per day (EFSA, 2015)

**Highest IESTI, according to EFSA PRIMo**

| Scenario 1 (considering the main RD-monitoring): | 91% ARfD (sugar beetroots) |
| Scenario 2 (considering the optional RD-monitoring): | 91% ARfD (sugar beetroots) |
Assumptions made for the calculations

Scenario 1 (considering the main RD-monitoring):
For those commodities having a CXL higher than the EU MRL proposal, the highest residue levels from the EU scenario were replaced by the highest residue levels derived by JMPR. CXLs for sweet corn, cotton seeds, soyabeans, maize and all livestock commodities having a different residue definition (not comparable with the definition derived by EFSA), could not be included in the calculation.

Scenario 2 (considering the optional RD-monitoring):
For those commodities having a CXL higher than the EU MRL proposal, the median residue levels from the EU scenario were replaced by the median residue levels derived by JMPR. CXLs for sweet corn, cotton seeds, soyabeans, maize, dry beans, dry lentils, dry peas, sunflower seeds, sugar canes and all livestock commodities having a different residue definition (not comparable with the optional definition), could not be included in the calculation.

B.4. Proposed MRLs

B.4.1. Main residue definition for enforcement

| Code number | Commodity             | Existing EU MRL (mg/kg) | Existing CXL (mg/kg) | Outcome of the review | Comment |
|-------------|-----------------------|-------------------------|----------------------|-----------------------|---------|
| 110010      | Grapefruits           | 0.1*                    | –                    | 0.05*                 | Recommended(a) |
| 110020      | Oranges               | 0.5                     | –                    | 0.05*                 | Recommended(a) |
| 110030      | Lemons                | 0.1*                    | –                    | 0.05*                 | Recommended(a) |
| 110040      | Limes                 | 0.1*                    | –                    | 0.05*                 | Recommended(a) |
| 110050      | Mandarins             | 0.5                     | –                    | 0.05*                 | Recommended(a) |
| 120010      | Almonds               | 0.1*                    | –                    | 0.05*                 | Recommended(a) |
| 120020      | Brazil nuts           | 0.1*                    | –                    | 0.05*                 | Recommended(a) |
| 120030      | Cashew nuts           | 0.1*                    | –                    | 0.05*                 | Recommended(a) |
| 120040      | Chestnuts             | 0.1*                    | –                    | 0.05*                 | Recommended(a) |
| 120050      | Coconuts              | 0.1*                    | –                    | 0.05*                 | Recommended(a) |
| 120060      | Hazelnuts/cobnuts     | 0.1*                    | –                    | 0.05*                 | Recommended(a) |
| 120070      | Macadamias            | 0.1*                    | –                    | 0.05*                 | Recommended(a) |
| 120080      | Pecans                | 0.1*                    | –                    | 0.05*                 | Recommended(a) |
| 120090      | Pine nut kernels      | 0.1*                    | –                    | 0.05*                 | Recommended(a) |
| 120100      | Pistachios            | 0.1*                    | –                    | 0.05*                 | Recommended(a) |
| 120110      | Walnuts               | 0.1*                    | –                    | 0.05*                 | Recommended(a) |
| 130010      | Apples                | 0.1*                    | –                    | 0.05*                 | Recommended(a) |
| 130020      | Pears                 | 0.1*                    | –                    | 0.05*                 | Recommended(a) |
| 130030      | Quinces               | 0.1*                    | –                    | 0.05*                 | Recommended(a) |
| 130040      | Medlars               | 0.1*                    | –                    | 0.05*                 | Recommended(a) |
| 130050      | Loquats/Japanese medlars | 0.1*                    | –                    | 0.05*                 | Recommended(a) |
| 140010      | Apricots              | 0.1*                    | –                    | 0.05*                 | Recommended(a) |
| 140020      | Cherries (sweet)      | 0.1*                    | –                    | 0.05*                 | Recommended(a) |
| 140030      | Peaches               | 0.1*                    | –                    | 0.05*                 | Recommended(a) |
| 140040      | Plums                 | 0.1*                    | –                    | 0.05*                 | Recommended(a) |
| 151010      | Table grapes          | 0.5                     | –                    | 0.05*                 | Recommended(a) |
| 151020      | Wine grapes           | 0.5                     | –                    | 0.05*                 | Recommended(a) |
| 152000      | Strawberries          | 0.1*                    | –                    | 0.05*                 | Further consideration needed(b) |
| 153010      | Blackberries          | 0.1*                    | –                    | 0.05*                 | Further consideration needed(b) |
| 153020      | Dewberries            | 0.1*                    | –                    | 0.05*                 | Further consideration needed(b) |
| 153030      | Raspberries (red and yellow) | 0.1*                    | –                    | 0.05*                 | Further consideration needed(b) |
| Code number | Commodity                                      | Existing EU MRL (mg/kg) | Existing CXL (mg/kg) | Outcome of the review | Comment                      |
|-------------|-----------------------------------------------|-------------------------|----------------------|-----------------------|------------------------------|
| 154010      | Blueberries                                  | 0.1*                    | –                    | 0.05*                 | Further consideration needed(b) |
| 154020      | Cranberries                                  | 0.1*                    | –                    | 0.05*                 | Further consideration needed(b) |
| 154030      | Currants (black, red and white)               | 0.1*                    | –                    | 0.05*                 | Further consideration needed(b) |
| 154040      | Gooseberries (green, red and yellow)          | 0.1*                    | –                    | 0.05*                 | Further consideration needed(b) |
| 154050      | Rose hips                                    | 0.1*                    | –                    | 0.05*                 | Further consideration needed(b) |
| 154060      | Mulberries (black and white)                  | 0.1*                    | –                    | 0.05*                 | Further consideration needed(b) |
| 154070      | Azaroles/Mediterranean medlars                | 0.1*                    | –                    | 0.05*                 | Further consideration needed(b) |
| 154080      | Elderberries                                 | 0.1*                    | –                    | 0.05*                 | Further consideration needed(b) |
| 161020      | Figs                                          | 0.1*                    | –                    | 0.05*                 | Recommended(a)               |
| 161030      | Table olives                                 | 1                       | –                    | 0.05*                 | Recommended(a)               |
| 161040      | Kumquats                                      | 0.1*                    | –                    | 0.05*                 | Recommended(a)               |
| 161060      | Kaki/Japanese persimmons                      | 0.1*                    | –                    | 0.05*                 | Recommended(a)               |
| 162010      | Kiwi fruits (green, red, yellow)              | 0.1*                    | –                    | 0.05*                 | Recommended(a)               |
| 162020      | Litchis/lychees                              | 0.1*                    | –                    | 0.05*                 | Recommended(a)               |
| 162030      | Passionfruits/maracujas                       | 0.1*                    | –                    | 0.05*                 | Recommended(a)               |
| 163010      | Avocados                                      | 0.1*                    | –                    | 0.05*                 | Recommended(a)               |
| 163020      | Bananas                                       | 0.1*                    | 0.05*                | 0.05*                 | Recommended(f)               |
| 163030      | Mangoes                                       | 0.1*                    | –                    | 0.05*                 | Recommended(a)               |
| 163040      | Papayas                                       | 0.1*                    | –                    | 0.05*                 | Recommended(a)               |
| 163050      | Granate apples/pomegranates                   | 0.1*                    | –                    | 0.05*                 | Recommended(a)               |
| 163060      | Cherimoyas                                    | 0.1*                    | –                    | 0.05*                 | Recommended(a)               |
| 211000      | Potatoes                                      | 0.5                     | –                    | 1                     | Further consideration needed(b) |
| 212010      | Cassava roots/manioc                          | 0.1*                    | –                    | 0.05*                 | Further consideration needed(b) |
| 212020      | Sweet potatoes                                | 0.1*                    | –                    | 0.05*                 | Further consideration needed(b) |
| 212030      | Yams                                          | 0.1*                    | –                    | 0.05*                 | Further consideration needed(b) |
| 212040      | Arrowroots                                    | 0.1*                    | –                    | 0.05*                 | Further consideration needed(b) |
| 213010      | Beetroots                                     | 0.1*                    | –                    | 0.05*                 | Further consideration needed(b) |
| 213020      | Carrots                                       | 0.1*                    | –                    | 0.05*                 | Recommended(a)               |
| 213030      | Celeriacs/turip rooted celeries               | 0.1*                    | –                    | 0.05*                 | Further consideration needed(b) |
| 213040      | Horseradishes                                 | 0.1*                    | –                    | 0.05*                 | Further consideration needed(b) |
| 213050      | Jerusalem artichokes                          | 0.1*                    | –                    | 0.05*                 | Further consideration needed(b) |
| 213060      | Parsnips                                      | 0.1*                    | –                    | 0.05*                 | Further consideration needed(b) |
| 213070      | Parsley roots/Hamburg roots parsley           | 0.1*                    | –                    | 0.05*                 | Further consideration needed(b) |
| 213080      | Radishes                                      | 0.1*                    | –                    | 0.05*                 | Further consideration needed(b) |
| 213090      | Salsifies                                     | 0.1*                    | –                    | 0.05*                 | Further consideration needed(b) |
| 213100      | Swedes/rutabagas                              | 0.1*                    | –                    | 0.05*                 | Further consideration needed(b) |
| 213110      | Turnips                                       | 0.1*                    | –                    | 0.05*                 | Further consideration needed(b) |
| 220010      | Garlic                                        | 0.1*                    | –                    | 0.05*                 | Further consideration needed(b) |
| 220020      | Onions                                        | 0.1*                    | –                    | 0.05*                 | Further consideration needed(b) |
| 220030      | Shallots                                      | 0.1*                    | –                    | 0.05*                 | Further consideration needed(b) |
| Code number | Commodity                                    | Existing EU MRL (mg/kg) | Existing CXL (mg/kg) | Outcome of the review | Comment                  |
|-------------|----------------------------------------------|-------------------------|----------------------|-----------------------|--------------------------|
| 220040      | Spring onions/green onions and Welsh onions | 0.1*                    | –                    | 0.05*                 | Further consideration needed(b) |
| 231010      | Tomatoes                                     | 0.1*                    | –                    | 0.05*                 | Recommended(a)           |
| 231020      | Sweet peppers/bell peppers                   | 0.1*                    | –                    | 0.05*                 | Further consideration needed(b) |
| 231030      | Aubergines/eggplants                          | 0.1*                    | –                    | 0.05*                 | Recommended(a)           |
| 231040      | Okra/lady’s fingers                           | 0.1*                    | –                    | 0.05*                 | Further consideration needed(b) |
| 232010      | Cucumbers                                    | 0.1*                    | –                    | 0.05*                 | Further consideration needed(b) |
| 232020      | Gherkins                                     | 0.1*                    | –                    | 0.05*                 | Further consideration needed(b) |
| 232030      | Courgettes                                   | 0.1*                    | –                    | 0.05*                 | Further consideration needed(b) |
| 233010      | Aubergines/eggplants                          | 0.1*                    | –                    | 0.05*                 | Further consideration needed(b) |
| 233020      | Pumpkins                                     | 0.1*                    | –                    | 0.05*                 | Further consideration needed(b) |
| 233030      | Watermelons                                  | 0.1*                    | –                    | 0.05*                 | Further consideration needed(b) |
| 241010      | Broccoli                                     | 0.1*                    | –                    | 0.05*                 | Further consideration needed(b) |
| 241020      | Cauliflowers                                 | 0.1*                    | –                    | 0.05*                 | Further consideration needed(b) |
| 242010      | Brussels sprouts                             | 0.1*                    | –                    | 0.05*                 | Further consideration needed(b) |
| 242020      | Head cabbages                                | 0.1*                    | –                    | 0.05*                 | Further consideration needed(b) |
| 243010      | Chinese cabbages/pe-tsai                     | 0.1*                    | –                    | 0.05*                 | Further consideration needed(b) |
| 243020      | Kales                                        | 0.1*                    | –                    | 0.05*                 | Further consideration needed(b) |
| 244000      | Kohlrabies                                    | 0.1*                    | –                    | 0.05*                 | Further consideration needed(b) |
| 251010      | Lamb’s lettuces/corn salads                   | 0.1*                    | –                    | 0.05*                 | Further consideration needed(b) |
| 251020      | Lettuces                                     | 0.1*                    | –                    | 0.05*                 | Further consideration needed(b) |
| 251030      | Escaroles/broadleaved endives                 | 0.1*                    | –                    | 0.05*                 | Further consideration needed(b) |
| 251040      | Cresses and other sprouts and shoots          | 0.1*                    | –                    | 0.05*                 | Further consideration needed(b) |
| 251050      | Land cresses                                  | 0.1*                    | –                    | 0.05*                 | Further consideration needed(b) |
| 251060      | Roman rocket/rucola                           | 0.1*                    | –                    | 0.05*                 | Further consideration needed(b) |
| 251070      | Red mustards                                 | 0.1*                    | –                    | 0.05*                 | Further consideration needed(b) |
| 251080      | Baby leaf crops (including brassica species)  | 0.1*                    | –                    | 0.05*                 | Further consideration needed(b) |
| 252010      | Spinaches                                    | 0.1*                    | –                    | 0.05*                 | Further consideration needed(b) |
| 252020      | Purslanes                                    | 0.1*                    | –                    | 0.05*                 | Further consideration needed(b) |
| 252030      | Chards/beet leaves                            | 0.1*                    | –                    | 0.05*                 | Further consideration needed(b) |
| 253000      | Grape leaves and similar species              | 0.1*                    | –                    | 0.05*                 | Further consideration needed(b) |
| 254000      | Watercresses                                 | 0.1*                    | –                    | 0.05*                 | Further consideration needed(b) |
| 255000      | Witloofs/Belgian endives                     | 0.1*                    | –                    | 0.05*                 | Further consideration needed(b) |
| 256010      | Chervil                                      | 0.1*                    | –                    | 0.05*                 | Further consideration needed(b) |
| 256020      | Chives                                       | 0.1*                    | –                    | 0.05*                 | Further consideration needed(b) |
| 256030      | Celery leaves                                | 0.1*                    | –                    | 0.05*                 | Further consideration needed(b) |
| 256040      | Parsley                                      | 0.1*                    | –                    | 0.05*                 | Further consideration needed(b) |
| 256050      | Sage                                         | 0.1*                    | –                    | 0.05*                 | Further consideration needed(b) |
| 256060      | Rosemary                                     | 0.1*                    | –                    | 0.05*                 | Further consideration needed(b) |
| 256070      | Thyme                                        | 0.1*                    | –                    | 0.05*                 | Further consideration needed(b) |
| 256080      | Basil and edible flowers                     | 0.1*                    | –                    | 0.05*                 | Further consideration needed(b) |
| 256090      | Laurel/bay leave                             | 0.1*                    | –                    | 0.05*                 | Further consideration needed(b) |
| 256100      | Tarragon                                     | 0.1*                    | –                    | 0.05*                 | Further consideration needed(b) |
| 260010      | Beans (with pods)                             | 0.1*                    | –                    | 0.05*                 | Recommended(a)           |
| Code number | Commodity                              | Existing EU MRL (mg/kg) | Existing CXL (mg/kg) | Outcome of the review | Comment |
|-------------|----------------------------------------|-------------------------|----------------------|-----------------------|---------|
| 260020      | Beans (without pods)                   | 0.1*                    | -                    | 0.05*                 | Recommended*(a) |
| 260030      | Peas (with pods)                       | 0.1*                    | -                    | 0.05*                 | Recommended*(a) |
| 260040      | Peas (without pods)                    | 0.1*                    | -                    | 0.05*                 | Recommended*(a) |
| 260050      | Lentils (fresh)                        | 0.1*                    | -                    | 0.05*                 | Recommended*(a) |
| 270010      | Asparagus                              | 0.1*                    | -                    | 0.05*                 | Further consideration needed*(b) |
| 270020      | Cardoons                               | 0.1*                    | -                    | 0.05*                 | Further consideration needed*(b) |
| 270030      | Celeries                               | 0.1*                    | -                    | 0.05*                 | Further consideration needed*(b) |
| 270040      | Florence fennels                       | 0.1*                    | -                    | 0.05*                 | Further consideration needed*(b) |
| 270050      | Globe artichokes                       | 0.1*                    | -                    | 0.05*                 | Recommended*(a) |
| 270060      | Leeks                                  | 0.1*                    | -                    | 0.05*                 | Further consideration needed*(b) |
| 270070      | Rhubarbs                               | 0.1*                    | -                    | 0.05*                 | Further consideration needed*(b) |
| 270080      | Bamboo shoots                          | 0.1*                    | -                    | 0.05*                 | Further consideration needed*(b) |
| 270090      | Palm hearts                            | 0.1*                    | -                    | 0.05*                 | Further consideration needed*(b) |
| 280010      | Cultivated fungi                       | 0.1*                    | -                    | 0.1                  | Further consideration needed*(c) |
| 280020      | Wild fungi                             | 50                      | -                    | 0.05*                 | Recommended*(a) |
| 300010      | Beans (dry)                            | 2                       | 2                    | 15                   | Further consideration needed*(d) |
| 300020      | Lentils (dry)                          | 10                      | 5                    | 10                   | Further consideration needed*(d) |
| 300030      | Peas (dry)                             | 10                      | 5                    | 15                   | Further consideration needed*(d) |
| 300040      | Lupins/lupine beans (dry)              | 10                      | -                    | 15                   | Further consideration needed*(d) |
| 401010      | Linseeds                               | 10                      | -                    | 15                   | Recommended*(a) |
| 401020      | Peanuts/groundnuts                     | 0.1*                    | -                    | 0.05*                 | Further consideration needed*(b) |
| 401030      | Poppy seeds                            | 0.1*                    | -                    | 0.05*                 | Further consideration needed*(b) |
| 401040      | Sesame seeds                           | 0.1*                    | -                    | 0.05*                 | Further consideration needed*(b) |
| 401050      | Sunflower seeds                        | 20                      | 7                    | 30                   | Further consideration needed*(d) |
| 401080      | Mustard seeds                          | 10                      | -                    | 10                   | Further consideration needed*(c) |
| 401100      | Pumpkin seeds                          | 0.1*                    | -                    | 0.05*                 | Further consideration needed*(b) |
| 401110      | Safflower seeds                        | 0.1*                    | -                    | 0.05*                 | Further consideration needed*(b) |
| 401120      | Borage seeds                           | 0.1*                    | -                    | 10                   | Recommended*(a) |
| 401130      | Gold of pleasure seeds                 | 0.1                     | -                    | 0.05*                 | Further consideration needed*(b) |
| 401140      | Hemp seeds                             | 0.1*                    | -                    | 0.05*                 | Further consideration needed*(b) |
| 401150      | Castor beans                           | 0.1                     | -                    | 0.05*                 | Further consideration needed*(b) |
| 402010      | Olives for oil production              | 1                       | -                    | 30                   | Recommended*(a) |
| 402020      | Oil palms kernels                      | 0.1                     | -                    | 0.05*                 | Recommended*(a) |
| 402030      | Oil palms fruits                       | 0.1                     | -                    | 0.05*                 | Further consideration needed*(b) |
| 402040      | Kapok                                   | 0.1                     | -                    | 0.05*                 | Recommended*(a) |
| 500010      | Barley grains                          | 20                      | 30                   | 30                   | Recommended*(f) |
| 500020      | Buckwheat and other pseudo-cereal grains | 0.1*                | 30                   | 30                   | Recommended*(h) |
| 500040      | Common millet/proso millet grains       | 0.1*                    | 30                   | 30                   | Recommended*(h) |
| 500050      | Oat grains                              | 20                      | 30                   | 30                   | Recommended*(f) |
| 500060      | Rice grains                             | 0.1*                    | -                    | 0.1                  | Further consideration needed*(c) |
| 500070      | Rye grains                              | 10                      | 30                   | 30                   | Recommended*(h) |
| 500080      | Sorghum grains                          | 20                      | 30                   | 30                   | Recommended*(m) |
| 500090      | Wheat grains                            | 10                      | 30                   | 30                   | Recommended*(k) |
| 610000      | Teas                                    | 2                       | -                    | 0.05*                 | Further consideration needed*(b) |
| 620000      | Coffee beans                            | 0.1                     | -                    | 0.05*                 | Further consideration needed*(b) |
| Code number | Commodity                                      | Existing EU MRL (mg/kg) | Existing CXL (mg/kg) | Outcome of the review |
|------------|-----------------------------------------------|-------------------------|---------------------|-----------------------|
| 631000     | Herbal infusions from flowers                 | 2*                      | –                   | 0.05* Further consideration needed(b) |
| 632000     | Herbal infusions from leaves and herbs        | 2*                      | –                   | 0.05* Further consideration needed(b) |
| 633000     | Herbal infusions from roots                   | 2*                      | –                   | 0.05* Further consideration needed(b) |
| 650000     | Carobs/Saint John's breads                   | 0.1*                    | –                   | 0.05* Further consideration needed(b) |
| 700000     | Hops                                          | 0.1*                    | –                   | 0.05* Further consideration needed(b) |
| 810000     | Seed spices                                   | 0.1*                    | –                   | 0.05* Further consideration needed(b) |
| 820000     | Fruit spices                                  | 0.1*                    | –                   | 0.05* Further consideration needed(b) |
| 830000     | Bark spices                                   | 0.1*                    | –                   | 0.05* Further consideration needed(b) |
| 840000     | Root and rhizome spices                       | 0.1*                    | –                   | 0.05* Further consideration needed(b) |
| 850000     | Bud spices                                    | 0.1*                    | –                   | 0.05* Further consideration needed(b) |
| 860000     | Flower pistil spices                          | 0.1*                    | –                   | 0.05* Further consideration needed(b) |
| 870000     | Aril spices                                   | 0.1*                    | –                   | 0.05* Further consideration needed(b) |
| 900020     | Sugar canes                                   | 0.1*                    | 2                   | 2 Recommended(m) |
| 900030     | Chicory roots                                 | 0.1*                    | –                   | 0.05* Further consideration needed(b) |
| –          | Other commodities of plant origin             | –                       | –                   | Further consideration needed(i) |

**Enforcement residue definition (existing):** glyphosate

**Enforcement residue definition (proposed):** sum of glyphosate, AMPA and N-acetyl-glyphosate, expressed as glyphosate

| Code number | Commodity                                      | Existing EU MRL (mg/kg) | Existing CXL (mg/kg) | Outcome of the review |
|------------|-----------------------------------------------|-------------------------|---------------------|-----------------------|
| 234000     | Sweet corn                                    | 3                       | 3                   | 3 Further consideration needed(j) |
| 401060     | Rapeseeds/canola seeds                        | 10                      | 30                  | 30 Further consideration needed(k) |
| 401070     | Soyabeans                                     | 20                      | 20                  | 5 Further consideration needed(k) |
| 401090     | Cotton seeds                                  | 10                      | 40                  | 60 Further consideration needed(k) |
| 500030     | Maize/corn grains                             | 1                       | 5                   | 4 Further consideration needed(k) |
| 900010     | Sugar beetroot                                | 15                      | 15                  | 15 Further consideration needed(k) |
| 1011010    | Swine muscle                                  | 0.05*                   | 0.05*               | 0.2 Further consideration needed(j) |
| 1011020    | Swine fat tissue                              | 0.05*                   | 0.05*               | 0.2* Further consideration needed(j) |
| 1011030    | Swine liver                                   | 0.05*                   | 0.5                 | 0.4 Further consideration needed(j) |
| 1011040    | Swine kidney                                  | 0.5                     | 0.5                 | 3 Further consideration needed(j) |
| 1012010    | Bovine muscle                                 | 0.05*                   | 0.05*               | 0.2 Further consideration needed(j) |
| 1012020    | Bovine fat tissue                             | 0.05*                   | 0.05*               | 0.2* Further consideration needed(j) |
| 1012030    | Bovine liver                                  | 0.2                     | 5                   | 0.7 Further consideration needed(j) |
| 1012040    | Bovine kidney                                 | 2                       | 5                   | 7 Further consideration needed(j) |
| 1013010    | Sheep muscle                                  | 0.05*                   | 0.05*               | 0.2 Further consideration needed(j) |
| 1013020    | Sheep fat tissue                              | 0.05*                   | 0.05*               | 0.3 Further consideration needed(j) |
| 1013030    | Sheep liver                                   | 0.05*                   | 5                   | 0.9 Further consideration needed(j) |
| 1013040    | Sheep kidney                                  | 0.05*                   | 5                   | 10 Further consideration needed(j) |
| 1014010    | Goat muscle                                   | 0.05*                   | 0.05*               | 0.2 Further consideration needed(j) |
| 1014020    | Goat fat tissue                               | 0.05*                   | 0.05*               | 0.3 Further consideration needed(j) |
| 1014030    | Goat liver                                    | 0.05*                   | 5                   | 0.9 Further consideration needed(j) |
| 1014040    | Goat kidney                                   | 0.05*                   | 5                   | 10 Further consideration needed(j) |
| 1015010    | Equine muscle                                 | 0.05*                   | 0.05*               | 0.2 Further consideration needed(j) |
| 1015020    | Equine fat tissue                             | 0.05*                   | 0.05*               | 0.2* Further consideration needed(j) |
| 1015030    | Equine liver                                  | 0.05*                   | 5                   | 0.7 Further consideration needed(j) |
| 1015040    | Equine kidney                                 | 0.05*                   | 5                   | 7 Further consideration needed(j) |
| 1016010    | Poultry muscle                                | 0.05*                   | 0.05*               | 0.2 Further consideration needed(j) |
| Code number | Commodity          | Existing EU MRL (mg/kg) | Existing CXL (mg/kg) | Outcome of the review MRL (mg/kg) | Comment                              |
|-------------|--------------------|-------------------------|----------------------|----------------------------------|--------------------------------------|
| 1016020     | Poultry fat tissue | 0.05*                   | 0.05*                | 0.2*                             | Further consideration needed         |
| 1016030     | Poultry liver      | 0.05*                   | 0.5                  | 0.2*                             | Further consideration needed         |
| 1020010     | Cattle milk        | 0.05*                   | 0.05                 | 0.1*                             | Further consideration needed         |
| 1020020     | Sheep milk         | 0.05*                   | 0.05                 | 0.1*                             | Further consideration needed         |
| 1020030     | Goat milk          | 0.05*                   | 0.05                 | 0.1*                             | Further consideration needed         |
| 1020040     | Horse milk         | 0.05*                   | 0.05                 | 0.1*                             | Further consideration needed         |
| 1030000     | Birds eggs         | 0.05*                   | 0.05*                | 0.1*                             | Further consideration needed         |
|             | Other commodities  | –                       | –                    |                                  |                                      |

MRL: maximum residue level; CXL: codex maximum residue limit.

*: Indicates that the MRL is set at the limit of quantification.

(a): MRL is derived from a GAP evaluated at EU level, which is fully supported by data and for which no risk to consumers is identified; no CXL is available (combination G-I in Appendix E).

(b): Tentative MRL is derived from a GAP evaluated at EU level, which is not fully supported by data but for which no risk to consumers was identified; no CXL is available (combination E-I in Appendix E).

(c): GAP evaluated at EU level is not supported by data but no risk to consumers was identified for the existing EU MRL; no CXL is available (combination C-I in Appendix E).

(d): Tentative MRL is derived from a GAP evaluated at EU level, which is not fully supported by data but for which no risk to consumers was identified; existing CXL is covered by the tentative MRL (combination E-III in Appendix E).

(e): GAP evaluated at EU level is not supported by data but no risk to consumers was identified for the existing EU MRL; existing CXL is covered by the existing EU MRL (combination C-III in Appendix E).

(f): MRL is derived from a GAP evaluated at EU level, which is fully supported by data and for which no risk to consumers is identified; existing CXL is covered by the recommended MRL (combination G-III in Appendix E).

(g): MRL is derived from the existing CXL, which is supported by data and for which no risk to consumers is identified; GAP evaluated at EU level is not supported by data but the existing EU MRL is lower than the existing CXL (combination C-VII in Appendix E).

(h): MRL is derived from the existing CXL, which is supported by data and for which no risk to consumers is identified; GAP evaluated at EU level, which is also fully supported by data, leads to a lower MRL (combination G-VII in Appendix E).

(i): There are no relevant authorisations or import tolerances reported at EU level; no CXL is available. Either a specific LOQ or the default MRL of 0.01 mg/kg may be considered (combination A-I in Appendix E).

(j): Tentative MRL is derived from a GAP evaluated at EU level, which is not fully supported by data but for which no risk to consumers was identified; CXL is not compatible with EU residue definitions (combination E-II in Appendix E).

(k): MRL is derived from the existing CXL, which is not sufficiently supported by data but for which no risk to consumers is identified; GAP evaluated at EU level, which is also not fully supported by data, would lead to a lower tentative MRL (combination E-V in Appendix E).

(l): GAP evaluated at EU level is not supported by data but no risk to consumers was identified for the existing EU MRL; CXL is not compatible with EU residue definitions (combination C-II in Appendix E).

(m): MRL is derived from the existing CXL, which is supported by data and for which no risk to consumers is identified; GAP evaluated at EU level, which is not fully supported by data, leads to a lower tentative MRL (combination E-V in Appendix E).

**B.4.2. Optional residue definition for enforcement**

| Code number | Commodity    | Existing EU MRL (mg/kg) | Existing CXL (mg/kg) | Outcome of the review MRL (mg/kg) | Comment                              |
|-------------|--------------|-------------------------|----------------------|----------------------------------|--------------------------------------|
|             | Enforcement residue definition (existing): glyphosate |                           |                      |                                  |                                      |
|             | Enforcement residue definition (proposed – optional): sum of glyphosate, AMPA and N-acetyl-glyphosate, expressed as glyphosate |                           |                      |                                  |                                      |
| 110010      | Grapefruits  | 0.1*                    | –                    | 0.2*                             | Further consideration needed         |
| 110020      | Oranges      | 0.5                     | –                    | 0.2*                             | Further consideration needed         |
| 110030      | Lemons       | 0.1*                    | –                    | 0.2*                             | Further consideration needed         |
| 110040      | Limes        | 0.1*                    | –                    | 0.2*                             | Further consideration needed         |
| 110050      | Mandarins    | 0.5                     | –                    | 0.2*                             | Further consideration needed         |
| 120010      | Almonds      | 0.1*                    | –                    | 0.2*                             | Further consideration needed         |
| Code number | Commodity                      | Existing EU MRL (mg/kg) | Existing CXL (mg/kg) | Outcome of the review | Comment            |
|-------------|--------------------------------|-------------------------|----------------------|-----------------------|-------------------|
| 120020      | Brazil nuts                   | 0.1*                    | –                    | 0.2*                  | Further consideration needed (a) |
| 120030      | Cashew nuts                   | 0.1*                    | –                    | 0.2*                  | Further consideration needed (a) |
| 120040      | Chestnuts                     | 0.1*                    | –                    | 0.2*                  | Further consideration needed (a) |
| 120050      | Coconuts                      | 0.1*                    | –                    | 0.2*                  | Further consideration needed (a) |
| 120060      | Hazelnuts/cobnuts             | 0.1*                    | –                    | 0.2*                  | Further consideration needed (a) |
| 120070      | Macadamias                    | 0.1*                    | –                    | 0.2*                  | Further consideration needed (a) |
| 120080      | Pecans                        | 0.1*                    | –                    | 0.2*                  | Further consideration needed (a) |
| 120090      | Pine nut kernels              | 0.1*                    | –                    | 0.2*                  | Further consideration needed (a) |
| 120100      | Pistachios                    | 0.1*                    | –                    | 0.2*                  | Further consideration needed (a) |
| 120110      | Walnuts                       | 0.1*                    | –                    | 0.2*                  | Further consideration needed (a) |
| 130010      | Apples                        | 0.1*                    | –                    | 0.2*                  | Further consideration needed (a) |
| 130020      | Pears                         | 0.1*                    | –                    | 0.2*                  | Further consideration needed (a) |
| 130030      | Quinces                       | 0.1*                    | –                    | 0.2*                  | Further consideration needed (a) |
| 130040      | Medlars                       | 0.1*                    | –                    | 0.2*                  | Further consideration needed (a) |
| 130050      | Loquats/Japanese medlars      | 0.1*                    | –                    | 0.2*                  | Further consideration needed (a) |
| 140010      | Apricots                      | 0.1*                    | –                    | 0.2*                  | Further consideration needed (a) |
| 140020      | Cherries (sweet)              | 0.1*                    | –                    | 0.2*                  | Further consideration needed (a) |
| 140030      | Peaches                       | 0.1*                    | –                    | 0.2*                  | Further consideration needed (a) |
| 140040      | Plums                         | 0.1*                    | –                    | 0.2*                  | Further consideration needed (a) |
| 151010      | Table grapes                  | 0.5                     | –                    | 0.2*                  | Further consideration needed (a) |
| 151020      | Wine grapes                   | 0.5                     | –                    | 0.2*                  | Further consideration needed (a) |
| 152000      | Strawberries                  | 0.1*                    | –                    | 0.2*                  | Further consideration needed (a) |
| 153010      | Blackberries                  | 0.1*                    | –                    | 0.2*                  | Further consideration needed (a) |
| 153020      | Dewberries                    | 0.1*                    | –                    | 0.2*                  | Further consideration needed (a) |
| 153030      | Raspberries (red and yellow)  | 0.1*                    | –                    | 0.2*                  | Further consideration needed (a) |
| 154010      | Blueberries                   | 0.1*                    | –                    | 0.2*                  | Further consideration needed (a) |
| 154020      | Cranberries                   | 0.1*                    | –                    | 0.2*                  | Further consideration needed (a) |
| 154030      | Currants (black, red and white)| 0.1*                  | –                    | 0.2*                  | Further consideration needed (a) |
| 154040      | Gooseberries (green, red and yellow) | 0.1*                | –                    | 0.2*                  | Further consideration needed (a) |
| 154050      | Rose hips                     | 0.1*                    | –                    | 0.2*                  | Further consideration needed (a) |
| 154060      | Mulberries (black and white)  | 0.1*                    | –                    | 0.2*                  | Further consideration needed (a) |
| 154070      | Azaroles/Mediterranean medlars| 0.1*                    | –                    | 0.2*                  | Further consideration needed (a) |
| 154080      | Elderberries                  | 0.1*                    | –                    | 0.2*                  | Further consideration needed (a) |
| 161020      | Figs                          | 0.1*                    | –                    | 0.2*                  | Further consideration needed (a) |
| 161030      | Table olives                  | 1                      | –                    | 0.2*                  | Further consideration needed (a) |
| 161040      | Kumquats                      | 0.1*                    | –                    | 0.2*                  | Further consideration needed (a) |
| 161060      | Kaki/Japanese persimmons      | 0.1*                    | –                    | 0.2*                  | Further consideration needed (a) |
| 162010      | Kiwi fruits (green, red, yellow) | 0.1*                | –                    | 0.2*                  | Further consideration needed (a) |
| 162020      | Litchis/lychees               | 0.1*                    | –                    | 0.2*                  | Further consideration needed (a) |
| 162030      | Passionfruits/maracujas       | 0.1*                    | –                    | 0.2*                  | Further consideration needed (a) |
| 163010      | Avocados                      | 0.1*                    | –                    | 0.2*                  | Further consideration needed (a) |
| 163020      | Bananas                       | 0.1* 0.05*              | –                    | 0.2*                  | Further consideration needed (a) |
| Code number | Commodity                                | Existing EU MRL (mg/kg) | Existing CXL (mg/kg) | Outcome of the review | Comment |
|-------------|------------------------------------------|-------------------------|----------------------|-----------------------|---------|
| 163030      | Mangoes                                  | 0.1*                    | –                    | 0.2*                  | Further consideration needed(6) |
| 163040      | Papayas                                  | 0.1*                    | –                    | 0.2*                  | Further consideration needed(6) |
| 163050      | Granate apples/pomegranates              | 0.1*                    | –                    | 0.2*                  | Further consideration needed(6) |
| 163060      | Cherimoyas                               | 0.1*                    | –                    | 0.2*                  | Further consideration needed(6) |
| 211000      | Potatoes                                 | 0.5                     | –                    | 1                     | Further consideration needed(6) |
| 212010      | Cassava roots/manioc                     | 0.1*                    | –                    | 0.2*                  | Further consideration needed(6) |
| 212020      | Sweet potatoes                           | 0.1*                    | –                    | 0.2*                  | Further consideration needed(6) |
| 212030      | Yams                                     | 0.1*                    | –                    | 0.2*                  | Further consideration needed(6) |
| 212040      | Arrowroots                               | 0.1*                    | –                    | 0.2*                  | Further consideration needed(6) |
| 213010      | Beetroots                                | 0.1*                    | –                    | 0.2*                  | Further consideration needed(6) |
| 213020      | Carrots                                  | 0.1*                    | –                    | 0.2*                  | Further consideration needed(6) |
| 213030      | Celeriacs/tunip rooted celeries          | 0.1*                    | –                    | 0.2*                  | Further consideration needed(6) |
| 213040      | Horseradishes                            | 0.1*                    | –                    | 0.2*                  | Further consideration needed(6) |
| 213050      | Jerusalem artichokes                     | 0.1*                    | –                    | 0.2*                  | Further consideration needed(6) |
| 213060      | Parsnips                                 | 0.1*                    | –                    | 0.2*                  | Further consideration needed(6) |
| 213070      | Parsley roots/Hamburg roots parsley      | 0.1*                    | –                    | 0.2*                  | Further consideration needed(6) |
| 213080      | Radishes                                 | 0.1*                    | –                    | 0.2*                  | Further consideration needed(6) |
| 213090      | Salsifies                                | 0.1*                    | –                    | 0.2*                  | Further consideration needed(6) |
| 213100      | Swedes/rutabagas                         | 0.1*                    | –                    | 0.2*                  | Further consideration needed(6) |
| 213110      | Turnips                                  | 0.1*                    | –                    | 0.2*                  | Further consideration needed(6) |
| 220010      | Garlic                                   | 0.1*                    | –                    | 0.2*                  | Further consideration needed(6) |
| 220020      | Onions                                   | 0.1*                    | –                    | 0.2*                  | Further consideration needed(6) |
| 220030      | Shallots                                 | 0.1*                    | –                    | 0.2*                  | Further consideration needed(6) |
| 220040      | Spring onions/green onions and Welsh onions | 0.1*                | –                    | 0.2*                  | Further consideration needed(6) |
| 231010      | Tomatoes                                 | 0.1*                    | –                    | 0.2*                  | Further consideration needed(6) |
| 231020      | Sweet peppers/bell peppers               | 0.1*                    | –                    | 0.2*                  | Further consideration needed(6) |
| 231030      | Aubergines/eggplants                     | 0.1*                    | –                    | 0.2*                  | Further consideration needed(6) |
| 231040      | Okra/lady’s fingers                      | 0.1*                    | –                    | 0.2*                  | Further consideration needed(6) |
| 232010      | Cucumbers                                | 0.1*                    | –                    | 0.2*                  | Further consideration needed(6) |
| 232020      | Gherkins                                 | 0.1*                    | –                    | 0.2*                  | Further consideration needed(6) |
| 232030      | Courgettes                               | 0.1*                    | –                    | 0.2*                  | Further consideration needed(6) |
| 233010      | Melons                                   | 0.1*                    | –                    | 0.2*                  | Further consideration needed(6) |
| 233020      | Pumpkins                                 | 0.1*                    | –                    | 0.2*                  | Further consideration needed(6) |
| 233030      | Watermelons                              | 0.1*                    | –                    | 0.2*                  | Further consideration needed(6) |
| 234000      | Sweet corn                               | 3                       | 3                    | 3                     | Further consideration needed(6) |
| 241010      | Broccoli                                 | 0.1*                    | –                    | 0.2*                  | Further consideration needed(6) |
| 241020      | Cauliflowers                             | 0.1*                    | –                    | 0.2*                  | Further consideration needed(6) |
| 242010      | Brussels sprouts                         | 0.1*                    | –                    | 0.2*                  | Further consideration needed(6) |
| 242020      | Head cabbages                            | 0.1*                    | –                    | 0.2*                  | Further consideration needed(6) |
| 243010      | Chinese cabbages/pe-tsai                 | 0.1*                    | –                    | 0.2*                  | Further consideration needed(6) |
| 243020      | Kales                                    | 0.1*                    | –                    | 0.2*                  | Further consideration needed(6) |
| 244000      | Kohlrabies                               | 0.1*                    | –                    | 0.2*                  | Further consideration needed(6) |
| 251010      | Lamb’s lettuces/corn salads              | 0.1*                    | –                    | 0.2*                  | Further consideration needed(6) |
| 251020      | Lettuces                                 | 0.1*                    | –                    | 0.2*                  | Further consideration needed(6) |
| Code number | Commodity                                | Existing EU MRL (mg/kg) | Existing CXL (mg/kg) | Outcome of the review MRL (mg/kg) | Comment                                      |
|-------------|------------------------------------------|------------------------|----------------------|-----------------------------------|----------------------------------------------|
| 251030      | Escaroles/broadleaved endives             | 0.1*                   | –                    | 0.2*                              | Further consideration needed (a)             |
| 251040      | Cresses and other sprouts and shoots      | 0.1*                   | –                    | 0.2*                              | Further consideration needed (a)             |
| 251050      | Land cresses                              | 0.1*                   | –                    | 0.2*                              | Further consideration needed (a)             |
| 251060      | Roman rocket/rucola                       | 0.1*                   | –                    | 0.2*                              | Further consideration needed (a)             |
| 251070      | Red mustards                              | 0.1*                   | –                    | 0.2*                              | Further consideration needed (a)             |
| 251080      | Baby leaf crops (including brassica species) | 0.1*               | –                    | 0.2*                              | Further consideration needed (a)             |
| 252010      | Spinaches                                 | 0.1*                   | –                    | 0.2*                              | Further consideration needed (a)             |
| 252020      | Purslanes                                 | 0.1*                   | –                    | 0.2*                              | Further consideration needed (a)             |
| 252030      | Chards/beet leaves                        | 0.1*                   | –                    | 0.2*                              | Further consideration needed (a)             |
| 253000      | Grape leaves and similar species          | 0.1*                   | –                    | 0.2*                              | Further consideration needed (a)             |
| 254000      | Watercresses                              | 0.1*                   | –                    | 0.2*                              | Further consideration needed (a)             |
| 255000      | Witloofs/Belgian endives                  | 0.1*                   | –                    | 0.2*                              | Further consideration needed (a)             |
| 256010      | Chervil                                   | 0.1*                   | –                    | 0.2*                              | Further consideration needed (a)             |
| 256020      | Chives                                    | 0.1*                   | –                    | 0.2*                              | Further consideration needed (a)             |
| 256030      | Celery leaves                             | 0.1*                   | –                    | 0.2*                              | Further consideration needed (a)             |
| 256040      | Parsley                                   | 0.1*                   | –                    | 0.2*                              | Further consideration needed (a)             |
| 256050      | Sage                                      | 0.1*                   | –                    | 0.2*                              | Further consideration needed (a)             |
| 256060      | Rosemary                                  | 0.1*                   | –                    | 0.2*                              | Further consideration needed (a)             |
| 256070      | Thyme                                     | 0.1*                   | –                    | 0.2*                              | Further consideration needed (a)             |
| 256080      | Basil and edible flowers                  | 0.1*                   | –                    | 0.2*                              | Further consideration needed (a)             |
| 256090      | Laurel/bay leaf                           | 0.1*                   | –                    | 0.2*                              | Further consideration needed (a)             |
| 256100      | Tarragon                                  | 0.1*                   | –                    | 0.2*                              | Further consideration needed (a)             |
| 260010      | Beans (with pods)                         | 0.1*                   | –                    | 0.2*                              | Further consideration needed (a)             |
| 260020      | Beans (without pods)                      | 0.1*                   | –                    | 0.2*                              | Further consideration needed (a)             |
| 260030      | Peas (with pods)                          | 0.1*                   | –                    | 0.2*                              | Further consideration needed (a)             |
| 260040      | Peas (without pods)                       | 0.1*                   | –                    | 0.2*                              | Further consideration needed (a)             |
| 260050      | Lentils (fresh)                           | 0.1*                   | –                    | 0.2*                              | Further consideration needed (a)             |
| 270010      | Asparagus                                 | 0.1*                   | –                    | 0.2*                              | Further consideration needed (a)             |
| 270020      | Cardoons                                  | 0.1*                   | –                    | 0.2*                              | Further consideration needed (a)             |
| 270030      | Celeriacs                                 | 0.1*                   | –                    | 0.2*                              | Further consideration needed (a)             |
| 270040      | Florence fennels                          | 0.1*                   | –                    | 0.2*                              | Further consideration needed (a)             |
| 270050      | Globe artichokes                          | 0.1*                   | –                    | 0.2*                              | Further consideration needed (a)             |
| 270060      | Leeks                                     | 0.1*                   | –                    | 0.2*                              | Further consideration needed (a)             |
| 270070      | Rhubarbs                                  | 0.1*                   | –                    | 0.2*                              | Further consideration needed (a)             |
| 270080      | Bamboo shoots                             | 0.1*                   | –                    | 0.2*                              | Further consideration needed (a)             |
| 270090      | Palm hearts                               | 0.1*                   | –                    | 0.2*                              | Further consideration needed (a)             |
| 280010      | Cultivated fungi                          | 0.1*                   | –                    | 0.2*                              | Further consideration needed (a)             |
| 280020      | Wild fungi                                | 50                     | –                    | 0.2*                              | Further consideration needed (a)             |
| 300010      | Beans (dry)                               | 2                      | 2                    | 30                                | Further consideration needed (a)             |
| 300020      | Lentils (dry)                             | 10                     | 5                    | 20                                | Further consideration needed (a)             |
| 300030      | Peas (dry)                                | 10                     | 5                    | 30                                | Further consideration needed (a)             |
| 300040      | Lupins/lupini beans (dry)                 | 10                     | –                    | 20                                | Further consideration needed (a)             |
| 401010      | Linseeds                                  | 10                     | –                    | 15                                | Further consideration needed (a)             |
| 401020      | Peanuts/groundnuts                        | 0.1*                   | –                    | 0.2*                              | Further consideration needed (a)             |

Review of the existing MRLs for glyphosate - revised version to take into account omitted data

www.efsa.europa.eu/efsajournal 168 EFSA Journal 2019;17(10):5862
| Code number | Commodity                        | Existing EU MRL (mg/kg) | Existing CXL (mg/kg) | Outcome of the review | Comment       |
|-------------|----------------------------------|-------------------------|---------------------|-----------------------|---------------|
| 401030      | Poppy seeds                      | 0.1*                    | –                   | 0.2*                  | Further consideration needed (a) |
| 401040      | Sesame seeds                     | 0.1*                    | –                   | 0.2*                  | Further consideration needed (a) |
| 401050      | Sunflower seeds                  | 20                      | 7                   | 30                    | Further consideration needed (a) |
| 401060      | Rapeseeds/canola seeds           | 10                      | 30                  | 30                    | Further consideration needed (a) |
| 401070      | Soyabeans                        | 20                      | 20                  | 5                     | Further consideration needed (a) |
| 401080      | Mustard seeds                    | 10                      | –                   | 10                    | Further consideration needed (a) |
| 401090      | Cotton seeds                     | 10                      | 40                  | 60                    | Further consideration needed (a) |
| 401100      | Pumpkin seeds                    | 0.1*                    | –                   | 0.2*                  | Further consideration needed (a) |
| 401110      | Safflower seeds                  | 0.1*                    | –                   | 0.2*                  | Further consideration needed (a) |
| 401120      | Borage seeds                     | 0.1                     | –                   | 10                    | Further consideration needed (a) |
| 401130      | Gold of pleasure seeds           | 0.1                     | –                   | 0.2*                  | Further consideration needed (a) |
| 401140      | Hemp seeds                       | 0.1*                    | –                   | 0.2*                  | Further consideration needed (a) |
| 401150      | Castor beans                     | 0.1                     | –                   | 0.2*                  | Further consideration needed (a) |
| 402010      | Olives for oil production        | 1                       | –                   | 30                    | Further consideration needed (a) |
| 402020      | Oil palms kernels                | 0.1                     | –                   | 0.2*                  | Further consideration needed (a) |
| 402030      | Oil palms fruits                 | 0.1                     | –                   | 0.2*                  | Further consideration needed (a) |
| 402040      | Kapok                             | 0.1                     | –                   | 0.2*                  | Further consideration needed (a) |
| 500010      | Barley grains                    | 20                      | 30                  | 30                    | Further consideration needed (a) |
| 500020      | Buckwheat and other pseudo-cereal grains | 0.1* | 30            | 30                    | Further consideration needed (a) |
| 500030      | Maize/corn grains                | 1                       | 5                   | 4                     | Further consideration needed (a) |
| 500040      | Common millet/proso millet grains | 0.1*                  | 30                  | 30                    | Further consideration needed (a) |
| 500050      | Oat grains                        | 20                      | 30                  | 30                    | Further consideration needed (a) |
| 500060      | Rice grains                       | 0.1*                    | –                   | 0.2*                  | Further consideration needed (a) |
| 500070      | Rye grains                        | 10                      | 30                  | 30                    | Further consideration needed (a) |
| 500080      | Sorghum grains                    | 20                      | 30                  | 30                    | Further consideration needed (a) |
| 500090      | Wheat grains                      | 10                      | 30                  | 30                    | Further consideration needed (a) |
| 610000      | Teas                              | 2                       | –                   | 0.2*                  | Further consideration needed (a) |
| 620000      | Coffee beans                      | 0.1                     | –                   | 0.2*                  | Further consideration needed (a) |
| 631000      | Herbal infusions from flowers     | 2*                      | –                   | 0.2*                  | Further consideration needed (a) |
| 632000      | Herbal infusions from leaves and herbs | 2*                  | –                   | 0.2*                  | Further consideration needed (a) |
| 633000      | Herbal infusions from roots       | 2*                      | –                   | 0.2*                  | Further consideration needed (a) |
| 650000      | Carobs/Saint John's breads       | 0.1*                    | –                   | 0.2*                  | Further consideration needed (a) |
| 700000      | Hops                              | 0.1*                    | –                   | 0.2*                  | Further consideration needed (a) |
| 810000      | Seed spices                       | 0.1*                    | –                   | 0.2*                  | Further consideration needed (a) |
| 820000      | Fruit spices                      | 0.1*                    | –                   | 0.2*                  | Further consideration needed (a) |
| 830000      | Bark spices                       | 0.1*                    | –                   | 0.2*                  | Further consideration needed (a) |
| 840000      | Root and rhizome spices           | 0.1*                    | –                   | 0.2*                  | Further consideration needed (a) |
| 850000      | Bud spices                        | 0.1*                    | –                   | 0.2*                  | Further consideration needed (a) |
| 860000      | Flower pistil spices              | 0.1*                    | –                   | 0.2*                  | Further consideration needed (a) |
| 870000      | Aril spices                       | 0.1*                    | –                   | 0.2*                  | Further consideration needed (a) |
| 900010      | Sugar beetroots                   | 15                      | 15                  | 15                    | Further consideration needed (a) |
| 900020      | Sugar canes                       | 0.1*                    | 2                   | 0.2*                  | Further consideration needed (a) |
| 900030      | Chicory roots                     | 0.1*                    | –                   | 0.2*                  | Further consideration needed (a) |
| 1011010     | Swine muscle                      | 0.05*                   | 0.05*               | 0.2                   | Further consideration needed (a) |
| Code number | Commodity            | Existing EU MRL (mg/kg) | Existing CXL (mg/kg) | Outcome of the review                      |
|------------|----------------------|------------------------|---------------------|-------------------------------------------|
| 1011020    | Swine fat tissue     | 0.05*                  | 0.05*               | 0.2* Further consideration needed(c)      |
| 1011030    | Swine liver          | 0.05*                  | 0.5                 | 0.4 Further consideration needed(c)       |
| 1011040    | Swine kidney         | 0.5                    | 0.5                 | 3 Further consideration needed(c)         |
| 1012010    | Bovine muscle        | 0.05*                  | 0.05*               | 0.2 Further consideration needed(c)       |
| 1012020    | Bovine fat tissue    | 0.05*                  | 0.05*               | 0.2 Further consideration needed(c)       |
| 1012030    | Bovine liver         | 0.2                    | 5                   | 0.7 Further consideration needed(c)       |
| 1012040    | Bovine kidney        | 2                      | 5                   | 7 Further consideration needed(c)         |
| 1013010    | Sheep muscle         | 0.05*                  | 0.05*               | 0.2 Further consideration needed(c)       |
| 1013020    | Sheep fat tissue     | 0.05*                  | 0.05*               | 0.3 Further consideration needed(c)       |
| 1013030    | Sheep liver          | 0.05*                  | 5                   | 0.9 Further consideration needed(c)       |
| 1013040    | Sheep kidney         | 0.05*                  | 5                   | 10 Further consideration needed(c)        |
| 1014010    | Goat muscle          | 0.05*                  | 0.05*               | 0.2 Further consideration needed(c)       |
| 1014020    | Goat fat tissue      | 0.05*                  | 0.05*               | 0.3 Further consideration needed(c)       |
| 1014030    | Goat liver           | 0.05*                  | 5                   | 0.9 Further consideration needed(c)       |
| 1014040    | Goat kidney          | 0.05*                  | 5                   | 10 Further consideration needed(c)        |
| 1015010    | Equine muscle        | 0.05*                  | 0.05*               | 0.2 Further consideration needed(c)       |
| 1015020    | Equine fat tissue    | 0.05*                  | 0.05*               | 0.2 Further consideration needed(c)       |
| 1015030    | Equine liver         | 0.05*                  | 5                   | 0.7 Further consideration needed(c)       |
| 1015040    | Equine kidney        | 0.05*                  | 5                   | 7 Further consideration needed(c)         |
| 1016010    | Poultry muscle       | 0.05*                  | 0.05*               | 0.2 Further consideration needed(c)       |
| 1016020    | Poultry fat tissue   | 0.05*                  | 0.05*               | 0.2 Further consideration needed(c)       |
| 1016030    | Poultry liver        | 0.05*                  | 0.5                 | 0.2* Further consideration needed(c)      |
| 1020010    | Cattle milk          | 0.05*                  | 0.05                | 0.1* Further consideration needed(c)      |
| 1020020    | Sheep milk           | 0.05*                  | 0.05                | 0.1* Further consideration needed(c)      |
| 1020030    | Goat milk            | 0.05*                  | 0.05                | 0.1* Further consideration needed(c)      |
| 1020040    | Horse milk           | 0.05*                  | 0.05                | 0.1* Further consideration needed(c)      |
| 1030000    | Birds eggs           | 0.05*                  | 0.05*               | 0.1* Further consideration needed(c)      |
|            | Other commodities of animal origin | –                | –                  | Further consideration needed(h)          |

MRL: maximum residue level; CXL: codex maximum residue limit.
*: Indicates that the MRL is set at the limit of quantification.
(a): Tentative MRL is derived from a GAP evaluated at EU level, which is not fully supported by data but for which no risk to consumers was identified; no CXL is available (combination E-I in Appendix E).
(b): Tentative MRL is derived from a GAP evaluated at EU level, which is not fully supported by data but for which no risk to consumers was identified; existing CXL is covered by the tentative MRL (combination E-III in Appendix E).
(c): Tentative MRL is derived from a GAP evaluated at EU level, which is not fully supported by data but for which no risk to consumers was identified; CXL is not compatible with EU residue definitions (combination E-II in Appendix E).
(d): GAP evaluated at EU level is not supported by data but no risk to consumers was identified for the existing EU MRL; CXL is not compatible with EU residue definitions (combination C-II in Appendix E).
(e): MRL is derived from the existing CXL, which is not sufficiently supported by data but for which no risk to consumers is identified; GAP evaluated at EU level, which is also not fully supported by data, would lead to a lower tentative MRL (combination C-V in Appendix E).
(f): GAP evaluated at EU level is not supported by data but no risk to consumers was identified for the existing EU MRL; no CXL is available (combination C-I in Appendix E).
(g): MRL is derived from the existing CXL, which is not sufficiently supported by data but for which no risk to consumers is identified; GAP evaluated at EU level is not supported by data but the existing EU MRL is lower than the CXL (combination C-V in Appendix E).
(h): There are no relevant authorisations or import tolerances reported at EU level; no CXL is available. Either a specific LOQ or the default MRL of 0.01 mg/kg may be considered (combination A-I in Appendix E).
Appendix C – Pesticide Residue Intake Model (PRIMo)

- PRIMo(EU_main)

## Glyphosate

### Toxicological end points

| Status of the active substance | Code no. | LOQ (mg/kg) | Proposed LOQ | ADI (mg/kg bw per day) |
|--------------------------------|----------|-------------|---------------|------------------------|
| Code no. | LOQ (mg/kg) | Proposed LOQ | ADI (mg/kg bw per day) |
|---------|-------------|---------------|-----------------|
| LOQ     | Proposed LOQ | ADI (mg/kg bw per day) | 0.5 |

| Source of ADI: | Source of ARfD: | Year of evaluation: |
|----------------|-----------------|---------------------|
| EFSA           | EFSA             | 2015                |

| Year of evaluation: | 2015 |
|--------------------|------|

### No of diets exceeding ADI:

- 0

### Highest calculated TMDI values in % of ADI

#### Highest contributor to MS diet

| Commodity/group of commodities | 1st contributor | 2nd contributor | 3rd contributor |
|--------------------------------|-----------------|-----------------|----------------|
| Wheat                          | 0.4             | 0.5             | 0.4            |
| Barley                         | 0.4             | 0.6             | 0.2            |
| Sugar beet (root)              | 0.4             | 0.4             | 0.2            |
| Oats                           | 0.3             | 0.1             | 0.3            |
| Sugar beet (root)              | 0.2             | 0.2             | 0.1            |
| Milk and cream                 | 0.1             | 0.1             | 0.1            |
| Lentils                        | 0.1             | 0.1             | 0.1            |
| Beans                          | 0.1             | 0.1             | 0.1            |
| Barley                         | 0.1             | 0.1             | 0.1            |
| Milk and cream                 | 0.1             | 0.1             | 0.1            |
| Lentils                        | 0.1             | 0.1             | 0.1            |
| Milk and cream                 | 0.1             | 0.1             | 0.1            |
| Lentils                        | 0.1             | 0.1             | 0.1            |
| Beans                          | 0.1             | 0.1             | 0.1            |
| Barley                         | 0.1             | 0.1             | 0.1            |
| Milk and cream                 | 0.1             | 0.1             | 0.1            |
| Lentils                        | 0.1             | 0.1             | 0.1            |
| Milk and cream                 | 0.1             | 0.1             | 0.1            |
| Lentils                        | 0.1             | 0.1             | 0.1            |
| Barley                         | 0.1             | 0.1             | 0.1            |
| Milk and cream                 | 0.1             | 0.1             | 0.1            |
| Lentils                        | 0.1             | 0.1             | 0.1            |

### Conclusion:

The estimated Theoretical Maximum Daily Intakes (TMDI), based on pTMRLs were below the ADI. A long-term intake of residues of glyphosate is unlikely to present a public health concern.
The acute risk assessment is based on the ARfD.

In the IESTI 1 calculation, the variability factors were 10, 7 or 5 (according to JMPR manual 2002). For lettuce, a variability factor of 3 was used.

In the IESTI 2 calculations, the variability factor of 10 and 7 were replaced by 5. For lettuce, the calculation was performed with a variability factor of 3.

Threshold MRL is the calculated residue level which would lead to an exposure equivalent to 100% of the ARfD.

For each commodity, the calculation is based on the highest reported MS consumption per kg bw and the corresponding unit weight from the MS with the critical consumption. If no data on the unit weight was available from that MS, an average European unit weight was used for the IESTI calculation.

No exceedance of the ARfD/ADI was identified for any unprocessed commodity.

---

### Unprocessed commodities

| Commodity            | pTMRL / threshold MRL (mg/kg) | Highest % of ARfD/ADI |
|----------------------|-------------------------------|-----------------------|
| Beans                | 22/-                          | 80.4                  |
| Wheat                | 17.5/-                        | 90.6                  |
| Rye                  | 17.5/-                        | 22.1                  |
| Sweet.com            | 1.45/-                        | 21.3                  |
| Lentils              | 13.2/-                        | 18.7                  |

| Commodity            | pTMRL / threshold MRL (mg/kg) | Highest % of ARfD/ADI |
|----------------------|-------------------------------|-----------------------|
| Barley               | 22/-                          | 31.0                  |
| Wheat                | 17.5/-                        | 27.7                  |
| Rye                  | 17.5/-                        | 27.4                  |
| Lentils              | 15.2/-                        | 17.0                  |
| Peas                 | 23/-                          | 14.6                  |

| Commodity            | pTMRL / threshold MRL (mg/kg) | No of critical MRLs (IESTI 1) | No of critical MRLs (IESTI 2) |
|----------------------|-------------------------------|-------------------------------|-------------------------------|
| Wheat flour          | 17.5/-                        | ---                           | ---                           |
| Potato puree (flakes) | 0.59/-                     | ---                           | ---                           |
| Apple juice          | 0.05/-                        | ---                           | ---                           |
| Orange juice         | 0.05/-                        | ---                           | ---                           |

***) The results of the IESTI calculations are reported for at least 5 commodities. If the ARfD is exceeded for more than 5 commodities, all IESTI values > 90% of ARfD are reported.

**pTMRL: provisional temporary MRL.

### Processed commodities

| Processed commodity | pTMRL / threshold MRL (mg/kg) | Highest % of ARfD/ADI |
|---------------------|-------------------------------|-----------------------|
| Wheat flour         | 17.5/-                        | 41.4                  |
| Miso flour          | 3.3/-                         | 2.8                  |
| Potato puree (flakes) | 0.59/-                     | 1.6                  |
| Apple juice         | 0.05/-                        | 0.5                  |
| Orange juice        | 0.05/-                        | 0.5                  |

| Processed commodity | pTMRL / threshold MRL (mg/kg) | No of commodities for which ARfD/ADI is exceeded |
|---------------------|-------------------------------|---------------------------------------------------|
| Bread/pizza         | 17.5/-                        | ---                                                |
| Miso flour          | 3.3/-                         | ---                                                |
| Potato puree (flakes) | 0.59/-                     | ---                                                |
| Apple juice         | 0.05/-                        | ---                                                |
| Orange juice        | 0.05/-                        | ---                                                |

**pTMRL: provisional temporary MRL for unprocessed commodity.

**pTMRL: provisional temporary MRL for processed commodity.

Conclusion:

For glyphosate IESTI 1 and IESTI 2 were calculated for food commodities for which pTMRLs were submitted and for which consumption data are available.

No exceedance of the ARfD/ADI was identified for any unprocessed commodity.

For processed commodities, no exceedance of the ARfD/ADI was identified.
### Glyphosate

| Status of the active substance | Code no. | LOQ (mg/kg) | Proposed LOQ |
|--------------------------------|----------|-------------|--------------|
|                              |          |             |              |

#### Toxicological endpoints

| ADI (mg/kg bw per day) | ARfD (mg/kg bw) | Source of ADI | Year of evaluation |
|------------------------|-----------------|---------------|-------------------|
| 0.5                    | 0.5             | EFSA          | 2015              |

#### Chronic risk assessment – refined calculations

| Commodity/ group of commodities | TMDI (range) in % of ADI | No of diets exceeding ADI |
|---------------------------------|--------------------------|---------------------------|
|                                 | minimum – maximum        |                           |

**Conclusion:**
The estimated Theoretical Maximum Daily Intakes (TMDI), based on pTMRLs were below the ADI.
A long-term intake of residues of glyphosate is unlikely to present a public health concern.
### Acute risk assessment/children – refined calculations

The acute risk assessment is based on the ARfD.

For each commodity, the calculation is based on the highest reported MS consumption per kg bw and the corresponding unit weight from the MS with the critical consumption. If no data on the unit weight was available from that MS, an average European unit weight was used for the IESTI calculation.

In the IESTI 1 calculation, the variability factors were 10, 7 or 5 (according to JMPR manual 2002) for lettuce, a variability factor of 5 was used.

In the IESTI 2 calculations, the variability factors of 10 and 7 were replaced by 5. For lettuce, the calculation was performed with a variability factor of 3.

Threshold MRL is the calculated median level which would lead to an exposure equivalent to 100% of the ARfD.

Threshold MRL is the calculated median level which would lead to an exposure equivalent to 100% of the ARfD.

| IESTI 1 | IESTI 2 | IESTI 1 | IESTI 2 |
|---------|---------|---------|---------|
| Highest % of ARfD/ADI | Commodities | pTMRL/ threshold MRL (mg/kg) | Highest % of ARfD/ADI | Commodities | pTMRL/ threshold MRL (mg/kg) |
| Highest % of ARfD/ADI | Commodities | pTMRL/ threshold MRL (mg/kg) | Highest % of ARfD/ADI | Commodities | pTMRL/ threshold MRL (mg/kg) |
| Highest % of ARfD/ADI | Commodities | pTMRL/ threshold MRL (mg/kg) |
| Beans | 22 | 22 | Beans | 22 | 22 |
| Beans | 22 | 22 | Beans | 22 | 22 |
| Wheat flour | 18.14 | 18.14 | Wheat flour | 18.14 | 18.14 |
| Maize flour | 3.3 | 3.3 | Maize flour | 3.3 | 3.3 |
| Orange juice | 0.2 | 0.2 | Orange juice | 0.2 | 0.2 |
| Potato puree (flakes) | 0.7 | 0.7 | Potato puree (flakes) | 0.7 | 0.7 |

***) The results of the IESTI calculations are reported for at least 5 commodities. If the ARfD is exceeded for more than 5 commodities, all IESTI values > 90% of ARfD are reported.

***) pTMRL: provisional temporary MRL.

### Acute risk assessment/adults/general population – refined calculations

No exceedance of the ARfD/ADI was identified for any unprocessed commodity.

Conclusion:

For processed commodities, no exceedance of the ARfD/ADI was identified.

### Review of the existing MRLs for glyphosate - revised version to take into account omitted data

For glyphosate IESTI 1 and IESTI 2 were calculated for food commodities for which pTMRLs were submitted and for which consumption data are available.

No exceedance of the ARfD/ADI was identified for any unprocessed commodity.

No exceedance of the ARfD/ADI was identified for any unprocessed commodity.

For processed commodities, no exceedance of the ARfD/ADI was identified.

www.efsa.europa.eu/efsajournal 174 EFSA Journal 2019;17(10):5862
Glyphosate

Status of the active substance: Code no.
LOQ (mg/kg bw): Proposed LOQ:
Source of ADI: EFSA
Source of ARfD: EFSA
Year of evaluation: 2015

| Source of ADI | Year of evaluation |
|---------------|-------------------|
| EFSA          | 2015              |
| EFSA          | 2015              |

| ADI (mg/kg bw per day) | ARfD (mg/kg bw) |
|------------------------|-----------------|
| 0.5                    | 0.5             |

No of diets exceeding ADI: ---

| Highest calculated TMDI values in % of ADI | Commodity/group of commodities | 2nd contributor to MS diet in % of ADI | Commodity/group of commodities | 3rd contributor to MS diet in % of ADI | Commodity/group of commodities |
|-------------------------------------------|---------------------------------|---------------------------------------|---------------------------------|---------------------------------------|---------------------------------|
| 18.8 UK Toddler                          | Sugar beet (root)               | 2.8 Wheat                             | 0.4 Milk and cream              |
| 15.1 UK Infant                           | Sugar beet (root)               | 1.9 Wheat                             | 0.8 Milk and cream              |
| 8.6 WHO Cluster diet B                   | Wheat                           | 0.7 Milk                              | 0.4 Sugar beet (root)           |
| 8.2 DK child                             | Wheat                           | 1.7 Rice                              | 0.4 Rye                         |
| 6.2 WHO Cluster diet D                   | Wheat                           | 0.6 Oats                              | 0.3 Rye                         |
| 5.7 WHO Cluster diet E                   | Sugar beet (root)               | 0.3 Oats                              | 0.3 Rye                         |
| 5.2 IE adult                             | Sugar beet (root)               | 1.7 Wheat                             | 0.4 Milk and cream              |
| 5.0 WHO Cluster diet F                   | Wheat                           | 1.6 Sugar beet (root)                | 0.1 Oats                        |
| 4.9 NL child                             | Wheat                           | 0.6 Milk and cream                    | 0.2 Oats                        |
| 4.9 IT kids/toddler                     | Wheat                           | 0.6 Milk and cream                    | 0.2 Oats                        |
| 4.7 DE infant                            | Wheat                           | 0.6 Rice                              | 0.1 Oats                        |
| 4.4 UK vegetation                       | Sugar beet (root)               | 1.5 Wheat                             | 0.1 Oats                        |
| 4.1 UK Adult                            | Sugar beet (root)               | 1.2 Wheat                             | 0.1 Milk and cream              |
| 4.0 ES diet                             | Wheat                           | 0.3 Milk and cream                    | 0.1 Lentils                     |
| 3.5 PT General population               | Wheat                           | 0.1 Rice                              |                                |
| 3.4 WHO Regional European diet          | Wheat                           | 0.1 Milk                              | 0.1 Milk and cream              |
| 3.1 IT adult                             | Wheat                           | 0.1 Milk                              | 0.1 Milk and cream              |
| 3.1 FR toddler                          | Wheat                           | 0.1 Milk                              | 0.1 Milk and cream              |
| 3.0 SE general population 90th percentile | Wheat                         | 0.2 Milk and cream                    | 0.2 Rye                        |
| 2.9 ES adult                            | Wheat                           | 0.1 Milk                              | 0.1 Milk and cream              |
| 2.7 FR all population                   | Wheat                           | 0.1 Sunflower seed                    |                                |
| 2.6 NL general                          | Wheat                           | 0.1 Milk                              |                                |
| 2.3 DK adult                            | Wheat                           | 0.1 Milk                              |                                |
| 2.2 LT adult                            | Wheat                           | 0.1 Milk                              |                                |
| 1.6 FI adult                            | Wheat                           | 0.1 Milk                              |                                |
| 1.4 FR infant                           | Wheat                           | 0.1 Milk                              |                                |
| 0.1 NL general population               | Plum                            | 0.1 Fruit                             |                                |

Conclusion:
The estimated Theoretical Maximum Daily Intakes (TMDI), based on pTMRLs were below the ADI. A long-term intake of residues of glyphosate is unlikely to present a public health concern.
### Acute risk assessment/children – refined calculations

The acute risk assessment is based on the ARfD.

For each commodity, the calculation is based on the highest reported MS consumption per kg bw and the corresponding unit weight from the MS with the critical consumption. If no data on the unit weight was available from that MS, an average European unit weight was used for the IESTI calculation.

In the IESTI 1 calculation, the variability factors were 10, 7 or 5 (according to JMPR manual 2002); for lettuce, a variability factor of 5 was used.

In the IESTI 2 calculation, the variability factors of 10 and 7 were replaced by 5. For lettuce, the calculation was performed with a variability factor of 3.

*Threshold MRL:* calculated residue level which would lead to an exposure equivalent to 100% of the ARfD.

| Highest % of ARfD/ADI | Commodities | pTMRL/threshold MRL (mg/kg) | Highest % of ARfD/ADI | Commodities | pTMRL/threshold MRL (mg/kg) |
|-----------------------|-------------|-----------------------------|-----------------------|-------------|-----------------------------|
| 90.7                  | Sugar beet (root) | 7.1/-                   | 90.7                  | Sugar beet (root) | 7.1/-                   |
| 80.4                  | Beans        | 22/-                     | 80.4                  | Beans        | 22/-                     |
| 69.5                  | Wheat        | 20.6/-                   | 69.5                  | Wheat        | 20.6/-                   |
| 26.0                  | Rye          | 20.6/-                   | 26.0                  | Rye          | 20.6/-                   |
| 21.3                  | Sweet corn   | 1.45/-                   | 21.3                  | Sweet corn   | 1.45/-                   |

For processed commodities, no exceedance of the ARfD/ADI was identified.

The results of the IESTI calculations are reported for at least 5 commodities. If the ARfD is exceeded for more than 5 commodities, all IESTI values > 90% of ARfD are reported.

* ) pTMRL: provisional temporary MRL for unprocessed commodity.

** ) pTMRL: provisional temporary MRL.

---

### Acute risk assessment/adults/general population – refined calculations

Conclusion:

For glyphosate, IESTI 1 and IESTI 2 were calculated for food commodities for which pTMRLs were submitted and for which consumption data are available.

In the IESTI 1 calculation, the variability factors were 10, 7 or 5 (according to JMPR manual 2002); for lettuce, a variability factor of 5 was used.

In the IESTI 2 calculations, the variability factors of 10 and 7 were replaced by 5. For lettuce, the calculation was performed with a variability factor of 3.

Threshold MRL: calculated residue level which would lead to an exposure equivalent to 100% of the ARfD.

| No of commodities for which ARfD/ADI is exceeded (ESTI 1) | No of commodities for which ARfD/ADI is exceeded (ESTI 2) | No of commodities for which ARfD/ADI is exceeded (ESTI 1) | No of commodities for which ARfD/ADI is exceeded (ESTI 2) |
|----------------------------------------------------------|----------------------------------------------------------|----------------------------------------------------------|----------------------------------------------------------|
| Highest % of ARfD/ADI | Commodities | pTMRL/ | threshold MRL | Highest % of ARfD/ADI | Commodities | pTMRL/ | threshold MRL |
|-----------------------|-------------|---------|-------------|-----------------------|-------------|---------|-------------|
| 48.7                  | Wheat flour | 20.6/-  |              | 18.1                  | Bread/pizza | 20.6/-  |              |
| 2.8                   | Mace flour  | 3.3/-   |              | 2.2                   | Mace flour  | 3.3/-   |              |
| 1.6                   | Potato pure (fries) | 0.5/- |              | 0.1                   | Potato pure (fries) | 0.5/- |              |
| 0.5                   | Apple juice | 0.05/- |              | 0.1                   | Orange juice | 0.05/- |              |
| 0.5                   | Orange juice | 0.05/- |              | 0.1                   | Fried potatoes | 0.59/- |              |

For processed commodities, no exceedance of the ARfD/ADI was identified.
**PRImo(CXL_optional)**

**Glyphosate**

**Status of the active substance: Code no.**

- LOQ (mg/kg bw): Proposed LOQ:
  - ADI (mg/kg bw per day): 0.5
  - ARfD (mg/kg bw): 0.5

**Source of ADI:** EFSA

**Year of evaluation:** 2015

**No of diets exceeding ADI:** ---

**Highest calculated TMDI values in % of ADI**

| 01 9 | 19.1 UK Toddler | 3.2 Wheat | 1.9 Wheat | 0.2 Potatoes | 0.0 Tomatoes | 0.0 Potatoes |
| 01 9 | 19.1 UK Infant | 3.2 Wheat | 1.9 Wheat | 0.2 Potatoes | 0.0 Tomatoes | 0.0 Potatoes |
| 01 9 | 19.1 WHO Cluster diet B | 3.2 Wheat | 1.9 Wheat | 0.2 Potatoes | 0.0 Tomatoes | 0.0 Potatoes |
| 01 9 | 19.1 WHO Cluster diet C | 3.2 Wheat | 1.9 Wheat | 0.2 Potatoes | 0.0 Tomatoes | 0.0 Potatoes |
| 01 9 | 19.1 WHO Cluster diet D | 3.2 Wheat | 1.9 Wheat | 0.2 Potatoes | 0.0 Tomatoes | 0.0 Potatoes |
| 01 9 | 19.1 WHO Cluster diet E | 3.2 Wheat | 1.9 Wheat | 0.2 Potatoes | 0.0 Tomatoes | 0.0 Potatoes |
| 01 9 | 19.1 WHO Cluster diet F | 3.2 Wheat | 1.9 Wheat | 0.2 Potatoes | 0.0 Tomatoes | 0.0 Potatoes |
| 01 9 | 19.1 WHO Cluster diet G | 3.2 Wheat | 1.9 Wheat | 0.2 Potatoes | 0.0 Tomatoes | 0.0 Potatoes |
| 01 9 | 19.1 WHO Cluster diet H | 3.2 Wheat | 1.9 Wheat | 0.2 Potatoes | 0.0 Tomatoes | 0.0 Potatoes |
| 01 9 | 19.1 WHO Cluster diet I | 3.2 Wheat | 1.9 Wheat | 0.2 Potatoes | 0.0 Tomatoes | 0.0 Potatoes |
| 01 9 | 19.1 WHO Cluster diet J | 3.2 Wheat | 1.9 Wheat | 0.2 Potatoes | 0.0 Tomatoes | 0.0 Potatoes |
| 01 9 | 19.1 WHO Cluster diet K | 3.2 Wheat | 1.9 Wheat | 0.2 Potatoes | 0.0 Tomatoes | 0.0 Potatoes |
| 01 9 | 19.1 WHO Cluster diet L | 3.2 Wheat | 1.9 Wheat | 0.2 Potatoes | 0.0 Tomatoes | 0.0 Potatoes |
| 01 9 | 19.1 WHO Cluster diet M | 3.2 Wheat | 1.9 Wheat | 0.2 Potatoes | 0.0 Tomatoes | 0.0 Potatoes |
| 01 9 | 19.1 WHO Cluster diet N | 3.2 Wheat | 1.9 Wheat | 0.2 Potatoes | 0.0 Tomatoes | 0.0 Potatoes |
| 01 9 | 19.1 WHO Cluster diet O | 3.2 Wheat | 1.9 Wheat | 0.2 Potatoes | 0.0 Tomatoes | 0.0 Potatoes |
| 01 9 | 19.1 WHO Cluster diet P | 3.2 Wheat | 1.9 Wheat | 0.2 Potatoes | 0.0 Tomatoes | 0.0 Potatoes |
| 01 9 | 19.1 WHO Cluster diet Q | 3.2 Wheat | 1.9 Wheat | 0.2 Potatoes | 0.0 Tomatoes | 0.0 Potatoes |
| 01 9 | 19.1 WHO Cluster diet R | 3.2 Wheat | 1.9 Wheat | 0.2 Potatoes | 0.0 Tomatoes | 0.0 Potatoes |
| 01 9 | 19.1 WHO Cluster diet S | 3.2 Wheat | 1.9 Wheat | 0.2 Potatoes | 0.0 Tomatoes | 0.0 Potatoes |
| 01 9 | 19.1 WHO Cluster diet T | 3.2 Wheat | 1.9 Wheat | 0.2 Potatoes | 0.0 Tomatoes | 0.0 Potatoes |
| 01 9 | 19.1 WHO Cluster diet U | 3.2 Wheat | 1.9 Wheat | 0.2 Potatoes | 0.0 Tomatoes | 0.0 Potatoes |
| 01 9 | 19.1 WHO Cluster diet V | 3.2 Wheat | 1.9 Wheat | 0.2 Potatoes | 0.0 Tomatoes | 0.0 Potatoes |
| 01 9 | 19.1 WHO Cluster diet W | 3.2 Wheat | 1.9 Wheat | 0.2 Potatoes | 0.0 Tomatoes | 0.0 Potatoes |
| 01 9 | 19.1 WHO Cluster diet X | 3.2 Wheat | 1.9 Wheat | 0.2 Potatoes | 0.0 Tomatoes | 0.0 Potatoes |
| 01 9 | 19.1 WHO Cluster diet Y | 3.2 Wheat | 1.9 Wheat | 0.2 Potatoes | 0.0 Tomatoes | 0.0 Potatoes |
| 01 9 | 19.1 WHO Cluster diet Z | 3.2 Wheat | 1.9 Wheat | 0.2 Potatoes | 0.0 Tomatoes | 0.0 Potatoes |

**Commodity/group of commodities**

- **Milk and cream**
- **Wheat**
- **Rye**
- **Sugar beet (root)**
- **Barley**
- **Tomatoes**
- **Apples**
- **Oats**
- **Wine grapes**
- **Potatoes**
- **Maize**
- **Rape seed**
- **Yellow mustard**

**Conclusion:**

The estimated Theoretical Maximum Daily Intakes (TMDI), based on pTMRLs were below the ADI. A long-term intake of residues of glyphosate is unlikely to present a public health concern.
The acute risk assessment is based on the ARfD. For each commodity, the calculation is based on the highest reported MS consumption per kg bw and the corresponding unit weight from the MS, with the critical consumption. If no data on the unit weight was available from that MS, an average European unit weight was used for the IESTI calculation.

In the IESTI 1 calculation, the variability factors were 10, 7 or 5 (according to JMPR manual 2002), for lettuce, a variability factor of 5 was used.

In the IESTI 2 calculations, the variability factors of 10 and 7 were replaced by 5. For lettuce, the calculation was performed with a variability factor of 3.

Threshold MRL is the calculated residue level which would leads to an exposure equivalent to 100% of the ARfD.

For processed commodities, no exceedance of the ARfD/ADI was identified.

* The results of the IESTI calculations are reported for at least 5 commodities. If the ARfD is exceeded for more than 5 commodities, all IESTI values > 90% of ARfD are reported.

** pTMRL: provisional temporary MRL.

*** pTMRL: provisional temporary MRL for unprocessed commodity.

No exceedance of the ARfD/ADI was identified for any unprocessed commodity.
### Glyphosate

| Status of the active substance | Code no. | Code no. | LOG (mg/kg bw) | Proposed LOG |
|-------------------------------|----------|----------|----------------|--------------|
|                               |          |          |                |              |

#### Toxicological end points

| ADI (mg/kg bw per day) | Source of ADI | ARfD (mg/kg bw) | Source of ARfD | Year of evaluation | Year of evaluation |
|------------------------|---------------|-----------------|----------------|-------------------|-------------------|
| 0.5                    | EFSA          | 0.5             | EFSA           | 2015              | 2015              |

#### No of diets exceeding ADI:

- **---**

#### Highest calculated TMDI values in % of ADI:

| MS Diet | Commodity/group of commodities | 1st contributor to MS diet in % of ADI | 2nd contributor to MS diet in % of ADI | 3rd contributor to MS diet in % of ADI |
|---------|--------------------------------|--------------------------------------|---------------------------------------|----------------------------------------|
| 15.1    | UK Toddler                     | Sugar beet (red)                     | Wheat                                 | Milk and cream                         |
| 10.5    | UK Infant                      | Wheat                               | Sugar beet (red)                      | Wheat                                 |
| 9.4     | WHO Cluster diet B             | Wheat                               | Sugar beet (red)                      | Milk and cream                         |
| 8.6     | DK child                       | Wheat                               | Sugar beet (red)                      | Milk and cream                         |
| 6.6     | WHO cluster diet D             | Wheat                               | Sugar beet (red)                      | Milk and cream                         |
| 5.9     | IE adult                       | Wheat                               | Sugar beet (red)                      | Milk and cream                         |
| 5.7     | NL child                       | Wheat                               | Sugar beet (red)                      | Milk and cream                         |
| 5.6     | DE child                       | Wheat                               | Sugar beet (red)                      | Milk and cream                         |
| 5.5     | WHO Cluster diet F             | Wheat                               | Sugar beet (red)                      | Milk and cream                         |
| 5.2     | IT kids/toddler                | Wheat                               | Sugar beet (red)                      | Milk and cream                         |
| 4.6     | UK vegetarian                  | Sugar beet (red)                     | Wheat                                 | Milk and cream                         |
| 4.3     | ES child                       | Sugar beet (red)                     | Wheat                                 | Milk and cream                         |
| 4.3     | UK Adult                       | Sugar beet (red)                     | Wheat                                 | Milk and cream                         |
| 4.0     | PT General population          | Wheat                               | Sugar beet (red)                      | Milk and cream                         |
| 3.8     | WHO regional European diet     | Wheat                               | Sugar beet (red)                      | Milk and cream                         |
| 3.7     | FR toddler                     | Wheat                               | Sugar beet (red)                      | Milk and cream                         |
| 3.4     | SE general population 9th per centile | Wheat | Sugar beet (red) | Milk and cream |
| 3.3     | IT adult                       | Wheat                               | Sugar beet (red)                      | Milk and cream                         |
| 3.1     | ES adult                       | Wheat                               | Sugar beet (red)                      | Milk and cream                         |
| 3.0     | FR all population              | Wheat                               | Sugar beet (red)                      | Milk and cream                         |
| 2.9     | NL general                     | Wheat                               | Sugar beet (red)                      | Milk and cream                         |
| 2.5     | DK all                        | Wheat                               | Sugar beet (red)                      | Milk and cream                         |
| 2.4     | LT all                        | Wheat                               | Sugar beet (red)                      | Milk and cream                         |
| 1.8     | FR infant                      | Wheat                               | Sugar beet (red)                      | Milk and cream                         |
| 1.7     | FI all                        | Wheat                               | Sugar beet (red)                      | Milk and cream                         |
| 0.4     | PL general population          | Wheat                               | Sugar beet (red)                      | Milk and cream                         |

#### pTMRLs at LOG (in % of ADI)

| Commodity/group of commodities | 19.1 UK Toddler | 15.1  | 2.8  | 0.4  | Milk and cream |
|--------------------------------|-----------------|-------|------|------|----------------|
| Milk and cream                 | 10.5 UK Infant  | 6.7   | 1.9  | 0.8  | Milk and cream |
| Milk and cream                 | 9.4 WHO Cluster diet B | 6.2 | 0.5  | 0.4  | Barley         |
| Milk and cream                 | 8.6 DK child    | 4.0   | 3.2  | 0.6  | Oats           |
| Milk and cream                 | 6.6 WHO cluster diet D | 4.7 | 0.4  | 0.3  | Rye            |
| Milk and cream                 | 5.9 IE adult    | 2.0   | 1.7  | 0.4  | Maize          |
| Milk and cream                 | 5.7 NL child    | 3.4   | 0.6  | 0.3  | Apples         |
| Milk and cream                 | 5.6 DE child    | 3.0   | 0.6  | 0.5  | Apples         |
| Milk and cream                 | 5.5 WHO Cluster diet F | 2.6 | 1.0  | 0.6  | Rye            |
| Milk and cream                 | 5.2 IT kids/toddler | 4.8 | 0.1  | 0.0  | Potatoes       |
| Milk and cream                 | 4.6 UK vegetarian | 2.5 | 1.5  | 0.1  | Oats           |
| Milk and cream                 | 4.3 ES child    | 3.2   | 0.3  | 0.1  | Grapes         |
| Milk and cream                 | 4.3 UK Adult    | 2.6   | 1.2  | 0.1  | Milk and cream |
| Milk and cream                 | 4.0 PT General population | 2.8 | 0.2  | 0.1  | Oats           |
| Milk and cream                 | 3.8 WHO regional European diet | 2.1 | 0.5  | 0.2  | Oats           |
| Milk and cream                 | 3.7 FR toddler  | 1.9   | 0.8  | 0.2  | Oats           |
| Milk and cream                 | 3.4 SE general population 9th per centile | 2.3 | 0.2  | 0.2  | Rye            |
| Milk and cream                 | 3.3 IT adult    | 3.0   | 0.0  | 0.0  | Apples         |
| Milk and cream                 | 3.1 ES adult    | 1.7   | 0.8  | 0.1  | Milk and cream |
| Milk and cream                 | 3.0 FR all population | 2.4 | 0.2  | 0.1  | Sunflower seed |
| Milk and cream                 | 2.9 NL general  | 1.5   | 0.6  | 0.1  | Milk and cream |
| Milk and cream                 | 2.5 DK all      | 1.5   | 0.5  | 0.2  | Oats           |
| Milk and cream                 | 2.4 LT all      | 0.8   | 0.8  | 0.2  | Buckwheat      |
| Milk and cream                 | 1.8 FR infant   | 0.6   | 0.5  | 0.2  | Potatoes       |
| Milk and cream                 | 1.7 FI all      | 0.7   | 0.5  | 0.1  | Oats           |
| Milk and cream                 | 0.4 PL general population | 0.1 | 0.1  | 0.0  | Potatoes       |

### Conclusion:

The estimated Theoretical Maximum Daily Intakes (TMDI), based on pTMRLs were below the ADI. A long-term intake of residues of glyphosate is unlikely to present a public health concern.
**Acute risk assessment/children – refined calculations**

The acute risk assessment is based on the ARfD. For each commodity, the calculation is based on the highest reported MS consumption per kg bw and the corresponding unit weight from the MS with the critical consumption. If no data on the unit weight was available from that MS, an average European unit weight was used for the IESTI calculation.

In the IESTI 1 calculation, the variability factors were 10, 7 or 5 (according to JMPR manual 2002); for lettuce, a variability factor of 5 was used. In the IESTI 2 calculations, the variability factors of 10 and 7 were replaced by 5. For lettuce, the calculation was performed with a variability factor of 3.

Threshold MRL is the calculated residue level which would lead to an exposure equivalent to 100% of the ARfD.

*| No of critical MRLs (ESTI 1) | **| No of critical MRLs (ESTI 2) |
---|---|---|

**Acute risk assessment/adults/general population – refined calculations**

For processed commodities, no exceedance of the ARfD/ADI was identified.

### Table 1: Highest % of ARfD/ADI

| Commodity | pTMRL (mg/kg) | Threshold MRL (mg/kg) |
|---|---|---|
| Sugar beet (root) | 7.1/- | 90.7 |
| Beans | 22/- | 80.4 |
| Wheat | 20.6/- | 59.5 |
| Rye | 20.6/- | 26.0 |
| Potatoes | 0.7/- | 21.8 |
| Wheat flour | 20.6/- | 48.7 |
| Malt flour | 3.3/- | 2.8 |
| Apple juice | 0.3/- | 2.0 |
| Orange juice | 0.2/- | 2.0 |
| Potato puree (flakes) | 0.7/- | 1.9 |
| Bread dough | 20.6/- | 18.7 |
| Orange juice | 0.2/- | 0.4 |
| Apple juice | 0.2/- | 0.3 |
| Malt flour | 3.3/- | 0.2 |
| Wine | 0.2/- | 0.2 |

*) The results of the IESTI calculations are reported for at least 5 commodities. If the ARfD is exceeded for more than 5 commodities, all IESTI values > 90% of ARF are reported.

**) pTMRL: provisional temporary MRL.

***) pTMRL: provisional temporary MRL for unprocessed commodity.

### Conclusion:

For glyphosate, IESTI 1 and IESTI 2 were calculated for food commodities for which pTMRLs were submitted and for which consumption data are available. No exceedance of the ARfD/ADI was identified for any unprocessed commodity.
Appendix D – Input values for the exposure calculations

D.1. Livestock dietary burden calculations

| Feed commodity                  | Median dietary burden | Maximum dietary burden |
|---------------------------------|-----------------------|------------------------|
|                                 | Input value (mg/kg)   | Comment                | Input value (mg/kg)   | Comment                |
| Alfalfa, forage (green)         | 0.05* STMR × CF (tentative) | 0.05* HR × CF (tentative) |
| Alfalfa, hay (fodder)           | 0.05* STMR × CF(a) (tentative) | 0.05* HR × CF(a) (tentative) |
| Alfalfa, meal                   | 0.05* STMR × CF(a) (tentative) | 0.05* HR × CF(a) (tentative) |
| Alfalfa, silage                 | 0.05* STMR × CF(a) (tentative) | 0.05* HR × CF(a) (tentative) |
| Barley, straw                   | 57.8 STMR × CF (tentative) | 140 HR × CF (tentative) |
| Beet, mangel, fodder            | 0.05* STMR × CF (tentative) | 0.05* HR × CF (tentative) |
| Beet, sugar, tops               | 0.2* STMR × CF (tentative) | 0.2* HR × CF (tentative) |
| Cabbage, heads, leaves          | 0.05* STMR × CF (tentative) | 0.05* HR × CF (tentative) |
| Clover, forage                  | 0.05* STMR × CF (tentative) | 0.05* HR × CF (tentative) |
| Clover, hay                     | 0.05* STMR × CF(a) (tentative) | 0.05* HR × CF(a) (tentative) |
| Clover, silage                  | 0.05* STMR × CF(a) (tentative) | 0.05* HR × CF(a) (tentative) |
| Grass, forage (fresh)           | 16 STMR × CF (tentative) | 139 HR × CF (tentative) |
| Grass, hay                      | 17.6 STMR × CF × PF (1.1) (tentative) | 153 HR × CF × PF (1.1) (tentative) |
| Grass, silage                   | 14.4 STMR × CF × PF (0.9) (tentative) | 125 HR × CF × PF (0.9) (tentative) |
| Kale, leaves (forage)           | 0.05* STMR × CF (tentative) | 0.05* HR × CF (tentative) |
| Oat, straw                      | 57.8 STMR × CF (tentative) | 140 HR × CF (tentative) |
| Rye, straw                      | 31.4 STMR × CF (tentative) | 175 HR × CF (tentative) |
| Triticale, straw                | 31.4 STMR × CF (tentative) | 175 HR × CF (tentative) |
| Turnip, tops (leaves)           | 0.05* STMR × CF (tentative) | 0.05* HR × CF (tentative) |
| Wheat, straw                    | 31.4 STMR × CF (tentative) | 175 HR × CF (tentative) |
| Carrot, culls                   | 0.05* STMR × CF (tentative) | 0.05* HR × CF (tentative) |
| Cassava/tapioca                 | 0.05* STMR × CF (tentative) | 0.05* HR × CF (tentative) |
| Potato, culls                   | 0.07 STMR × CF (tentative) | 0.59 HR × CF (tentative) |
| Swede, roots                    | 0.05* STMR × CF (tentative) | 0.05* HR × CF (tentative) |
| Turnip, roots                   | 0.05* STMR × CF (tentative) | 0.05* HR × CF (tentative) |
| Barley, grain                   | 7.85 STMR × CF         | 7.85 STMR × CF         |
| Bean, seed (dry)                | 0.91 STMR × CF (tentative) | 0.91 STMR × CF (tentative) |
| Corn, field (Maize), grain      | 0.93 STMR × CF (tentative) | 0.93 STMR × CF (tentative) |
| Corn, pop, grain                | 0.93 STMR × CF (tentative) | 0.93 STMR × CF (tentative) |
| Cotton, undelinted seed         | 17.7 STMR × CF (EPSPS, tentative) | 17.7 STMR × CF (EPSPS, tentative) |
| Cowpea, seed                    | 0.91 STMR × CF (tentative) | 0.91 STMR × CF (tentative) |
| Lupin, seed                     | 0.22 STMR × CF (tentative) | 0.22 STMR × CF (tentative) |
| Millet, grain                   | 0.89 STMR × CF         | 0.89 STMR × CF         |
| Oat, grain                      | 7.85 STMR × CF         | 7.85 STMR × CF         |
| Pea (Field pea), seed (dry)     | 0.91 STMR × CF (tentative) | 0.91 STMR × CF (tentative) |
| Rye, grain                      | 0.85 STMR × CF         | 0.85 STMR × CF         |
| Sorghum, grain                  | 10.35 STMR × CF (tentative) | 10.35 STMR × CF (tentative) |
| Soyabeans, seed                 | 0.68 STMR × CF (tentative) | 0.68 STMR × CF (tentative) |
| Triticale, grain                | 0.85 STMR × CF         | 0.85 STMR × CF         |

Risk assessment residue definition: sum of glyphosate, AMPA, N-acetyl-glyphosate and N-acetyl-AMPA, expressed as glyphosate.
| Feed commodity | Input value (mg/kg) | Median dietary burden | Maximum dietary burden |
|----------------|---------------------|-----------------------|------------------------|
| Wheat, grain   | 0.85                | STMR × CF             | 0.85                   |
| Apple pomace, wet | 0.05*              | STMR × CF(a)          | 0.05*                  |
| Beet, sugar, dried pulp | 0.2*             | STMR × CF(a) (tentative) | 0.2* (tentative) |
| Beet, sugar, ensiled pulp | 0.2*          | STMR × CF(a) (tentative) | 0.2* (tentative) |
| Beet, sugar, molasses | 0.2*            | STMR × CF(a) (tentative) | 0.2* (tentative) |
| Barley, brewer’s grain (dried) | 25.91       | STMR × CF × 3.3(b) (tentative) | 25.91 (tentative) |
| Canola (Rape seed), meal | 1.74           | STMR × CF × PF (1.4) (tentative) | 1.74 (tentative) |
| Citrus fruits, dried pulp | 0.13          | STMR × CF × PF (2.6) (tentative) | 0.13 (tentative) |
| Coconut, meal | 0.05*              | STMR × CF(a) (tentative) | 0.05* (tentative) |
| Corn, field, milled by-products | 0.84       | STMR × CF × PF (0.9) (tentative) | 0.84 (tentative) |
| Corn, field, hominy meal | 5.58          | STMR × CF × 6(b) (tentative) | 5.58 (tentative) |
| Corn, field, gluten feed | 2.33           | STMR × CF × 2.5(b) (tentative) | 2.33 (tentative) |
| Corn, field, gluten, meal | 0.93           | STMR × CF × 1(b) (tentative) | 0.93 (tentative) |
| Cotton, meal | 22.1               | STMR × CF × 1.3(b) (tentative) | 22.1 (tentative) |
| Wheat/Corn, distiller’s grain (dried) | 3.07       | STMR (maize) × CF × 3.3(b) (tentative) | 3.07 (tentative) |
| Flaxseed/Linseed, meal | 1.86            | STMR × CF × PF (1.6) (tentative) | 1.86 (tentative) |
| Lupin seed, meal | 0.24              | STMR × CF × 1.1(b) (tentative) | 0.24 (tentative) |
| Palm, kernel meal | 0.05*              | STMR × CF(a) (tentative) | 0.05* (tentative) |
| Peanut, meal | 0.05*              | STMR × CF(a) (tentative) | 0.05* (tentative) |
| Potato, process waste | 1.4              | STMR × CF × 20(b) (tentative) | 1.4 (tentative) |
| Potato, dried pulp | 2.66              | STMR × CF × 38(b) (tentative) | 2.66 (tentative) |
| Rape seed, meal | 1.74               | STMR × CF × PF (1.4) (tentative) | 1.74 (tentative) |
| Safflower, meal | 0.05*              | STMR × CF(a) (tentative) | 0.05* (tentative) |
| Soyabeans, meal | 0.62               | STMR × CF × PF (0.92) (tentative) | 0.62 (tentative) |
| Soyabeans, hulls | 2.97               | STMR × CF × PF (4.4) (tentative) | 2.97 (tentative) |
| Sugarcane, molasses | 0.39            | STMR × CF × PF (7.8) (tentative) | 0.39 (tentative) |
| Sunflower, meal | 2.52               | STMR × CF × 2(b) (tentative) | 2.52 (tentative) |
| Wheat gluten, meal | 1.53             | STMR × CF × 1.8(b) (tentative) | 1.53 (tentative) |
| Wheat, milled by-products | 1.53          | STMR × CF × PF (1.8) (tentative) | 1.53 (tentative) |

STMR: supervised trials median residue; HR: highest residue; PF: processing factor.
* Indicates that the input value is proposed at the limit of quantification.
(a): For alfalfa and clover hay, meal and silage, apples pomace, sugar beet dried pulp, ensiled pulp and molasses, coconuts, meal, palm hearts kernel meal, peanut meal and safflower meal no default processing factor was applied because residues in the raw commodities are proposed at the LOQ. Concentration of residues in these commodities is therefore not expected.
(b): For barley brewer’s grain, corn hominy meal, corn gluten feed, corn gluten meal, cotton meal, wheat/corn distiller’s grain, lupin seed meal, potatoes process waste, potato dried pulp, sunflower meal and wheat gluten meal, in the absence of processing factors supported by data, the default processing factors were included in the calculation to consider the potential concentration of residues in these commodities.
### D.2. Consumer risk assessment without consideration of the existing CXLs

| Commodity            | Input value (mg/kg) | Chronic risk assessment | Acute risk assessment | Input value (mg/kg) |
|----------------------|--------------------|-------------------------|-----------------------|--------------------|
|                      | (main RD-Mo)       | Comment                 | Input value (mg/kg)   | (opt. RD-Mo)       |
| Grapefruits          | 0.05*              | STMR<sub>90</sub> × CF (1) | 0.05*                 | HR<sub>90</sub> × CF (1) |
| Oranges              | 0.05*              | STMR<sub>90</sub> × CF (1) | 0.05*                 | HR<sub>90</sub> × CF (1) |
| Lemons               | 0.05*              | STMR<sub>90</sub> × CF (1) | 0.05*                 | HR<sub>90</sub> × CF (1) |
| Limes                | 0.05*              | STMR<sub>90</sub> × CF (1) | 0.05*                 | HR<sub>90</sub> × CF (1) |
| Mandarins            | 0.05*              | STMR<sub>90</sub> × CF (1) | 0.05*                 | HR<sub>90</sub> × CF (1) |
| Almonds              | 0.05*              | STMR<sub>90</sub> × CF (1) | 0.05*                 | HR<sub>90</sub> × CF (1) |
| Brazil nuts          | 0.05*              | STMR<sub>90</sub> × CF (1) | 0.05*                 | HR<sub>90</sub> × CF (1) |
| Cashew nuts          | 0.05*              | STMR<sub>90</sub> × CF (1) | 0.05*                 | HR<sub>90</sub> × CF (1) |
| Chestnuts            | 0.05*              | STMR<sub>90</sub> × CF (1) | 0.05*                 | HR<sub>90</sub> × CF (1) |
| Coconuts             | 0.05*              | STMR<sub>90</sub> × CF (1) | 0.05*                 | HR<sub>90</sub> × CF (1) |
| Hazelnuts/cobnuts    | 0.05*              | STMR<sub>90</sub> × CF (1) | 0.05*                 | HR<sub>90</sub> × CF (1) |
| Macadamias           | 0.05*              | STMR<sub>90</sub> × CF (1) | 0.05*                 | HR<sub>90</sub> × CF (1) |
| Pecans               | 0.05*              | STMR<sub>90</sub> × CF (1) | 0.05*                 | HR<sub>90</sub> × CF (1) |
| Pine nut kernels     | 0.05*              | STMR<sub>90</sub> × CF (1) | 0.05*                 | HR<sub>90</sub> × CF (1) |
| Pistachios           | 0.05*              | STMR<sub>90</sub> × CF (1) | 0.05*                 | HR<sub>90</sub> × CF (1) |
| Walnuts              | 0.05*              | STMR<sub>90</sub> × CF (1) | 0.05*                 | HR<sub>90</sub> × CF (1) |
| Apples               | 0.05*              | STMR<sub>90</sub> × CF (1) | 0.05*                 | HR<sub>90</sub> × CF (1) |
| Pears                | 0.05*              | STMR<sub>90</sub> × CF (1) | 0.05*                 | HR<sub>90</sub> × CF (1) |
| Quinces              | 0.05*              | STMR<sub>90</sub> × CF (1) | 0.05*                 | HR<sub>90</sub> × CF (1) |
| Medlars              | 0.05*              | STMR<sub>90</sub> × CF (1) | 0.05*                 | HR<sub>90</sub> × CF (1) |
| Loquats/Japanese medlars | 0.05*       | STMR<sub>90</sub> × CF (1) | 0.05*                 | HR<sub>90</sub> × CF (1) |
| Apricots             | 0.05*              | STMR<sub>90</sub> × CF (1) | 0.05*                 | HR<sub>90</sub> × CF (1) |
| Cherries (sweet)     | 0.05*              | STMR<sub>90</sub> × CF (1) | 0.05*                 | HR<sub>90</sub> × CF (1) |
| Peaches              | 0.05*              | STMR<sub>90</sub> × CF (1) | 0.05*                 | HR<sub>90</sub> × CF (1) |
| Plums                | 0.05*              | STMR<sub>90</sub> × CF (1) | 0.05*                 | HR<sub>90</sub> × CF (1) |
| Table grapes         | 0.05*              | STMR<sub>90</sub> × CF (1) | 0.05*                 | HR<sub>90</sub> × CF (1) |

**Risk assessment residue definition:** sum of glyphosate, AMPA, N-acetyl-glyphosate and N-acetyl-AMPA, expressed as glyphosate.
| Commodity                              | Input value (mg/kg) (main RD-Mo) | Chronic risk assessment | Input value (mg/kg) (opt. RD-Mo) | Acute risk assessment | Input value (mg/kg) (opt. RD-Mo) |
|----------------------------------------|---------------------------------|-------------------------|----------------------------------|----------------------|----------------------------------|
| Wine grapes                            | 0.05*                           | STMR_{050} × CF (1)     | (0.2*)                           | 0.05*                | HR_{050} × CF (1) (0.2*)         |
| Strawberries                           | 0.05*                           | STMR_{050} × CF (1) (tentative) | (0.2*)                           | 0.05*                | HR_{050} × CF (1) (tentative) (0.2*) |
| Blackberries                           | 0.05*                           | STMR_{050} × CF (1) (tentative) | (0.2*)                           | 0.05*                | HR_{050} × CF (1) (tentative) (0.2*) |
| Dewberries                             | 0.05*                           | STMR_{050} × CF (1) (tentative) | (0.2*)                           | 0.05*                | HR_{050} × CF (1) (tentative) (0.2*) |
| Raspberries (red and yellow)           | 0.05*                           | STMR_{050} × CF (1) (tentative) | (0.2*)                           | 0.05*                | HR_{050} × CF (1) (tentative) (0.2*) |
| Blueberries                            | 0.05*                           | STMR_{050} × CF (1) (tentative) | (0.2*)                           | 0.05*                | HR_{050} × CF (1) (tentative) (0.2*) |
| Cranberries                            | 0.05*                           | STMR_{050} × CF (1) (tentative) | (0.2*)                           | 0.05*                | HR_{050} × CF (1) (tentative) (0.2*) |
| Currants (black, red and white)        | 0.05*                           | STMR_{050} × CF (1) (tentative) | (0.2*)                           | 0.05*                | HR_{050} × CF (1) (tentative) (0.2*) |
| Gooseberries (green, red and yellow)   | 0.05*                           | STMR_{050} × CF (1) (tentative) | (0.2*)                           | 0.05*                | HR_{050} × CF (1) (tentative) (0.2*) |
| Rose hips                              | 0.05*                           | STMR_{050} × CF (1) (tentative) | (0.2*)                           | 0.05*                | HR_{050} × CF (1) (tentative) (0.2*) |
| Mulberries (black and white)           | 0.05*                           | STMR_{050} × CF (1) (tentative) | (0.2*)                           | 0.05*                | HR_{050} × CF (1) (tentative) (0.2*) |
| Azaroles/Mediterranean medlars         | 0.05*                           | STMR_{050} × CF (1) (tentative) | (0.2*)                           | 0.05*                | HR_{050} × CF (1) (tentative) (0.2*) |
| Elderberries                           | 0.05*                           | STMR_{050} × CF (1) (tentative) | (0.2*)                           | 0.05*                | HR_{050} × CF (1) (tentative) (0.2*) |
| Figs                                   | 0.05*                           | STMR_{050} × CF (1)     | (0.2*)                           | 0.05*                | HR_{050} × CF (1) (0.2*)         |
| Table olives                           | 0.05*                           | STMR_{050} × CF (1)     | (0.2*)                           | 0.05*                | HR_{050} × CF (1) (0.2*)         |
| Kumquats                               | 0.05*                           | STMR_{050} × CF (1)     | (0.2*)                           | 0.05*                | HR_{050} × CF (1) (0.2*)         |
| Kaki/Japanese persimmons               | 0.05*                           | STMR_{050} × CF (1)     | (0.2*)                           | 0.05*                | HR_{050} × CF (1) (0.2*)         |
| Kiwi fruits (green, red, yellow)       | 0.05*                           | STMR_{050} × CF (1)     | (0.2*)                           | 0.05*                | HR_{050} × CF (1) (0.2*)         |
| Litchis/lychees                        | 0.05*                           | STMR_{050} × CF (1)     | (0.2*)                           | 0.05*                | HR_{050} × CF (1) (0.2*)         |
| Passionfruits/maracujas                | 0.05*                           | STMR_{050} × CF (1)     | (0.2*)                           | 0.05*                | HR_{050} × CF (1) (0.2*)         |
| Avocados                               | 0.05*                           | STMR_{050} × CF (1)     | (0.2*)                           | 0.05*                | HR_{050} × CF (1) (0.2*)         |
| Bananas                                | 0.05*                           | STMR_{050} × CF (1)     | (0.2*)                           | 0.05*                | HR_{050} × CF (1) (0.2*)         |
| Mangoes                                | 0.05*                           | STMR_{050} × CF (1)     | (0.2*)                           | 0.05*                | HR_{050} × CF (1) (0.2*)         |
| Papayas                                | 0.05*                           | STMR_{050} × CF (1)     | (0.2*)                           | 0.05*                | HR_{050} × CF (1) (0.2*)         |
| Granate apples/pomegranates            | 0.05*                           | STMR_{050} × CF (1)     | (0.2*)                           | 0.05*                | HR_{050} × CF (1) (0.2*)         |
| Cherimoyas                             | 0.05*                           | STMR_{050} × CF (1)     | (0.2*)                           | 0.05*                | HR_{050} × CF (1) (0.2*)         |
| Potatoes                               | 0.07                            | STMR_{050} × CF (1) (tentative) | (0.2*)                           | 0.59                 | HR_{050} × CF (1) (tentative) (0.71) |
| Cassava roots/manioc                   | 0.05*                           | STMR_{050} × CF (1) (tentative) | (0.2*)                           | 0.05*                | HR_{050} × CF (1) (tentative) (0.2*) |
| Commodity                         | Chronic risk assessment                                      | Acute risk assessment                                      |
|----------------------------------|-------------------------------------------------------------|------------------------------------------------------------|
|                                  | Input value (mg/kg) (main RD-Mo) Comment | Input value (mg/kg) (opt. RD-Mo) Comment | Input value (mg/kg) (main RD-Mo) Comment | Input value (mg/kg) (opt. RD-Mo) Comment |
| Sweet potatoes                   | 0.05* STMR<sub>90</sub> × CF (1) (tentative) | (0.2*)                                      | 0.05* HR<sub>90</sub> × CF (1) (tentative) | (0.2*)                                      |
| Yams                             | 0.05* STMR<sub>90</sub> × CF (1) (tentative) | (0.2*)                                      | 0.05* HR<sub>90</sub> × CF (1) (tentative) | (0.2*)                                      |
| Arrowroots                       | 0.05* STMR<sub>90</sub> × CF (1) (tentative) | (0.2*)                                      | 0.05* HR<sub>90</sub> × CF (1) (tentative) | (0.2*)                                      |
| Beetroots                        | 0.05* STMR<sub>90</sub> × CF (1) (tentative) | (0.2*)                                      | 0.05* HR<sub>90</sub> × CF (1) (tentative) | (0.2*)                                      |
| Carrots                          | 0.05* STMR<sub>90</sub> × CF (1) (tentative) | (0.2*)                                      | 0.05* HR<sub>90</sub> × CF (1) (tentative) | (0.2*)                                      |
| Celeriacs/tumip rooted celeries  | 0.05* STMR<sub>90</sub> × CF (1) (tentative) | (0.2*)                                      | 0.05* HR<sub>90</sub> × CF (1) (tentative) | (0.2*)                                      |
| Horseradishes                    | 0.05* STMR<sub>90</sub> × CF (1) (tentative) | (0.2*)                                      | 0.05* HR<sub>90</sub> × CF (1) (tentative) | (0.2*)                                      |
| Jerusalem artichokes             | 0.05* STMR<sub>90</sub> × CF (1) (tentative) | (0.2*)                                      | 0.05* HR<sub>90</sub> × CF (1) (tentative) | (0.2*)                                      |
| Parsnips                         | 0.05* STMR<sub>90</sub> × CF (1) (tentative) | (0.2*)                                      | 0.05* HR<sub>90</sub> × CF (1) (tentative) | (0.2*)                                      |
| Parsley roots/Hamburg roots parsley | 0.05* STMR<sub>90</sub> × CF (1) (tentative) | (0.2*)                                      | 0.05* HR<sub>90</sub> × CF (1) (tentative) | (0.2*)                                      |
| Radishes                         | 0.05* STMR<sub>90</sub> × CF (1) (tentative) | (0.2*)                                      | 0.05* HR<sub>90</sub> × CF (1) (tentative) | (0.2*)                                      |
| Salsifies                        | 0.05* STMR<sub>90</sub> × CF (1) (tentative) | (0.2*)                                      | 0.05* HR<sub>90</sub> × CF (1) (tentative) | (0.2*)                                      |
| Swedes/rutabagas                 | 0.05* STMR<sub>90</sub> × CF (1) (tentative) | (0.2*)                                      | 0.05* HR<sub>90</sub> × CF (1) (tentative) | (0.2*)                                      |
| Turnips                          | 0.05* STMR<sub>90</sub> × CF (1) (tentative) | (0.2*)                                      | 0.05* HR<sub>90</sub> × CF (1) (tentative) | (0.2*)                                      |
| Garlic                           | 0.05* STMR<sub>90</sub> × CF (1) (tentative) | (0.2*)                                      | 0.05* HR<sub>90</sub> × CF (1) (tentative) | (0.2*)                                      |
| Onions                           | 0.05* STMR<sub>90</sub> × CF (1) (tentative) | (0.2*)                                      | 0.05* HR<sub>90</sub> × CF (1) (tentative) | (0.2*)                                      |
| Shallots                         | 0.05* STMR<sub>90</sub> × CF (1) (tentative) | (0.2*)                                      | 0.05* HR<sub>90</sub> × CF (1) (tentative) | (0.2*)                                      |
| Spring onions/green onions and Welsh onions | 0.05* STMR<sub>90</sub> × CF (1) (tentative) | (0.2*)                                      | 0.05* HR<sub>90</sub> × CF (1) (tentative) | (0.2*)                                      |
| Tomatoes                         | 0.05* STMR<sub>90</sub> × CF (1) (tentative) | (0.2*)                                      | 0.05* HR<sub>90</sub> × CF (1) (tentative) | (0.2*)                                      |
| Sweet peppers/bell peppers       | 0.05* STMR<sub>90</sub> × CF (1) (tentative) | (0.2*)                                      | 0.05* HR<sub>90</sub> × CF (1) (tentative) | (0.2*)                                      |
| Aubergines/eggplants             | 0.05* STMR<sub>90</sub> × CF (1) (tentative) | (0.2*)                                      | 0.05* HR<sub>90</sub> × CF (1) (tentative) | (0.2*)                                      |
| Okra/lady's fingers              | 0.05* STMR<sub>90</sub> × CF (1) (tentative) | (0.2*)                                      | 0.05* HR<sub>90</sub> × CF (1) (tentative) | (0.2*)                                      |
| Cucumbers                        | 0.05* STMR<sub>90</sub> × CF (1) (tentative) | (0.2*)                                      | 0.05* HR<sub>90</sub> × CF (1) (tentative) | (0.2*)                                      |
| Gherkins                         | 0.05* STMR<sub>90</sub> × CF (1) (tentative) | (0.2*)                                      | 0.05* HR<sub>90</sub> × CF (1) (tentative) | (0.2*)                                      |
| Courgettes                       | 0.05* STMR<sub>90</sub> × CF (1) (tentative) | (0.2*)                                      | 0.05* HR<sub>90</sub> × CF (1) (tentative) | (0.2*)                                      |
| Melons                           | 0.05* STMR<sub>90</sub> × CF (1) (tentative) | (0.2*)                                      | 0.05* HR<sub>90</sub> × CF (1) (tentative) | (0.2*)                                      |
| Pumpkins                         | 0.05* STMR<sub>90</sub> × CF (1) (tentative) | (0.2*)                                      | 0.05* HR<sub>90</sub> × CF (1) (tentative) | (0.2*)                                      |
| Watermelons                      | 0.05* STMR<sub>90</sub> × CF (1) (tentative) | (0.2*)                                      | 0.05* HR<sub>90</sub> × CF (1) (tentative) | (0.2*)                                      |
## Review of the existing MRLs for glyphosate - revised version to take into account omitted data

| Commodity                               | Input value (mg/kg) (main RD-Mo) | Comment                                   | Input value (mg/kg) (opt. RD-Mo) | Comment                                   | Input value (mg/kg) (opt. RD-Mo) |
|-----------------------------------------|----------------------------------|-------------------------------------------|---------------------------------|-------------------------------------------|---------------------------------|
| Sweet corn                              | 0.51                             | STMR<sub>90</sub> × CF (1) (GM EPSPS, tentative) | (0.51)                          | HR<sub>90</sub> × CF (1) (GM EPSPS, tentative) | (1.45) |
| Broccoli                                | 0.05*                            | STMR<sub>90</sub> × CF (1) (tentative)    | (0.2*)                          | HR<sub>90</sub> × CF (1) (tentative)     | (0.2*) |
| Cauliflower                             | 0.05*                            | STMR<sub>90</sub> × CF (1) (tentative)    | (0.2*)                          | HR<sub>90</sub> × CF (1) (tentative)     | (0.2*) |
| Brussels sprouts                        | 0.05*                            | STMR<sub>90</sub> × CF (1) (tentative)    | (0.2*)                          | HR<sub>90</sub> × CF (1) (tentative)     | (0.2*) |
| Head cabbages                           | 0.05*                            | STMR<sub>90</sub> × CF (1) (tentative)    | (0.2*)                          | HR<sub>90</sub> × CF (1) (tentative)     | (0.2*) |
| Chinese cabbages/pe-tsai                | 0.05*                            | STMR<sub>90</sub> × CF (1) (tentative)    | (0.2*)                          | HR<sub>90</sub> × CF (1) (tentative)     | (0.2*) |
| Kale                                    | 0.05*                            | STMR<sub>90</sub> × CF (1) (tentative)    | (0.2*)                          | HR<sub>90</sub> × CF (1) (tentative)     | (0.2*) |
| Kohlrabie                               | 0.05*                            | STMR<sub>90</sub> × CF (1) (tentative)    | (0.2*)                          | HR<sub>90</sub> × CF (1) (tentative)     | (0.2*) |
| Lamb's lettuces/corn salads             | 0.05*                            | STMR<sub>90</sub> × CF (1) (tentative)    | (0.2*)                          | HR<sub>90</sub> × CF (1) (tentative)     | (0.2*) |
| Lettuces                                | 0.05*                            | STMR<sub>90</sub> × CF (1) (tentative)    | (0.2*)                          | HR<sub>90</sub> × CF (1) (tentative)     | (0.2*) |
| Escaroles/broadleaved endives           | 0.05*                            | STMR<sub>90</sub> × CF (1) (tentative)    | (0.2*)                          | HR<sub>90</sub> × CF (1) (tentative)     | (0.2*) |
| Cresses and other sprouts and shoots    | 0.05*                            | STMR<sub>90</sub> × CF (1) (tentative)    | (0.2*)                          | HR<sub>90</sub> × CF (1) (tentative)     | (0.2*) |
| Land cresses                            | 0.05*                            | STMR<sub>90</sub> × CF (1) (tentative)    | (0.2*)                          | HR<sub>90</sub> × CF (1) (tentative)     | (0.2*) |
| Roman rocket/rucola                     | 0.05*                            | STMR<sub>90</sub> × CF (1) (tentative)    | (0.2*)                          | HR<sub>90</sub> × CF (1) (tentative)     | (0.2*) |
| Red mustards                            | 0.05*                            | STMR<sub>90</sub> × CF (1) (tentative)    | (0.2*)                          | HR<sub>90</sub> × CF (1) (tentative)     | (0.2*) |
| Baby leaf crops (including brassica species) | 0.05*                          | STMR<sub>90</sub> × CF (1) (tentative)    | (0.2*)                          | HR<sub>90</sub> × CF (1) (tentative)     | (0.2*) |
| Spinaches                               | 0.05*                            | STMR<sub>90</sub> × CF (1) (tentative)    | (0.2*)                          | HR<sub>90</sub> × CF (1) (tentative)     | (0.2*) |
| Purslanes                               | 0.05*                            | STMR<sub>90</sub> × CF (1) (tentative)    | (0.2*)                          | HR<sub>90</sub> × CF (1) (tentative)     | (0.2*) |
| Chards/beet leaves                      | 0.05*                            | STMR<sub>90</sub> × CF (1) (tentative)    | (0.2*)                          | HR<sub>90</sub> × CF (1) (tentative)     | (0.2*) |
| Grape leaves and similar species        | 0.05*                            | STMR<sub>90</sub> × CF (1) (tentative)    | (0.2*)                          | HR<sub>90</sub> × CF (1) (tentative)     | (0.2*) |
| Watercresses                            | 0.05*                            | STMR<sub>90</sub> × CF (1) (tentative)    | (0.2*)                          | HR<sub>90</sub> × CF (1) (tentative)     | (0.2*) |
| Witloofs/Belgian endives                | 0.05*                            | STMR<sub>90</sub> × CF (1) (tentative)    | (0.2*)                          | HR<sub>90</sub> × CF (1) (tentative)     | (0.2*) |
| Chervil                                 | 0.05*                            | STMR<sub>90</sub> × CF (1) (tentative)    | (0.2*)                          | HR<sub>90</sub> × CF (1) (tentative)     | (0.2*) |
| Chives                                  | 0.05*                            | STMR<sub>90</sub> × CF (1) (tentative)    | (0.2*)                          | HR<sub>90</sub> × CF (1) (tentative)     | (0.2*) |
| Celery leaves                           | 0.05*                            | STMR<sub>90</sub> × CF (1) (tentative)    | (0.2*)                          | HR<sub>90</sub> × CF (1) (tentative)     | (0.2*) |
| Parsley                                 | 0.05*                            | STMR<sub>90</sub> × CF (1) (tentative)    | (0.2*)                          | HR<sub>90</sub> × CF (1) (tentative)     | (0.2*) |
| Sage                                    | 0.05*                            | STMR<sub>90</sub> × CF (1) (tentative)    | (0.2*)                          | HR<sub>90</sub> × CF (1) (tentative)     | (0.2*) |
| Commodity                        | Input value (mg/kg) (main RD-Mo) | Chronic risk assessment | Input value (mg/kg) (opt. RD-Mo) | Comment | Input value (mg/kg) (main RD-Mo) | Acute risk assessment | Input value (mg/kg) (opt. RD-Mo) |
|---------------------------------|----------------------------------|-------------------------|----------------------------------|---------|----------------------------------|-----------------------|-------------------------|
| Rosemary                        | 0.05*                            | STMR<sub>0.05</sub> × CF (1) (tentative) | (0.2*)                           |         | 0.05*                            | HR<sub>0.05</sub> × CF (1) (tentative) | (0.2*)                   |
| Thyme                           | 0.05*                            | STMR<sub>0.05</sub> × CF (1) (tentative) | (0.2*)                           |         | 0.05*                            | HR<sub>0.05</sub> × CF (1) (tentative) | (0.2*)                   |
| Basil and edible flowers        | 0.05*                            | STMR<sub>0.05</sub> × CF (1) (tentative) | (0.2*)                           |         | 0.05*                            | HR<sub>0.05</sub> × CF (1) (tentative) | (0.2*)                   |
| Laurel/bay leave                | 0.05*                            | STMR<sub>0.05</sub> × CF (1) (tentative) | (0.2*)                           |         | 0.05*                            | HR<sub>0.05</sub> × CF (1) (tentative) | (0.2*)                   |
| Tarragon                        | 0.05*                            | STMR<sub>0.05</sub> × CF (1) (tentative) | (0.2*)                           |         | 0.05*                            | HR<sub>0.05</sub> × CF (1) (tentative) | (0.2*)                   |
| Beans (with pods)               | 0.05*                            | STMR<sub>0.05</sub> × CF (1) (tentative) | (0.2*)                           |         | 0.05*                            | HR<sub>0.05</sub> × CF (1) (tentative) | (0.2*)                   |
| Beans (without pods)            | 0.05*                            | STMR<sub>0.05</sub> × CF (1) (tentative) | (0.2*)                           |         | 0.05*                            | HR<sub>0.05</sub> × CF (1) (tentative) | (0.2*)                   |
| Peas (with pods)                | 0.05*                            | STMR<sub>0.05</sub> × CF (1) (tentative) | (0.2*)                           |         | 0.05*                            | HR<sub>0.05</sub> × CF (1) (tentative) | (0.2*)                   |
| Peas (without pods)             | 0.05*                            | STMR<sub>0.05</sub> × CF (1) (tentative) | (0.2*)                           |         | 0.05*                            | HR<sub>0.05</sub> × CF (1) (tentative) | (0.2*)                   |
| Lentils (fresh)                 | 0.05*                            | STMR<sub>0.05</sub> × CF (1) (tentative) | (0.2*)                           |         | 0.05*                            | HR<sub>0.05</sub> × CF (1) (tentative) | (0.2*)                   |
| Asparagus                       | 0.05*                            | STMR<sub>0.05</sub> × CF (1) (tentative) | (0.2*)                           |         | 0.05*                            | HR<sub>0.05</sub> × CF (1) (tentative) | (0.2*)                   |
| Cardoons                        | 0.05*                            | STMR<sub>0.05</sub> × CF (1) (tentative) | (0.2*)                           |         | 0.05*                            | HR<sub>0.05</sub> × CF (1) (tentative) | (0.2*)                   |
| Celeries                        | 0.05*                            | STMR<sub>0.05</sub> × CF (1) (tentative) | (0.2*)                           |         | 0.05*                            | HR<sub>0.05</sub> × CF (1) (tentative) | (0.2*)                   |
| Florence fennels                | 0.05*                            | STMR<sub>0.05</sub> × CF (1) (tentative) | (0.2*)                           |         | 0.05*                            | HR<sub>0.05</sub> × CF (1) (tentative) | (0.2*)                   |
| Globe artichokes                | 0.05*                            | STMR<sub>0.05</sub> × CF (1) (tentative) | (0.2*)                           |         | 0.05*                            | HR<sub>0.05</sub> × CF (1) (tentative) | (0.2*)                   |
| Leeks                           | 0.05*                            | STMR<sub>0.05</sub> × CF (1) (tentative) | (0.2*)                           |         | 0.05*                            | HR<sub>0.05</sub> × CF (1) (tentative) | (0.2*)                   |
| Rhubarbs                        | 0.05*                            | STMR<sub>0.05</sub> × CF (1) (tentative) | (0.2*)                           |         | 0.05*                            | HR<sub>0.05</sub> × CF (1) (tentative) | (0.2*)                   |
| Bamboo shoots                   | 0.05*                            | STMR<sub>0.05</sub> × CF (1) (tentative) | (0.2*)                           |         | 0.05*                            | HR<sub>0.05</sub> × CF (1) (tentative) | (0.2*)                   |
| Palm hearts                     | 0.05*                            | STMR<sub>0.05</sub> × CF (1) (tentative) | (0.2*)                           |         | 0.05*                            | HR<sub>0.05</sub> × CF (1) (tentative) | (0.2*)                   |
| Cultivated fungi                | 0.23                             | EU MRL × CF (2.3)<sup>(30)</sup> | (0.2*)                           |         | 0.23                             | EU MRL × CF (2.3)<sup>(30)</sup> | (0.2*)                   |
| Wild fungi                      | 0.05*                            | STMR<sub>0.05</sub> × CF (1) (tentative) | (0.2*)                           |         | 0.05*                            | HR<sub>0.05</sub> × CF (1) (tentative) | (0.2*)                   |
| Beans (dry)                     | 0.92                             | STMR<sub>0.05</sub> × CF (2) (tentative) | (0.91)                           |         | 22                               | HR<sub>0.05</sub> × CF (2) (tentative) | (22)                     |
| Lentils (dry)                   | 1.45                             | STMR<sub>0.05</sub> × CF (2) (tentative) | (1.46)                           |         | 15.2                             | HR<sub>0.05</sub> × CF (2) (tentative) | (15.2)                   |
| Peas (dry)                      | 0.92                             | STMR<sub>0.05</sub> × CF (2) (tentative) | (0.91)                           |         | 22                               | HR<sub>0.05</sub> × CF (2) (tentative) | (22)                     |
| Lupins/lupini beans (dry)       | 0.22                             | STMR<sub>0.05</sub> × CF (2) (tentative) | (0.22)                           |         | 15.2                             | HR<sub>0.05</sub> × CF (2) (tentative) | (15.2)                   |
| Linseeds                        | 1.28                             | STMR<sub>0.05</sub> × CF (1.1) | (1.28)                           |         | 12.8                             | HR<sub>0.05</sub> × CF (1.1) | (11.9)                   |
| Peanuts/groundnuts              | 0.05*                            | STMR<sub>0.05</sub> × CF (1) (tentative) | (0.2*)                           |         | 0.05*                            | HR<sub>0.05</sub> × CF (1) (tentative) | (0.2*)                   |
| Poppy seeds                     | 0.05*                            | STMR<sub>0.05</sub> × CF (1) (tentative) | (0.2*)                           |         | 0.05*                            | HR<sub>0.05</sub> × CF (1) (tentative) | (0.2*)                   |
| Sesame seeds                    | 0.05*                            | STMR<sub>0.05</sub> × CF (1) (tentative) | (0.2*)                           |         | 0.05*                            | HR<sub>0.05</sub> × CF (1) (tentative) | (0.2*)                   |

Review of the existing MRLs for glyphosate - revised version to take into account omitted data
| Commodity                          | Input value (mg/kg) (main RD-Mo) | Comment             | Input value (mg/kg) (opt. RD-Mo) | Comment | Input value (mg/kg) (opt. RD-Mo) | Comment |
|-----------------------------------|----------------------------------|---------------------|----------------------------------|---------|----------------------------------|---------|
| Sunflower seeds                   | 1.27                             | STMR<sub>0.6</sub> × CF (1.1) (tentative) | 1.27                             | HR<sub>0.6</sub> × CF (1.1) (tentative) | 18.0                | HR<sub>0.6</sub> × CF (1.1) (tentative) |
| Rape seeds/canola seeds           | 1.24                             | STMR<sub>0.6</sub> × CF (1) (tentative) | 1.24                             | HR<sub>0.6</sub> × CF (1) (tentative) | 11.9                | HR<sub>0.6</sub> × CF (1) (tentative) |
| Soya beans                        | 0.68                             | STMR<sub>0.6</sub> × CF (1) (tentative) | 0.68                             | HR<sub>0.6</sub> × CF (1) (tentative) | 3.40                | HR<sub>0.6</sub> × CF (1) (tentative) |
| Mustard seeds                     | 11                               | EU MRL × CF (1.1)<sup>(a)</sup> | 11                               | EU MRL × CF (1.1)<sup>(a)</sup> | 11                  | EU MRL × CF (1.1)<sup>(a)</sup> |
| Cotton seeds                      | 17.7                             | STMR<sub>0.6</sub> × CF (1) (GM EPSPS, tentative) | 17.7                             | HR<sub>0.6</sub> × CF (1) (GM EPSPS, tentative) | 30.9                | HR<sub>0.6</sub> × CF (1) (GM EPSPS, tentative) |
| Pumpkin seeds                     | 0.05*                            | STMR<sub>0.6</sub> × CF (1) (tentative) | 0.2*                             | HR<sub>0.6</sub> × CF (1) (tentative) | 0.05*               | HR<sub>0.6</sub> × CF (1) (tentative) |
| Safflower seeds                   | 0.05*                            | STMR<sub>0.6</sub> × CF (1) (tentative) | 0.2*                             | HR<sub>0.6</sub> × CF (1) (tentative) | 0.05*               | HR<sub>0.6</sub> × CF (1) (tentative) |
| Borage seeds                      | 0.65                             | STMR<sub>0.6</sub> × CF (1) | 0.70                             | HR<sub>0.6</sub> × CF (1) | 6.80                | HR<sub>0.6</sub> × CF (1) |
| Gold of pleasure seeds            | 0.05*                            | STMR<sub>0.6</sub> × CF (1) (tentative) | 0.2*                             | HR<sub>0.6</sub> × CF (1) (tentative) | 0.05*               | HR<sub>0.6</sub> × CF (1) (tentative) |
| Hemp seeds                        | 0.05*                            | STMR<sub>0.6</sub> × CF (1) (tentative) | 0.2*                             | HR<sub>0.6</sub> × CF (1) (tentative) | 0.05*               | HR<sub>0.6</sub> × CF (1) (tentative) |
| Castor beans                      | 0.05*                            | STMR<sub>0.6</sub> × CF (1) (tentative) | 0.2*                             | HR<sub>0.6</sub> × CF (1) (tentative) | 0.05*               | HR<sub>0.6</sub> × CF (1) (tentative) |
| Olives for oil production         | 0.42                             | STMR<sub>0.6</sub> × CF (1) | 0.53                             | HR<sub>0.6</sub> × CF (1) | 16                  | HR<sub>0.6</sub> × CF (1) |
| Oil palms kernels                 | 0.05*                            | STMR<sub>0.6</sub> × CF (1) | 0.2*                             | HR<sub>0.6</sub> × CF (1) | 0.05*               | HR<sub>0.6</sub> × CF (1) |
| Oil palms fruits                  | 0.05*                            | STMR<sub>0.6</sub> × CF (1) (tentative) | 0.2*                             | HR<sub>0.6</sub> × CF (1) (tentative) | 0.05*               | HR<sub>0.6</sub> × CF (1) (tentative) |
| Kapok                             | 0.05*                            | STMR<sub>0.6</sub> × CF (1) | 0.2*                             | HR<sub>0.6</sub> × CF (1) | 0.05*               | HR<sub>0.6</sub> × CF (1) |
| Barley grains                     | 7.90                             | STMR<sub>0.6</sub> × CF (1) | 8.0                               | HR<sub>0.6</sub> × CF (1) | 21.4                | HR<sub>0.6</sub> × CF (1) |
| Buckwheat and other pseudo-cereal grains | 0.23                         | EU MRL × CF (2.3)<sup>(a)</sup> | 0.2*                             | EU MRL × CF (2.3)<sup>(a)</sup> | 0.23                | EU MRL × CF (2.3)<sup>(a)</sup> |
| Maize/corn grains                 | 0.93                             | STMR<sub>0.6</sub> × CF (1) (tentative) | 0.93                             | HR<sub>0.6</sub> × CF (1) (tentative) | 3.3                 | HR<sub>0.6</sub> × CF (1) (tentative) |
| Common millet/proso millet grains | 0.89                             | STMR<sub>0.6</sub> × CF (2.3) | 0.94                             | HR<sub>0.6</sub> × CF (2.3) | 7.36                | HR<sub>0.6</sub> × CF (2.3) |
| Oat grains                        | 7.90                             | STMR<sub>0.6</sub> × CF (1) | 8.0                               | HR<sub>0.6</sub> × CF (1) | 21.4                | HR<sub>0.6</sub> × CF (1) |
| Rice grains                       | 0.23                             | EU MRL × CF (2.3)<sup>(a)</sup> | 0.2*                             | EU MRL × CF (2.3)<sup>(a)</sup> | 0.23                | EU MRL × CF (2.3)<sup>(a)</sup> |
| Rye grains                        | 0.85                             | STMR<sub>0.6</sub> × CF (1) | 0.93                             | HR<sub>0.6</sub> × CF (1) | 17.5                | HR<sub>0.6</sub> × CF (1) |
| Sorghum grains                    | 10.4                             | STMR<sub>0.6</sub> × CF (2.3) (tentative) | 4.6                               | HR<sub>0.6</sub> × CF (2.3) (tentative) | 14.7                | HR<sub>0.6</sub> × CF (2.3) (tentative) |
| Wheat grains                      | 0.85                             | STMR<sub>0.6</sub> × CF (1) | 0.93                             | HR<sub>0.6</sub> × CF (1) | 17.5                | HR<sub>0.6</sub> × CF (1) |
| Teas                              | 0.05*                            | STMR<sub>0.6</sub> × CF (1) (tentative) | 0.2*                             | HR<sub>0.6</sub> × CF (1) (tentative) | 0.05*               | HR<sub>0.6</sub> × CF (1) (tentative) |
| Coffee beans                      | 0.05*                            | STMR<sub>0.6</sub> × CF (1) (tentative) | 0.2*                             | HR<sub>0.6</sub> × CF (1) (tentative) | 0.05*               | HR<sub>0.6</sub> × CF (1) (tentative) |
| Herbal infusions from flowers     | 0.05*                            | STMR<sub>0.6</sub> × CF (1) (tentative) | 0.2*                             | HR<sub>0.6</sub> × CF (1) (tentative) | 0.05*               | HR<sub>0.6</sub> × CF (1) (tentative) |
| Commodity | Input value (mg/kg) | Chronic risk assessment | Acute risk assessment | Input value (mg/kg) |
|-----------|-------------------|-------------------------|----------------------|-------------------|
| Herbal infusions from leaves and herbs | 0.05* | STMR<sub>90</sub> × CF (1) (tentative) | (0.2*) | 0.05* | STMR<sub>90</sub> × CF (1) (tentative) |
| Herbal infusions from roots | 0.05* | STMR<sub>90</sub> × CF (1) (tentative) | (0.2*) | 0.05* | STMR<sub>90</sub> × CF (1) (tentative) |
| Carobs/Saint John's breads | 0.05* | STMR<sub>90</sub> × CF (1) (tentative) | (0.2*) | 0.05* | STMR<sub>90</sub> × CF (1) (tentative) |
| Hops | 0.05* | STMR<sub>90</sub> × CF (1) (tentative) | (0.2*) | 0.05* | STMR<sub>90</sub> × CF (1) (tentative) |
| Seed spices | 0.05* | STMR<sub>90</sub> × CF (1) (tentative) | (0.2*) | 0.05* | STMR<sub>90</sub> × CF (1) (tentative) |
| Fruit spices | 0.05* | STMR<sub>90</sub> × CF (1) (tentative) | (0.2*) | 0.05* | STMR<sub>90</sub> × CF (1) (tentative) |
| Bark spices | 0.05* | STMR<sub>90</sub> × CF (1) (tentative) | (0.2*) | 0.05* | STMR<sub>90</sub> × CF (1) (tentative) |
| Root and rhizome spices | 0.05* | STMR<sub>90</sub> × CF (1) (tentative) | (0.2*) | 0.05* | STMR<sub>90</sub> × CF (1) (tentative) |
| Bud spices | 0.05* | STMR<sub>90</sub> × CF (1) (tentative) | (0.2*) | 0.05* | STMR<sub>90</sub> × CF (1) (tentative) |
| Flower pistil spices | 0.05* | STMR<sub>90</sub> × CF (1) (tentative) | (0.2*) | 0.05* | STMR<sub>90</sub> × CF (1) (tentative) |
| Aril spices | 0.05* | STMR<sub>90</sub> × CF (1) (tentative) | (0.2*) | 0.05* | STMR<sub>90</sub> × CF (1) (tentative) |
| Sugar beetroots | 0.2* | STMR<sub>90</sub> × CF (1) (tentative) | (0.2*) | 0.2* | STMR<sub>90</sub> × CF (1) (tentative) |
| Sugar canes | 0.05* | STMR<sub>90</sub> × CF (1) (tentative) | (0.2*) | 0.05* | STMR<sub>90</sub> × CF (1) (tentative) |
| Chicory roots | 0.05* | STMR<sub>90</sub> × CF (1) (tentative) | (0.2*) | 0.05* | STMR<sub>90</sub> × CF (1) (tentative) |
| Swine meat | 0.17 | STMR<sub>90</sub> muscle × CF (1) (tentative) | (0.17) | 0.17 | STMR<sub>90</sub> muscle × CF (1) (tentative) |
| Swine fat tissue | 0.2* | STMR<sub>90</sub> × CF (1) (tentative) | (0.2*) | 0.2* | STMR<sub>90</sub> × CF (1) (tentative) |
| Swine liver | 0.17 | STMR<sub>90</sub> × CF (1) (tentative) | (0.2*) | 0.35 | STMR<sub>90</sub> × CF (1) (tentative) |
| Swine kidney | 0.21 | STMR<sub>90</sub> × CF (1) (tentative) | (0.21) | 2.43 | STMR<sub>90</sub> × CF (1) (tentative) |
| Bovine meat | 0.17 | STMR<sub>90</sub> muscle × CF (1) (tentative) | (0.2*) | 0.18 | STMR<sub>90</sub> muscle × CF (1) (tentative) |
| Bovine fat tissue | 0.2* | STMR<sub>90</sub> × CF (1) (tentative) | (0.2*) | 0.2* | STMR<sub>90</sub> × CF (1) (tentative) |
| Bovine liver | 0.54 | STMR<sub>90</sub> × CF (1) (tentative) | (0.54) | 0.69 | STMR<sub>90</sub> × CF (1) (tentative) |
| Bovine kidney | 0.669 | STMR<sub>90</sub> × CF (1) (tentative) | (0.696) | 6.79 | STMR<sub>90</sub> × CF (1) (tentative) |
| Sheep meat | 0.17 | STMR<sub>90</sub> muscle × CF (1) (tentative) | (0.2*) | 0.19 | STMR<sub>90</sub> muscle × CF (1) (tentative) |
| Sheep fat tissue | 0.2* | STMR<sub>90</sub> × CF (1) (tentative) | (0.2*) | 0.21 | STMR<sub>90</sub> × CF (1) (tentative) |
| Sheep liver | 0.54 | STMR<sub>90</sub> × CF (1) (tentative) | (0.54) | 0.81 | STMR<sub>90</sub> × CF (1) (tentative) |
| Sheep kidney | 0.80 | STMR<sub>90</sub> × CF (1) (tentative) | (0.80) | 9.27 | STMR<sub>90</sub> × CF (1) (tentative) |
| Commodity          | Input value (mg/kg) (main RD-Mo) | Comment                          | Input value (mg/kg) (opt. RD-Mo) | Comment                          | Input value (mg/kg) (opt. RD-Mo) |
|--------------------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|
| Goat meat          | 0.17 STMR<sub>90</sub> muscle × CF (1) (tentative) |                                 | (0.2*) STMR<sub>90</sub> muscle × CF (1) (opt. RD-Mo) |                                 | (0.19) HR<sub>90</sub> muscle × CF (1) (tentative) |
| Goat fat tissue    | 0.2* STMR<sub>90</sub> × CF (1) (tentative) |                                 | (0.2*) STMR<sub>90</sub> × CF (1) (opt. RD-Mo) |                                 | (0.21) HR<sub>90</sub> × CF (1) (tentative) |
| Goat liver         | 0.54 STMR<sub>90</sub> × CF (1) (tentative) |                                 | (0.54) STMR<sub>90</sub> × CF (1) (opt. RD-Mo) |                                 | (0.81) HR<sub>90</sub> × CF (1) (tentative) |
| Goat kidney        | 0.80 STMR<sub>90</sub> × CF (1) (tentative) |                                 | (0.80) STMR<sub>90</sub> × CF (1) (opt. RD-Mo) |                                 | (9.27) HR<sub>90</sub> × CF (1) (tentative) |
| Equine meat        | 0.17 STMR<sub>90</sub> muscle × CF (1) (tentative) |                                 | (0.2*) STMR<sub>90</sub> muscle × CF (1) (opt. RD-Mo) |                                 | (0.18) HR<sub>90</sub> muscle × CF (1) (tentative) |
| Equine fat tissue  | 0.2* STMR<sub>90</sub> × CF (1) (tentative) |                                 | (0.2*) STMR<sub>90</sub> × CF (1) (opt. RD-Mo) |                                 | (0.2*) HR<sub>90</sub> × CF (1) (tentative) |
| Equine liver       | 0.54 STMR<sub>90</sub> × CF (1) (tentative) |                                 | (0.54) STMR<sub>90</sub> × CF (1) (opt. RD-Mo) |                                 | (0.69) HR<sub>90</sub> × CF (1) (tentative) |
| Equine kidney      | 0.66 STMR<sub>90</sub> × CF (1) (tentative) |                                 | (0.66) STMR<sub>90</sub> × CF (1) (opt. RD-Mo) |                                 | (6.79) HR<sub>90</sub> × CF (1) (tentative) |
| Poultry meat       | 0.17 STMR<sub>90</sub> muscle × CF (1) (tentative) |                                 | (0.2*) STMR<sub>90</sub> muscle × CF (1) (opt. RD-Mo) |                                 | (0.17) HR<sub>90</sub> muscle × CF (1) (tentative) |
| Poultry fat tissue | 0.2* STMR<sub>90</sub> × CF (1) (tentative) |                                 | (0.2*) STMR<sub>90</sub> × CF (1) (opt. RD-Mo) |                                 | (0.2*) HR<sub>90</sub> × CF (1) (tentative) |
| Poultry liver      | 0.2* STMR<sub>90</sub> × CF (1) (tentative) |                                 | (0.2*) STMR<sub>90</sub> × CF (1) (opt. RD-Mo) |                                 | (0.2*) HR<sub>90</sub> × CF (1) (tentative) |
| Cattle milk        | 0.1* STMR<sub>90</sub> × CF (1) (tentative) |                                 | (0.1*) STMR<sub>90</sub> × CF (1) (opt. RD-Mo) |                                 | (0.1*) HR<sub>90</sub> × CF (1) (tentative) |
| Sheep milk         | 0.1* STMR<sub>90</sub> × CF (1) (tentative) |                                 | (0.1*) STMR<sub>90</sub> × CF (1) (opt. RD-Mo) |                                 | (0.1*) HR<sub>90</sub> × CF (1) (tentative) |
| Goat milk          | 0.1* STMR<sub>90</sub> × CF (1) (tentative) |                                 | (0.1*) STMR<sub>90</sub> × CF (1) (opt. RD-Mo) |                                 | (0.1*) HR<sub>90</sub> × CF (1) (tentative) |
| Horse milk         | 0.1* STMR<sub>90</sub> × CF (1) (tentative) |                                 | (0.1*) STMR<sub>90</sub> × CF (1) (opt. RD-Mo) |                                 | (0.1*) HR<sub>90</sub> × CF (1) (tentative) |
| Birds eggs         | 0.1* STMR<sub>90</sub> × CF (1) (tentative) |                                 | (0.1*) STMR<sub>90</sub> × CF (1) (opt. RD-Mo) |                                 | (0.1*) HR<sub>90</sub> × CF (1) (tentative) |

*: Indicates that the input value is proposed at the limit of quantification.
(a): GAP is not supported by data; the existing EU MRL is used for indicative exposure calculations; indicative conversion factors of 1.1 (for oilseeds) and 2.3 (for cereals) were considered for risk assessment.
(b): GAP is not supported by data; the existing EU MRL multiplied by the worst-case conversion factor of 2.3 for risk assessment is used for indicative exposure calculations.
### D.3. Consumer risk assessment with consideration of the existing CXLs

| Commodity                  | Chronic risk assessment | Acute risk assessment |
|----------------------------|-------------------------|-----------------------|
| **Input value (mg/kg)**    | **Comment**             | **Input value (mg/kg)** | **Comment** |
| (main RD-Mo)               |                         | (opt. RD-Mo)          |             |
| **Input value (mg/kg)**    | **Comment**             | **Input value (mg/kg)** | **Comment** |
| (opt. RD-Mo)               |                         | (main RD-Mo)          |             |
| **Risks assessment residue definition:** sum of glyphosate, AMPA, N-acetyl-glyphosate and N-acetyl-AMPA, expressed as glyphosate |

- **Grapefruits**: 0.05* STMR_{90} × CF (1) (0.2*) 0.05* HR_{90} × CF (1) (0.2*)
- **Oranges**: 0.05* STMR_{90} × CF (1) (0.2*) 0.05* HR_{90} × CF (1) (0.2*)
- **Lemons**: 0.05* STMR_{90} × CF (1) (0.2*) 0.05* HR_{90} × CF (1) (0.2*)
- **Limes**: 0.05* STMR_{90} × CF (1) (0.2*) 0.05* HR_{90} × CF (1) (0.2*)
- **Mandarins**: 0.05* STMR_{90} × CF (1) (0.2*) 0.05* HR_{90} × CF (1) (0.2*)
- **Almonds**: 0.05* STMR_{90} × CF (1) (0.2*) 0.05* HR_{90} × CF (1) (0.2*)
- **Brazil nuts**: 0.05* STMR_{90} × CF (1) (0.2*) 0.05* HR_{90} × CF (1) (0.2*)
- **Cashew nuts**: 0.05* STMR_{90} × CF (1) (0.2*) 0.05* HR_{90} × CF (1) (0.2*)
- **Chestnuts**: 0.05* STMR_{90} × CF (1) (0.2*) 0.05* HR_{90} × CF (1) (0.2*)
- **Coconuts**: 0.05* STMR_{90} × CF (1) (0.2*) 0.05* HR_{90} × CF (1) (0.2*)
- **Hazelnuts/cobnuts**: 0.05* STMR_{90} × CF (1) (0.2*) 0.05* HR_{90} × CF (1) (0.2*)
- **Macadamias**: 0.05* STMR_{90} × CF (1) (0.2*) 0.05* HR_{90} × CF (1) (0.2*)
- **Pecans**: 0.05* STMR_{90} × CF (1) (0.2*) 0.05* HR_{90} × CF (1) (0.2*)
- **Pine nut kernels**: 0.05* STMR_{90} × CF (1) (0.2*) 0.05* HR_{90} × CF (1) (0.2*)
- **Pistachios**: 0.05* STMR_{90} × CF (1) (0.2*) 0.05* HR_{90} × CF (1) (0.2*)
- **Walnuts**: 0.05* STMR_{90} × CF (1) (0.2*) 0.05* HR_{90} × CF (1) (0.2*)
- **Apples**: 0.05* STMR_{90} × CF (1) (0.2*) 0.05* HR_{90} × CF (1) (0.2*)
- **Pears**: 0.05* STMR_{90} × CF (1) (0.2*) 0.05* HR_{90} × CF (1) (0.2*)
- **Quinces**: 0.05* STMR_{90} × CF (1) (0.2*) 0.05* HR_{90} × CF (1) (0.2*)
- **Medlars**: 0.05* STMR_{90} × CF (1) (0.2*) 0.05* HR_{90} × CF (1) (0.2*)
- **Loquats/Japanese medlars**: 0.05* STMR_{90} × CF (1) (0.2*) 0.05* HR_{90} × CF (1) (0.2*)
- **Apricots**: 0.05* STMR_{90} × CF (1) (0.2*) 0.05* HR_{90} × CF (1) (0.2*)
- **Cherries (sweet)**: 0.05* STMR_{90} × CF (1) (0.2*) 0.05* HR_{90} × CF (1) (0.2*)
- **Peaches**: 0.05* STMR_{90} × CF (1) (0.2*) 0.05* HR_{90} × CF (1) (0.2*)
- **Plums**: 0.05* STMR_{90} × CF (1) (0.2*) 0.05* HR_{90} × CF (1) (0.2*)
- **Table grapes**: 0.05* STMR_{90} × CF (1) (0.2*) 0.05* HR_{90} × CF (1) (0.2*)
| Commodity                              | Input value (mg/kg) (main RD-Mo) | Chronic risk assessment | Input value (mg/kg) (opt. RD-Mo) | Acute risk assessment | Input value (mg/kg) (opt. RD-Mo) |
|----------------------------------------|----------------------------------|-------------------------|----------------------------------|-----------------------|----------------------------------|
| Wine grapes                           | 0.05*                            | STMR<sub>90</sub> × CF (1) | (0.2*)                           | 0.05*                 | HR<sub>90</sub> × CF (1)         |
| Strawberries                          | 0.05*                            | STMR<sub>90</sub> × CF (1) (tentative) | (0.2*)                           | 0.05*                 | HR<sub>90</sub> × CF (1) (tentative) |
| Blackberries                          | 0.05*                            | STMR<sub>90</sub> × CF (1) (tentative) | (0.2*)                           | 0.05*                 | HR<sub>90</sub> × CF (1) (tentative) |
| Dewberries                            | 0.05*                            | STMR<sub>90</sub> × CF (1) (tentative) | (0.2*)                           | 0.05*                 | HR<sub>90</sub> × CF (1) (tentative) |
| Raspberries (red and yellow)          | 0.05*                            | STMR<sub>90</sub> × CF (1) (tentative) | (0.2*)                           | 0.05*                 | HR<sub>90</sub> × CF (1) (tentative) |
| Blueberries                           | 0.05*                            | STMR<sub>90</sub> × CF (1) (tentative) | (0.2*)                           | 0.05*                 | HR<sub>90</sub> × CF (1) (tentative) |
| Cranberries                           | 0.05*                            | STMR<sub>90</sub> × CF (1) (tentative) | (0.2*)                           | 0.05*                 | HR<sub>90</sub> × CF (1) (tentative) |
| Currants (black, red and white)       | 0.05*                            | STMR<sub>90</sub> × CF (1) (tentative) | (0.2*)                           | 0.05*                 | HR<sub>90</sub> × CF (1) (tentative) |
| Gooseberries (green, red and yellow)  | 0.05*                            | STMR<sub>90</sub> × CF (1) (tentative) | (0.2*)                           | 0.05*                 | HR<sub>90</sub> × CF (1) (tentative) |
| Rose hips                             | 0.05*                            | STMR<sub>90</sub> × CF (1) (tentative) | (0.2*)                           | 0.05*                 | HR<sub>90</sub> × CF (1) (tentative) |
| Mulberries (black and white)          | 0.05*                            | STMR<sub>90</sub> × CF (1) (tentative) | (0.2*)                           | 0.05*                 | HR<sub>90</sub> × CF (1) (tentative) |
| Azaroles/Mediterranean medlars        | 0.05*                            | STMR<sub>90</sub> × CF (1) (tentative) | (0.2*)                           | 0.05*                 | HR<sub>90</sub> × CF (1) (tentative) |
| Elderberries                          | 0.05*                            | STMR<sub>90</sub> × CF (1) (tentative) | (0.2*)                           | 0.05*                 | HR<sub>90</sub> × CF (1) (tentative) |
| Figs                                   | 0.05*                            | STMR<sub>90</sub> × CF (1) (0.2*) | (0.2*)                           | 0.05*                 | HR<sub>90</sub> × CF (1)         |
| Table olives                          | 0.05*                            | STMR<sub>90</sub> × CF (1) (0.2*) | (0.2*)                           | 0.05*                 | HR<sub>90</sub> × CF (1) (0.2*)   |
| Kumquats                              | 0.05*                            | STMR<sub>90</sub> × CF (1) (0.2*) | (0.2*)                           | 0.05*                 | HR<sub>90</sub> × CF (1) (0.2*)   |
| Kakü/Japanese persimmons              | 0.05*                            | STMR<sub>90</sub> × CF (1) (0.2*) | (0.2*)                           | 0.05*                 | HR<sub>90</sub> × CF (1) (0.2*)   |
| Kiwi fruits (green, red, yellow)      | 0.05*                            | STMR<sub>90</sub> × CF (1) (0.2*) | (0.2*)                           | 0.05*                 | HR<sub>90</sub> × CF (1) (0.2*)   |
| Litchis/lychees                       | 0.05*                            | STMR<sub>90</sub> × CF (1) (0.2*) | (0.2*)                           | 0.05*                 | HR<sub>90</sub> × CF (1) (0.2*)   |
| Passionfruits/maracujas               | 0.05*                            | STMR<sub>90</sub> × CF (1) (0.2*) | (0.2*)                           | 0.05*                 | HR<sub>90</sub> × CF (1) (0.2*)   |
| Avocados                              | 0.05*                            | STMR<sub>90</sub> × CF (1) (0.2*) | (0.2*)                           | 0.05*                 | HR<sub>90</sub> × CF (1) (0.2*)   |
| Bananas                               | 0.05*                            | STMR<sub>90</sub> × CF (1) (0.2*) | (0.2*)                           | 0.05*                 | HR<sub>90</sub> × CF (1) (0.2*)   |
| Mangoes                                | 0.05*                            | STMR<sub>90</sub> × CF (1) (0.2*) | (0.2*)                           | 0.05*                 | HR<sub>90</sub> × CF (1) (0.2*)   |
| Papayas                                | 0.05*                            | STMR<sub>90</sub> × CF (1) (0.2*) | (0.2*)                           | 0.05*                 | HR<sub>90</sub> × CF (1) (0.2*)   |
| Granate apples/pomegranates           | 0.05*                            | STMR<sub>90</sub> × CF (1) (0.2*) | (0.2*)                           | 0.05*                 | HR<sub>90</sub> × CF (1) (0.2*)   |
| Cherimoyas                             | 0.05*                            | STMR<sub>90</sub> × CF (1) (0.2*) | (0.2*)                           | 0.05*                 | HR<sub>90</sub> × CF (1) (0.2*)   |
| Potatoes                               | 0.07                             | STMR<sub>90</sub> × CF (1) (0.2*) | (0.2*)                           | 0.59                  | HR<sub>90</sub> × CF (1) (tentative) |
| Cassava roots/manioc                  | 0.05*                            | STMR<sub>90</sub> × CF (1) (0.2*) | (0.2*)                           | 0.05*                 | HR<sub>90</sub> × CF (1) (0.2*)   |
| Commodity                          | Input value (mg/kg) (main RD-Mo) | Chronic risk assessment | Input value (mg/kg) (opt. RD-Mo) | Acute risk assessment | Input value (mg/kg) (opt. RD-Mo) |
|-----------------------------------|----------------------------------|------------------------|----------------------------------|-----------------------|---------------------------------|
| Sweet potatoes                    | 0.05*                            | STMR<sub>90</sub> × CF (1) (tentative) | (0.2*)                        | 0.05*                  | HR<sub>90</sub> × CF (1) (tentative) | (0.2*)                        |
| Yams                              | 0.05*                            | STMR<sub>90</sub> × CF (1) (tentative) | (0.2*)                        | 0.05*                  | HR<sub>90</sub> × CF (1) (tentative) | (0.2*)                        |
| Arrowroots                        | 0.05*                            | STMR<sub>90</sub> × CF (1) (tentative) | (0.2*)                        | 0.05*                  | HR<sub>90</sub> × CF (1) (tentative) | (0.2*)                        |
| Beetroots                         | 0.05*                            | STMR<sub>90</sub> × CF (1) (tentative) | (0.2*)                        | 0.05*                  | HR<sub>90</sub> × CF (1) (tentative) | (0.2*)                        |
| Carrots                           | 0.05*                            | STMR<sub>90</sub> × CF (1) (tentative) | (0.2*)                        | 0.05*                  | HR<sub>90</sub> × CF (1) (tentative) | (0.2*)                        |
| Celeriacs/tumip rooted celeries   | 0.05*                            | STMR<sub>90</sub> × CF (1) (tentative) | (0.2*)                        | 0.05*                  | HR<sub>90</sub> × CF (1) (tentative) | (0.2*)                        |
| Horseradishes                     | 0.05*                            | STMR<sub>90</sub> × CF (1) (tentative) | (0.2*)                        | 0.05*                  | HR<sub>90</sub> × CF (1) (tentative) | (0.2*)                        |
| Jerusalem artichokes              | 0.05*                            | STMR<sub>90</sub> × CF (1) (tentative) | (0.2*)                        | 0.05*                  | HR<sub>90</sub> × CF (1) (tentative) | (0.2*)                        |
| Parsnips                          | 0.05*                            | STMR<sub>90</sub> × CF (1) (tentative) | (0.2*)                        | 0.05*                  | HR<sub>90</sub> × CF (1) (tentative) | (0.2*)                        |
| Parsley roots/Hamburg roots parsley | 0.05*                         | STMR<sub>90</sub> × CF (1) (tentative) | (0.2*)                        | 0.05*                  | HR<sub>90</sub> × CF (1) (tentative) | (0.2*)                        |
| Radishes                          | 0.05*                            | STMR<sub>90</sub> × CF (1) (tentative) | (0.2*)                        | 0.05*                  | HR<sub>90</sub> × CF (1) (tentative) | (0.2*)                        |
| Salsifies                         | 0.05*                            | STMR<sub>90</sub> × CF (1) (tentative) | (0.2*)                        | 0.05*                  | HR<sub>90</sub> × CF (1) (tentative) | (0.2*)                        |
| Swedes/rutabagas                  | 0.05*                            | STMR<sub>90</sub> × CF (1) (tentative) | (0.2*)                        | 0.05*                  | HR<sub>90</sub> × CF (1) (tentative) | (0.2*)                        |
| Turnips                           | 0.05*                            | STMR<sub>90</sub> × CF (1) (tentative) | (0.2*)                        | 0.05*                  | HR<sub>90</sub> × CF (1) (tentative) | (0.2*)                        |
| Garlic                            | 0.05*                            | STMR<sub>90</sub> × CF (1) (tentative) | (0.2*)                        | 0.05*                  | HR<sub>90</sub> × CF (1) (tentative) | (0.2*)                        |
| Onions                            | 0.05*                            | STMR<sub>90</sub> × CF (1) (tentative) | (0.2*)                        | 0.05*                  | HR<sub>90</sub> × CF (1) (tentative) | (0.2*)                        |
| Shallots                          | 0.05*                            | STMR<sub>90</sub> × CF (1) (tentative) | (0.2*)                        | 0.05*                  | HR<sub>90</sub> × CF (1) (tentative) | (0.2*)                        |
| Spring onions/green onions and Welsh onions | 0.05*                        | STMR<sub>90</sub> × CF (1) (tentative) | (0.2*)                        | 0.05*                  | HR<sub>90</sub> × CF (1) (tentative) | (0.2*)                        |
| Tomatoes                          | 0.05*                            | STMR<sub>90</sub> × CF (1) (tentative) | (0.2*)                        | 0.05*                  | HR<sub>90</sub> × CF (1) (tentative) | (0.2*)                        |
| Sweet peppers/bell peppers        | 0.05*                            | STMR<sub>90</sub> × CF (1) (tentative) | (0.2*)                        | 0.05*                  | HR<sub>90</sub> × CF (1) (tentative) | (0.2*)                        |
| Aubergines/eggplants              | 0.05*                            | STMR<sub>90</sub> × CF (1) (tentative) | (0.2*)                        | 0.05*                  | HR<sub>90</sub> × CF (1) (tentative) | (0.2*)                        |
| Okra/lady’s fingers               | 0.05*                            | STMR<sub>90</sub> × CF (1) (tentative) | (0.2*)                        | 0.05*                  | HR<sub>90</sub> × CF (1) (tentative) | (0.2*)                        |
| Cucumbers                         | 0.05*                            | STMR<sub>90</sub> × CF (1) (tentative) | (0.2*)                        | 0.05*                  | HR<sub>90</sub> × CF (1) (tentative) | (0.2*)                        |
| Gherkins                          | 0.05*                            | STMR<sub>90</sub> × CF (1) (tentative) | (0.2*)                        | 0.05*                  | HR<sub>90</sub> × CF (1) (tentative) | (0.2*)                        |
| Courgettes                        | 0.05*                            | STMR<sub>90</sub> × CF (1) (tentative) | (0.2*)                        | 0.05*                  | HR<sub>90</sub> × CF (1) (tentative) | (0.2*)                        |
| Melons                            | 0.05*                            | STMR<sub>90</sub> × CF (1) (tentative) | (0.2*)                        | 0.05*                  | HR<sub>90</sub> × CF (1) (tentative) | (0.2*)                        |
| Pumpkins                          | 0.05*                            | STMR<sub>90</sub> × CF (1) (tentative) | (0.2*)                        | 0.05*                  | HR<sub>90</sub> × CF (1) (tentative) | (0.2*)                        |
| Watermelons                       | 0.05*                            | STMR<sub>90</sub> × CF (1) (tentative) | (0.2*)                        | 0.05*                  | HR<sub>90</sub> × CF (1) (tentative) | (0.2*)                        |
| Commodity                              | Input value (mg/kg) (main RD-Mo) | Comment                                      | Input value (mg/kg) (opt. RD-Mo) | Comment                                      | Input value (mg/kg) (main RD-Mo) | Comment                                      | Input value (mg/kg) (opt. RD-Mo) |
|----------------------------------------|----------------------------------|----------------------------------------------|----------------------------------|----------------------------------------------|----------------------------------|----------------------------------------------|----------------------------------|
| Sweet corn                            | 0.51                             | STMR<sub>90</sub> × CF (1) (tentative)       | (0.51)                           | 1.45                                         | HR<sub>90</sub> × CF (1) (tentative) | (1.45)                                         |
| Broccoli                              | 0.05*                            | STMR<sub>90</sub> × CF (1) (tentative)       | (0.2*)                           | 0.05*                                         | HR<sub>90</sub> × CF (1) (tentative) | (0.2*)                                         |
| Cauliflower                           | 0.05*                            | STMR<sub>90</sub> × CF (1) (tentative)       | (0.2*)                           | 0.05*                                         | HR<sub>90</sub> × CF (1) (tentative) | (0.2*)                                         |
| Brussels sprouts                      | 0.05*                            | STMR<sub>90</sub> × CF (1) (tentative)       | (0.2*)                           | 0.05*                                         | HR<sub>90</sub> × CF (1) (tentative) | (0.2*)                                         |
| Head cabbages                         | 0.05*                            | STMR<sub>90</sub> × CF (1) (tentative)       | (0.2*)                           | 0.05*                                         | HR<sub>90</sub> × CF (1) (tentative) | (0.2*)                                         |
| Chinese cabbages/pe-tsai              | 0.05*                            | STMR<sub>90</sub> × CF (1) (tentative)       | (0.2*)                           | 0.05*                                         | HR<sub>90</sub> × CF (1) (tentative) | (0.2*)                                         |
| Kales                                 | 0.05*                            | STMR<sub>90</sub> × CF (1) (tentative)       | (0.2*)                           | 0.05*                                         | HR<sub>90</sub> × CF (1) (tentative) | (0.2*)                                         |
| Kohlrabies                            | 0.05*                            | STMR<sub>90</sub> × CF (1) (tentative)       | (0.2*)                           | 0.05*                                         | HR<sub>90</sub> × CF (1) (tentative) | (0.2*)                                         |
| Lamb’s lettuces/corn salads           | 0.05*                            | STMR<sub>90</sub> × CF (1) (tentative)       | (0.2*)                           | 0.05*                                         | HR<sub>90</sub> × CF (1) (tentative) | (0.2*)                                         |
| Lettuces                              | 0.05*                            | STMR<sub>90</sub> × CF (1) (tentative)       | (0.2*)                           | 0.05*                                         | HR<sub>90</sub> × CF (1) (tentative) | (0.2*)                                         |
| Escaroles/broadleaved endives         | 0.05*                            | STMR<sub>90</sub> × CF (1) (tentative)       | (0.2*)                           | 0.05*                                         | HR<sub>90</sub> × CF (1) (tentative) | (0.2*)                                         |
| Cresses and other sprouts and shoots  | 0.05*                            | STMR<sub>90</sub> × CF (1) (tentative)       | (0.2*)                           | 0.05*                                         | HR<sub>90</sub> × CF (1) (tentative) | (0.2*)                                         |
| Land cresses                          | 0.05*                            | STMR<sub>90</sub> × CF (1) (tentative)       | (0.2*)                           | 0.05*                                         | HR<sub>90</sub> × CF (1) (tentative) | (0.2*)                                         |
| Roman rocket/rucola                   | 0.05*                            | STMR<sub>90</sub> × CF (1) (tentative)       | (0.2*)                           | 0.05*                                         | HR<sub>90</sub> × CF (1) (tentative) | (0.2*)                                         |
| Red mustards                          | 0.05*                            | STMR<sub>90</sub> × CF (1) (tentative)       | (0.2*)                           | 0.05*                                         | HR<sub>90</sub> × CF (1) (tentative) | (0.2*)                                         |
| Baby leaf crops (including brassica species) | 0.05*                         | STMR<sub>90</sub> × CF (1) (tentative)       | (0.2*)                           | 0.05*                                         | HR<sub>90</sub> × CF (1) (tentative) | (0.2*)                                         |
| Spinaches                             | 0.05*                            | STMR<sub>90</sub> × CF (1) (tentative)       | (0.2*)                           | 0.05*                                         | HR<sub>90</sub> × CF (1) (tentative) | (0.2*)                                         |
| Purslanes                             | 0.05*                            | STMR<sub>90</sub> × CF (1) (tentative)       | (0.2*)                           | 0.05*                                         | HR<sub>90</sub> × CF (1) (tentative) | (0.2*)                                         |
| Chards/beet leaves                    | 0.05*                            | STMR<sub>90</sub> × CF (1) (tentative)       | (0.2*)                           | 0.05*                                         | HR<sub>90</sub> × CF (1) (tentative) | (0.2*)                                         |
| Grape leaves and similar species      | 0.05*                            | STMR<sub>90</sub> × CF (1) (tentative)       | (0.2*)                           | 0.05*                                         | HR<sub>90</sub> × CF (1) (tentative) | (0.2*)                                         |
| Watercresses                          | 0.05*                            | STMR<sub>90</sub> × CF (1) (tentative)       | (0.2*)                           | 0.05*                                         | HR<sub>90</sub> × CF (1) (tentative) | (0.2*)                                         |
| Witloofs/Belgian endives              | 0.05*                            | STMR<sub>90</sub> × CF (1) (tentative)       | (0.2*)                           | 0.05*                                         | HR<sub>90</sub> × CF (1) (tentative) | (0.2*)                                         |
| Chervil                                | 0.05*                            | STMR<sub>90</sub> × CF (1) (tentative)       | (0.2*)                           | 0.05*                                         | HR<sub>90</sub> × CF (1) (tentative) | (0.2*)                                         |
| Chives                                | 0.05*                            | STMR<sub>90</sub> × CF (1) (tentative)       | (0.2*)                           | 0.05*                                         | HR<sub>90</sub> × CF (1) (tentative) | (0.2*)                                         |
| Celery leaves                         | 0.05*                            | STMR<sub>90</sub> × CF (1) (tentative)       | (0.2*)                           | 0.05*                                         | HR<sub>90</sub> × CF (1) (tentative) | (0.2*)                                         |
| Parsley                               | 0.05*                            | STMR<sub>90</sub> × CF (1) (tentative)       | (0.2*)                           | 0.05*                                         | HR<sub>90</sub> × CF (1) (tentative) | (0.2*)                                         |
| Sage                                  | 0.05*                            | STMR<sub>90</sub> × CF (1) (tentative)       | (0.2*)                           | 0.05*                                         | HR<sub>90</sub> × CF (1) (tentative) | (0.2*)                                         |
| Rosemary                              | 0.05*                            | STMR<sub>90</sub> × CF (1) (tentative)       | (0.2*)                           | 0.05*                                         | HR<sub>90</sub> × CF (1) (tentative) | (0.2*)                                         |
### Commodity Risk Assessment

| Commodity                  | Chronic risk assessment | Input value (mg/kg) (main RD-Mo) | Comment                              | Acute risk assessment | Input value (mg/kg) (opt. RD-Mo) |
|----------------------------|-------------------------|----------------------------------|--------------------------------------|-----------------------|----------------------------------|
| Thyme                      | STMR<sub>90</sub> × CF (1) (tentative) | 0.05*                            |                                      | HR<sub>90</sub> × CF (1) (tentative) | 0.05*                            |
| Basil and edible flowers   | STMR<sub>90</sub> × CF (1) (tentative) | 0.05*                            |                                      | HR<sub>90</sub> × CF (1) (tentative) | 0.05*                            |
| Laurel/bay leave           | STMR<sub>90</sub> × CF (1) (tentative) | 0.05*                            |                                      | HR<sub>90</sub> × CF (1) (tentative) | 0.05*                            |
| Tarragon                   | STMR<sub>90</sub> × CF (1) (tentative) | 0.05*                            |                                      | HR<sub>90</sub> × CF (1) (tentative) | 0.05*                            |
| Beans (with pods)          | STMR<sub>90</sub> × CF (1) (tentative) | 0.05*                            |                                      | HR<sub>90</sub> × CF (1) (tentative) | 0.05*                            |
| Beans (without pods)       | STMR<sub>90</sub> × CF (1) (tentative) | 0.05*                            |                                      | HR<sub>90</sub> × CF (1) (tentative) | 0.05*                            |
| Peas (with pods)           | STMR<sub>90</sub> × CF (1) (tentative) | 0.05*                            |                                      | HR<sub>90</sub> × CF (1) (tentative) | 0.05*                            |
| Peas (without pods)        | STMR<sub>90</sub> × CF (1) (tentative) | 0.05*                            |                                      | HR<sub>90</sub> × CF (1) (tentative) | 0.05*                            |
| Lentils (fresh)            | STMR<sub>90</sub> × CF (1) (tentative) | 0.05*                            |                                      | HR<sub>90</sub> × CF (1) (tentative) | 0.05*                            |
| Asparagus                  | STMR<sub>90</sub> × CF (1) (tentative) | 0.05*                            |                                      | HR<sub>90</sub> × CF (1) (tentative) | 0.05*                            |
| Cardoons                   | STMR<sub>90</sub> × CF (1) (tentative) | 0.05*                            |                                      | HR<sub>90</sub> × CF (1) (tentative) | 0.05*                            |
| Celeries                   | STMR<sub>90</sub> × CF (1) (tentative) | 0.05*                            |                                      | HR<sub>90</sub> × CF (1) (tentative) | 0.05*                            |
| Florence fennels           | STMR<sub>90</sub> × CF (1) (tentative) | 0.05*                            |                                      | HR<sub>90</sub> × CF (1) (tentative) | 0.05*                            |
| Globe artichokes           | STMR<sub>90</sub> × CF (1) (tentative) | 0.05*                            |                                      | HR<sub>90</sub> × CF (1) (tentative) | 0.05*                            |
| Leeks                      | STMR<sub>90</sub> × CF (1) (tentative) | 0.05*                            |                                      | HR<sub>90</sub> × CF (1) (tentative) | 0.05*                            |
| Rhubarbs                   | STMR<sub>90</sub> × CF (1) (tentative) | 0.05*                            |                                      | HR<sub>90</sub> × CF (1) (tentative) | 0.05*                            |
| Bamboo shoots              | STMR<sub>90</sub> × CF (1) (tentative) | 0.05*                            |                                      | HR<sub>90</sub> × CF (1) (tentative) | 0.05*                            |
| Palm hearts                | STMR<sub>90</sub> × CF (1) (tentative) | 0.05*                            |                                      | HR<sub>90</sub> × CF (1) (tentative) | 0.05*                            |
| Cultivated fungi           | EU MRL × CF (2.3)<sup>b</sup> | 0.23                             |                                      | EU MRL × CF (2.3)<sup>b</sup> | 0.23                             |
| Wild fungi                 | STMR<sub>90</sub> × CF (1) (tentative) | 0.05*                            |                                      | HR<sub>90</sub> × CF (1) (tentative) | 0.05*                            |
| Beans (dry)                | STMR<sub>90</sub> × CF (2) (tentative) | 0.92                             |                                      | HR<sub>90</sub> × CF (2) (tentative) | 22                               |
| Lentils (dry)              | STMR<sub>90</sub> × CF (2) (tentative) | 1.45                             |                                      | HR<sub>90</sub> × CF (2) (tentative) | 15.2                             |
| Peas (dry)                 | STMR<sub>90</sub> × CF (2) (tentative) | 0.92                             |                                      | HR<sub>90</sub> × CF (2) (tentative) | 22                               |
| Lupins/lupini beans (dry)  | STMR<sub>90</sub> × CF (2) (tentative) | 0.22                             |                                      | HR<sub>90</sub> × CF (2) (tentative) | 15.2                             |
| Linseeds                   | STMR<sub>90</sub> × CF (1.1) (tentative) | 1.28                             |                                      | HR<sub>90</sub> × CF (1.1) (tentative) | 11.94                            |
| Peanuts/groundnuts         | STMR<sub>90</sub> × CF (1) (tentative) | 0.05*                            |                                      | HR<sub>90</sub> × CF (1) (tentative) | 0.05*                            |
| Poppy seeds                | STMR<sub>90</sub> × CF (1) (tentative) | 0.05*                            |                                      | HR<sub>90</sub> × CF (1) (tentative) | 0.05*                            |
| Sesame seeds               | STMR<sub>90</sub> × CF (1) (tentative) | 0.05*                            |                                      | HR<sub>90</sub> × CF (1) (tentative) | 0.05*                            |
| Sunflower seeds            | STMR<sub>90</sub> × CF (1.1) (tentative) | 1.27                             |                                      | HR<sub>90</sub> × CF (1.1) (tentative) | 18                               |
## Commodity

| Commodity                                      | Chronic risk assessment | Acute risk assessment |
|------------------------------------------------|-------------------------|-----------------------|
| **Input value (mg/kg)**                        | **Comment**             | **Input value (mg/kg)** | **Comment** | **Input value (mg/kg)** |
| (main RD-Mo)                                   | (opt. RD-Mo)            | (main RD-Mo)          | (opt. RD-Mo) |
| Rapeseeds/canola seeds                         | 2.98 CXL [STMR × CF (1.01)](c) | 15.2 CXL [HR × CF (1.01)](c) | (tentative) | (tentative) | (15.2) |
| Soyabeans                                      | 0.68 STMR0.68 × CF (1) (tentative) | 3.40 HR0.68 × CF (1) (tentative) | (0.68) | (0.68) | (3.4) |
| Mustard seeds                                  | 11 EU MRL × CF (1.1)(c) | 11 EU MRL × CF (1.1)(c) | (10) | (10) | (10) |
| Cotton seeds                                   | 17.7 STMR0.2 × CF (1) (tentative) | 30.9 HR0.2 × CF (1) (tentative) | (17.7) | (17.7) | (30.9) |
| Pumpkin seeds                                  | 0.05* STMR0.05 × CF (1) (tentative) | 0.05* HR0.05 × CF (1) (tentative) | (0.2*) | (0.2*) | (0.2*) |
| Safflower seeds                                | 0.05* STMR0.05 × CF (1) (tentative) | 0.05* HR0.05 × CF (1) (tentative) | (0.2*) | (0.2*) | (0.2*) |
| Borage seeds                                   | 0.65 STMR0.65 × CF (1) (tentative) | 6.80 HR0.65 × CF (1) (tentative) | (0.70) | (0.70) | (6.85) |
| Gold of pleasure seeds                         | 0.05* STMR0.05 × CF (1) (tentative) | 0.05* HR0.05 × CF (1) (tentative) | (0.2*) | (0.2*) | (0.2*) |
| Hemp seeds                                     | 0.05* STMR0.05 × CF (1) (tentative) | 0.05* HR0.05 × CF (1) (tentative) | (0.2*) | (0.2*) | (0.2*) |
| Castor beans                                   | 0.05* STMR0.05 × CF (1) (tentative) | 0.05* HR0.05 × CF (1) (tentative) | (0.2*) | (0.2*) | (0.2*) |
| Olives for oil production                       | 0.415 STMR0.415 × CF (1) | 16 HR0.415 × CF (1) (tentative) | (0.53) | (0.53) | (16.1) |
| Oil palms kemens                               | 0.05* STMR0.05 × CF (1) (tentative) | 0.05* HR0.05 × CF (1) (tentative) | (0.2*) | (0.2*) | (0.2*) |
| Oil palms fruits                                | 0.05* STMR0.05 × CF (1) (tentative) | 0.05* HR0.05 × CF (1) (tentative) | (0.2*) | (0.2*) | (0.2*) |
| Kapok                                           | 0.05* STMR0.05 × CF (1) (tentative) | 0.05* HR0.05 × CF (1) (tentative) | (0.2*) | (0.2*) | (0.2*) |
| Barley grains                                   | 7.90 STMR7.90 × CF (1) | 21.4 HR7.90 × CF (1) (tentative) | (8.0) | (8.0) | (21.6) |
| Buckwheat and other pseudocereal grains         | 3.61 CXL [STMR × CF (1.03)](c) | 20.6 CXL [HR × CF (1.03)](c) | (3.61) | (3.61) | (20.6) |
| Maize/corn grains                               | 0.93 STMR0.93 × CF (1) (tentative) | 3.3 HR0.93 × CF (1) (tentative) | (0.93) | (0.93) | (3.3) |
| Common millet/proso millet grains               | 3.61 CXL [STMR × CF (1.03)](c) | 20.6 CXL [HR × CF (1.03)](c) | (3.61) | (3.61) | (20.6) |
| Oat grains                                      | 7.90 STMR7.90 × CF (1) | 21.4 HR7.90 × CF (1) (tentative) | (8.0) | (8.0) | (21.6) |
| Rice grains                                     | 0.23 EU MRL × CF (2.3)(a) | 0.23 EU MRL × CF (2.3)(a) | (0.23) | (0.23) | (0.23) |
| Rye grain                                       | 3.61 CXL [STMR × CF (1.03)](c) | 20.6 CXL [HR × CF (1.03)](c) | (3.61) | (3.61) | (20.6) |
| Sorghum grains                                  | 3.61 CXL [STMR × CF (1.03)](c) | 20.6 CXL [HR × CF (1.03)](c) | (3.61) | (3.61) | (20.6) |
| Wheat grains                                    | 3.61 CXL [STMR × CF (1.03)](c) | 20.6 CXL [HR × CF (1.03)](c) | (3.61) | (3.61) | (20.6) |
| Teas                                            | 0.05* STMR0.05 × CF (1) (tentative) | 0.05* HR0.05 × CF (1) (tentative) | (0.2*) | (0.2*) | (0.2*) |
| Coffee beans                                    | 0.05* STMR0.05 × CF (1) (tentative) | 0.05* HR0.05 × CF (1) (tentative) | (0.2*) | (0.2*) | (0.2*) |
| Herbal infusions from flowers                   | 0.05* STMR0.05 × CF (1) (tentative) | 0.05* HR0.05 × CF (1) (tentative) | (0.2*) | (0.2*) | (0.2*) |
| Commodity                                               | Input value (mg/kg) | Chronic risk assessment | Input value (mg/kg) (opt. RD-Mo) | Acute risk assessment | Input value (mg/kg) (opt. RD-Mo) |
|--------------------------------------------------------|---------------------|-------------------------|-----------------------------------|-----------------------|-----------------------------------|
| Herbal infusions from leaves and herbs                 | 0.05*               | STMR \(_{90}\) × CF (1) (tentative) | (0.2*)                           | 0.05*                 | HR \(_{90}\) × CF (1) (tentative) |
| Herbal infusions from roots                            | 0.05*               | STMR \(_{90}\) × CF (1) (tentative) | (0.2*)                           | 0.05*                 | HR \(_{90}\) × CF (1) (tentative) |
| Carobs/Saint John's breads                             | 0.05*               | STMR \(_{90}\) × CF (1) (tentative) | (0.2*)                           | 0.05*                 | HR \(_{90}\) × CF (1) (tentative) |
| Hops                                                   | 0.05*               | STMR \(_{90}\) × CF (1) (tentative) | (0.2*)                           | 0.05*                 | HR \(_{90}\) × CF (1) (tentative) |
| Seed spices                                            | 0.05*               | STMR \(_{90}\) × CF (1) (tentative) | (0.2*)                           | 0.05*                 | HR \(_{90}\) × CF (1) (tentative) |
| Fruit spices                                           | 0.05*               | STMR \(_{90}\) × CF (1) (tentative) | (0.2*)                           | 0.05*                 | HR \(_{90}\) × CF (1) (tentative) |
| Bark spices                                            | 0.05*               | STMR \(_{90}\) × CF (1) (tentative) | (0.2*)                           | 0.05*                 | HR \(_{90}\) × CF (1) (tentative) |
| Root and rhizome spices                                | 0.05*               | STMR \(_{90}\) × CF (1) (tentative) | (0.2*)                           | 0.05*                 | HR \(_{90}\) × CF (1) (tentative) |
| Bud spices                                             | 0.05*               | STMR \(_{90}\) × CF (1) (tentative) | (0.2*)                           | 0.05*                 | HR \(_{90}\) × CF (1) (tentative) |
| Flower pistil spices                                   | 0.05*               | STMR \(_{90}\) × CF (1) (tentative) | (0.2*)                           | 0.05*                 | HR \(_{90}\) × CF (1) (tentative) |
| Aril spices                                            | 0.05*               | STMR \(_{90}\) × CF (1) (tentative) | (0.2*)                           | 0.05*                 | HR \(_{90}\) × CF (1) (tentative) |
| Sugar beetroots                                        | 3.3                 | OXL [STMR \(_{90}\) × CF (1)\(^{i,c}\)] (3.3) | 7.1                              | CXL [HR \(_{90}\) × CF (1)\(^{i,c}\)] (7.1) |
| Sugar canes                                            | 0.32                | OXL [STMR \(_{90}\) × CF (1.19)\(^{i,c}\)] (0.2*)\(^{i,d}\) | 1.15                             | CXL [HR \(_{90}\) × CF (1.19)\(^{i,c}\)] (0.2*)\(^{i,d}\) |
| Chicory roots                                          | 0.05*               | STMR \(_{90}\) × CF (1) (tentative) | (0.2*)                           | 0.05*                 | HR \(_{90}\) × CF (1) (tentative) |
| Swine meat                                             | 0.17                | STMR \(_{90}\) muscle × CF (1) (tentative) | (0.17)                           | 0.17                  | HR \(_{90}\) muscle × CF (1) (tentative) |
| Swine fat tissue                                       | 0.2*                | STMR \(_{90}\) × CF (1) (tentative) | (0.2*)                           | 0.2*                  | HR \(_{90}\) × CF (1) (tentative) |
| Swine liver                                            | 0.17                | STMR \(_{90}\) × CF (1) (tentative) | (0.2*)                           | 0.35                  | HR \(_{90}\) × CF (1) (tentative) |
| Swine kidney                                           | 0.21                | STMR \(_{90}\) × CF (1) (tentative) | (0.21)                           | 2.43                  | HR \(_{90}\) × CF (1) (tentative) |
| Bovine meat                                            | 0.17                | STMR \(_{90}\) muscle × CF (1) (tentative) | (0.2*)                           | 0.18                  | HR \(_{90}\) muscle × CF (1) (tentative) |
| Bovine fat tissue                                      | 0.2*                | STMR \(_{90}\) × CF (1) (tentative) | (0.2*)                           | 0.2*                  | HR \(_{90}\) × CF (1) (tentative) |
| Bovine liver                                           | 0.54                | STMR \(_{90}\) × CF (1) (tentative) | (0.54)                           | 0.69                  | HR \(_{90}\) × CF (1) (tentative) |
| Bovine kidney                                          | 0.66                | STMR \(_{90}\) × CF (1) (tentative) | (0.66)                           | 6.79                  | HR \(_{90}\) × CF (1) (tentative) |
| Sheep meat                                             | 0.17                | STMR \(_{90}\) muscle × CF (1) (tentative) | (0.2*)                           | 0.19                  | HR \(_{90}\) muscle × CF (1) (tentative) |
| Sheep fat tissue                                       | 0.2*                | STMR \(_{90}\) × CF (1) (tentative) | (0.2*)                           | 0.21                  | HR \(_{90}\) × CF (1) (tentative) |
| Sheep liver                                            | 0.54                | STMR \(_{90}\) × CF (1) (tentative) | (0.54)                           | 0.81                  | HR \(_{90}\) × CF (1) (tentative) |
| Commodity          | Input value (mg/kg) (main RD-Mo) | Comment                        | Input value (mg/kg) (opt. RD-Mo) | Comment                        | Input value (mg/kg) (opt. RD-Mo) |
|-------------------|---------------------------------|--------------------------------|---------------------------------|--------------------------------|---------------------------------|
| Sheep kidney      | 0.80                            | STMR<sub>90</sub> × CF (1) (tentative) | (0.80)                          | HR<sub>90</sub> × CF (1) (tentative) | (9.27)                          |
| Goat meat         | 0.17                            | STMR<sub>90</sub> muscle × CF (1) (tentative) | (0.2*)                          | HR<sub>90</sub> muscle × CF (1) (tentative) | (0.19)                          |
| Goat fat tissue   | 0.2*                            | STMR<sub>90</sub> × CF (1) (tentative) | (0.2*)                          | HR<sub>90</sub> × CF (1) (tentative) | (0.21)                          |
| Goat liver        | 0.54                            | STMR<sub>90</sub> × CF (1) (tentative) | (0.54)                          | HR<sub>90</sub> × CF (1) (tentative) | (0.81)                          |
| Goat kidney       | 0.80                            | STMR<sub>90</sub> × CF (1) (tentative) | (0.80)                          | HR<sub>90</sub> × CF (1) (tentative) | (9.27)                          |
| Equine meat       | 0.17                            | STMR<sub>90</sub> muscle × CF (1) (tentative) | (0.2*)                          | HR<sub>90</sub> muscle × CF (1) (tentative) | (0.18)                          |
| Equine fat tissue | 0.2*                            | STMR<sub>90</sub> × CF (1) (tentative) | (0.2*)                          | HR<sub>90</sub> × CF (1) (tentative) | (0.2*)                          |
| Equine liver      | 0.54                            | STMR<sub>90</sub> × CF (1) (tentative) | (0.54)                          | HR<sub>90</sub> × CF (1) (tentative) | (0.69)                          |
| Equine kidney     | 0.66                            | STMR<sub>90</sub> × CF (1) (tentative) | (0.66)                          | HR<sub>90</sub> × CF (1) (tentative) | (6.79)                          |
| Poultry meat      | 0.17                            | STMR<sub>90</sub> muscle × CF (1) (tentative) | (0.2*)                          | HR<sub>90</sub> muscle × CF (1) (tentative) | (0.2*)                          |
| Poultry fat tissue| 0.2*                            | STMR<sub>90</sub> × CF (1) (tentative) | (0.2*)                          | HR<sub>90</sub> × CF (1) (tentative) | (0.2*)                          |
| Poultry liver     | 0.2*                            | STMR<sub>90</sub> × CF (1) (tentative) | (0.2*)                          | HR<sub>90</sub> × CF (1) (tentative) | (0.2*)                          |
| Cattle milk       | 0.1*                            | STMR<sub>90</sub> × CF (1) (tentative) | (0.1*)                          | HR<sub>90</sub> × CF (1) (tentative) | (0.1*)                          |
| Sheep milk        | 0.1*                            | STMR<sub>90</sub> × CF (1) (tentative) | (0.1*)                          | HR<sub>90</sub> × CF (1) (tentative) | (0.1*)                          |
| Goat milk         | 0.1*                            | STMR<sub>90</sub> × CF (1) (tentative) | (0.1*)                          | HR<sub>90</sub> × CF (1) (tentative) | (0.1*)                          |
| Horse milk        | 0.1*                            | STMR<sub>90</sub> × CF (1) (tentative) | (0.1*)                          | HR<sub>90</sub> × CF (1) (tentative) | (0.1*)                          |
| Birds eggs        | 0.1*                            | STMR<sub>90</sub> × CF (1) (tentative) | (0.1*)                          | HR<sub>90</sub> × CF (1) (tentative) | (0.1*)                          |

*: Indicates that the input value is proposed at the limit of quantification.
(a): GAP is not supported by data; the existing EU MRL is used for indicative exposure calculations; indicative conversion factors of 1.1 (for oilseeds) and 2.3 (for cereals) were considered for risk assessment.
(b): GAP is not supported by data; the existing EU MRL multiplied by the worst-case conversion factor of 2.3 for risk assessment is used for indicative exposure calculations.
(c): CXL is higher than the MRL derived in Section 1; the corresponding risk assessment values are used for the (indicative) exposure calculations.
(d): CXL on sugar cane could not be considered in the optional scenario since the optional residue definition (sum of glyphosate, AMPA and N-acetyl-glyphosate, expressed as glyphosate) does not allow comparison with this CXL (defined for glyphosate only while residues of AMPA and/or N-acetyl compounds above the LOQ are not excluded).
Appendix E – Decision tree for deriving MRL recommendations

Evaluation of the GAPs and available residues data at EU level

Consumer risk assessment for GAPs evaluated at EU level - EU scenarios

Recommendations resulting from EU authorisations and import tolerances

(A) Specific LOQ or default MRL?
(B) Specific LOQ or default MRL?
(C) Specific LOQ or default MRL?
(D) Specific LOQ or default MRL?
(E) Specific LOQ or default MRL?
(F) Specific LOQ or default MRL?
(G) MRL is recommended.
Review of the existing MRLs for glyphosate - revised version to take into account omitted data

Comparison of the EU recommendation with the existing CXL

- CXL available?
  - Yes
    - RD comparable?
      - Yes
        - CXL higher?
          - No
            - CXL available?
              - Yes
                - RD comparable?
                  - Yes
                    - CXL higher?
                      - No
                        - Maintain EU recommendation indicating that no CXL is available.
                      - Yes
                        - Maintain EU recommendation indicating CXL is not compatible.
                    - Yes
                      - Maintain EU recommendation indicating that CXL is covered.
                  - Yes
                    - Maintain EU recommendation; higher CXL is not safe for consumer.
              - No
                - CXL supported by data?
                  - Yes
                    - CXL is included in the RA.
                    - Risk identified?
                      - Yes
                        - CXL is recommended; EU recommendation is covered as well.
                      - No
                        - Recommend CXL is not included in the RA.
                  - No
                    - CXL is included in the RA.
                    - Risk identified?
                      - Yes
                        - CXL is recommended; EU recommendation is covered as well.
                      - No
                        - Recommend CXL is not included in the RA.

Consumer risk assessment with consideration of the existing CXL

- Input values for the RA remain unchanged.
- CXL supported by data?
  - Yes
    - CXL is included in the RA.
    - Risk identified?
      - Yes
        - CXL is recommended; EU recommendation is covered as well.
      - No
        - Recommend CXL is not included in the RA.
  - No
    - Input values for the RA remain unchanged.
    - CXL is included in the RA.
    - Risk identified?
      - Yes
        - CXL is recommended; EU recommendation is covered as well.
      - No
        - Recommend CXL is not included in the RA.

Recommendations with consideration of the existing CXL

- Maintain EU recommendation indicating that no CXL is available.
- Maintain EU recommendation indicating CXL is not compatible.
- Maintain EU recommendation indicating that CXL is covered.
- Maintain EU recommendation; higher CXL is not safe for consumer.
- Maintain current CXL or EU recommendation.
- Maintain EU recommendation; higher CXL is not safe for consumer.
- CXL is recommended; EU recommendation is covered as well.
## Appendix F – Used compound codes

| Code/trivial name | Chemical name/SMILES notation | Structural formula |
|-------------------|--------------------------------|--------------------|
| glyphosate        | \( N\)-(phosphonomethyl)glycine \(\text{OC(=O)CNCP(=O)(O)O}\) | ![Structural formula for glyphosate] |
| glyphosate-trimesium | \( \text{trimethylsulfonium \(\text{N}\)-[(hydroxyphosphinato)methyl]glycine} \(\text{[O-]}\text{P(=O)(O)CNCC(=O)}\text{=}\text{O.C}\text{[S}^+\text{(C)}\text{C]}\) | ![Structural formula for glyphosate-trimesium] |
| trimethyl- sulfonium (TMS-cation) | \( \text{trimethylsulfanium} \text{C}[\text{S}^+\text{(C)}\text{C]}\) | ![Structural formula for trimethyl-sulfonium] |
| PMG-anion         | \( \text{N}\)-[(hydroxyphosphinato)methyl]glycine | ![Structural formula for PMG-anion] |
| \( N\)-acetyl-glyphosate | \( \text{N-acetyl-}\text{N}\)-(phosphonomethyl)glycine \(\text{OC(=O)CN(CP(=O)(O)O)C(C)=O}\) | ![Structural formula for \( N\)-acetyl-glyphosate] |
| AMPA              | \( \text{(aminomethyl)phosphonic acid} \text{NCP(=O)(O)O}\) | ![Structural formula for AMPA] |
| \( N\)-acetyl-AMPA | \( \text{[(carboxyamino)methyl]phosphonic acid} \text{O=C(O)NCP(=O)(O)O}\) | ![Structural formula for \( N\)-acetyl-AMPA] |
| \( N\)-methyl-AMPA | \( \text{[(methylamino)methyl]phosphonic acid} \text{CNCP(=O)(O)O}\) | ![Structural formula for \( N\)-methyl-AMPA] |

SMILES: simplified molecular-input line-entry system.
Appendix G – Assessment of the uses previously evaluated by EFSA but not yet legally implemented

It is noted that uses on GAT rapeseed, GAT soyabeans and GAT maize were evaluated by EFSA in the framework of previous MRL applications (EFSA, 2009, 2013). As these uses are not legally implemented, they were not considered in the framework of the present MRL review. However, in order to support risk managers in the decision-making process by providing a full overview of the available data, EFSA also reported the assessment of these uses in the present Appendix. The details on these uses are reported in Appendix G.1 (Intended Good Agricultural Practices). A summary of the assessment is presented below focusing on the data and the key calculations specific to these MRL applications (see Appendices G.2, G.3, G.4 and G.5). For what regards the core assessment (nature of residues, storage stability, methods of analysis), reference is made to the body text and to the list of endpoints, where all the available studies were already evaluated and reported.

To assess the magnitude of residues in plants resulting from the intended GAPs, EFSA considered all residue trials reported by the evaluating Member State (EMS) in the evaluation reports submitted in the framework of the previous MRL applications (Germany, 2009, 2013a). In these trials, residues were analysed for glyphosate, AMPA, N-acetyl-glyphosate and N-acetyl-AMPA. MRLs and risk assessment values were recalculated according to the residue definitions for genetically modified crops proposed in the MRL review and considering the most recent agreed methodology (OECD, 2011). Detailed results of the residue trials, derived MRLs and risk assessment values are reported in Appendix G.2. Data were sufficient to derive the MRLs which would accommodate the intended uses on GAT rapeseed, GAT soyabeans and GAT maize. The following considerations should be made:

- Rapeseed: the MRLs derived from the intended use on GAT crop (20 mg/kg) is lower than the MRL proposed in the MRL review (30 mg/kg). Therefore, the intended use on the GAT rapeseed is expected to be covered by the MRL proposed in the MRL review. This MRL was derived from the existing CXL for which no risk to consumers was identified (see Table 2 of the MRL review).
- Soyabeans: the MRL derived from the intended use on GAT crop (15 mg/kg) is higher than the MRL proposed in the MRL review (5 mg/kg).
- Maize: the MRLs derived from the intended use on GAT crop (0.6 mg/kg) is lower than the MRL proposed in the MRL review (4 mg/kg). Therefore, the intended use on the GAT maize is expected to be covered by the MRL proposed in the MRL review.

In conclusion, the MRLs proposed in the MRL review are expected to cover also the intended uses on GAT rapeseed and maize. For soyabeans, a higher MRL of 15 mg/kg is needed to accommodate the intended use on the GAT modified variety. It is reminded that, since a fully validated method for enforcement of N-acetyl-glyphosate and AMPA in plant commodities is not available, the MRLs derived for rapeseed, soyabeans and maize were considered tentative.

For information purpose, EFSA also calculated MRLs and risk assessment values for N-acetyl-glyphosate only. This additional information may be useful in case risk managers would have interest to define a separate residue definition for this compound as well as for assessing the specific intake of this compound in livestock (see below).

EFSA assessed the possible impact of intended uses on the total livestock dietary burden. First, an overall dietary burden considering existing uses and intended uses was calculated according to the residue definition for risk assessment in plant commodities. For rapeseed, soyabeans and maize, risk assessment values derived from the existing uses and from the intended uses on GAT crops were compared and the most critical values were selected. For all other feed items, the risk assessment values derived from the authorised uses were considered. Livestock dietary burden calculations were performed for different groups of livestock according to OECD guidance (OECD, 2013). The input values used in this calculation are summarised in Appendix G.3.1. This first calculation showed that the intended uses do not modify the dietary burden already assessed based on the existing uses (see comparison in Appendix G.4). This is mainly due to the overwhelming contribution of the existing uses on grass forage and wheat (straw). Furthermore, a theoretical dietary burden which would result from the intended uses only (see input values in Appendix G.3.2) was also calculated and showed extremely lower results compared to the overall dietary burden (see Appendix G.4). Based on these results, it is concluded that the intended uses on rapeseed, soyabeans and maize do not alter the overall dietary burden for what regards glyphosate and AMPA.
An additional livestock dietary burden calculation was performed to assess the intake of specific metabolites (\(N\)-acetyl compounds). According to the residue trials, \(N\)-acetyl-glyphosate is the major residue in GAT modified crops (see Appendix G.2). Therefore, the calculation was based on the risk assessment values derived for \(N\)-acetyl-glyphosate only (see input values in Appendix G.3.3). Results of this calculation indicated that the intake of \(N\)-acetyl-glyphosate in livestock exceed the trigger value (ranging between 0.02 and 0.10 mg/kg bw per day) and represented 60–70% of the total residues intake, resulting from the intended uses calculated according to the residue definition for risk assessment (see Appendix G.4). Consequently, a specific assessment on the magnitude of residues in livestock was performed with a particular focus on the metabolite \(N\)-acetyl-glyphosate.

Livestock feeding studies conducted on dairy cows and laying hens fed with \(N\)-acetyl-glyphosate were evaluated in the framework of a previous MRL application (Germany, 2009). Detailed results of these studies were reported in the corresponding EFSA Reasoned opinion (EFSA, 2009). These studies indicate that transfer of \(N\)-acetyl-glyphosate to animal tissues and products was very limited. Based on these studies and the estimated \(N\)-acetyl-glyphosate intakes by livestock, \(N\)-acetyl-glyphosate is expected to remain below the LOQ in all animal commodities. Therefore, in case risk managers wish to define a separate residue definition for \(N\)-acetyl-glyphosate only, MRLs for this compound could be set at the LOQs (see Appendix G.5). Since confirmatory method for \(N\)-acetyl-glyphosate in all matrices is missing, those MRLs would be tentative only.

EFSA assessed the possible impact of the intended uses on the consumer exposure. Based on the results of the studies on the magnitude of residues in plant and animal commodities, the MRLs proposed in the MRL review are expected to cover the intended uses on rapeseeds and maize GAT crops (see Table G.1 below). Therefore, the consumer risk assessment performed in the MRL review does not need to be reconsidered for these crops. For soyabeans, EFSA updated the most critical scenario of the consumer risk assessment (risk assessment with consideration of the CXLs, scenario 2) including the risk assessment values derived in Appendix G.2 for soyabeans (STMR = 1.98 mg/kg and HR = 8.07 mg/kg, multiplied by a conversion factor of 1.1). According to the results of this additional calculation, the highest chronic exposure was calculated for British toddlers, representing 19.1% of the ADI and the highest exposure was calculated for sugar beet (root), representing 90.7% of the ARfD.

Consequently, it can be concluded that the short-term and long-term intake of residues resulting from the intended uses on GAT soyabeans, maize and rapeseeds is unlikely to present a risk to consumer health.

| Code   | Commodity            | Existing MRL (mg/kg) | MRL proposed in MRL review (mg/kg) | MRL derived from intened uses (mg/kg) | Comment and recommendation                                                                                           |
|--------|----------------------|----------------------|------------------------------------|---------------------------------------|---------------------------------------------------------------------------------------------------------------------|
| 401060 | Rapeseeds/ canola seeds | 10                   | 30                                 | 20                                    | MRL proposed in the MRL review is sufficient to cover the intended use                                                |
| 401070 | Soyabeans            | 20                   | 5                                  | 15                                    | Compared to the MRL proposed in the MRL review, a higher MRL is needed to accommodate the intended use on the GAT modified variety. Short-term and long-term intake of residues resulting from the intended use is unlikely to present a risk to consumer health |
| 500030 | Maize/corn grains    | 1                    | 4                                  | 0.6                                   | MRL proposed in the MRL review is sufficient to cover the intended use                                                |
| –      | Commodities of animal origin | See Table 2 in MRL review | –                                  | –                                     | The residue levels in GAT modified rapeseeds, soyabeans, maize and their by-products resulting from the intended uses do not require a modification of the MRLs for animal products derived in the MRL review |
## G.1. Intended Good Agricultural practice (GAPs)

**GAPs for import tolerances (non-European indoor, outdoor or post-harvest treatments)**

| Crop | Scientific name | Region | Outdoor / indoor | Member state or country | Pest controlled | Formulation Type | Content Conc. | Unit | Method | Growth stage From BBCH | Until BBCH | PHI or waiting period (days) | Rate Min. | Rate Max. | Rate Min. | Rate Max. | Comments |
|------|-----------------|--------|------------------|-------------------------|-----------------|-----------------|-----------------|----------|--------|------------------------|-----------|-----------------------------|----------|----------|---------|---------|----------|
| Rapeseeds | *Brassica napus* subsp. *napus* | non-EU | Outdoor | CAN | Broadleaf weeds and grasses | SL | 500.0 | g/L | Foliar treatment - broadcast spraying | 11 | 89 | 1 | 3 | 0.68 | 0.90 | kg a.i./ha | 7 | desiccant use (EFSA, 2013) |
| Soyabean | *Glycine max* | non-EU | Outdoor | USA | Broadleaf weeds and grasses | SL | 500.0 | g/L | Foliar treatment - spraying | 8 | 99 | 1 | 4 | 0.82 | 3.33 | kg a.i./ha | 14 | Maximum glyphosate per season: 6.77 kg a.i./ha desiccant use (EFSA, 2009) |
| Maize | *Zea mays* | non-EU | Outdoor | USA | Broadleaf weeds and grasses | SL | 600.0 | g/L | Foliar treatment - spraying | 7 | 99 | 1 | 4 | 0.87 | 4.10 | kg a.i./ha | 7 | Maximum glyphosate per season: 6.77 kg a.i./ha desiccant use (EFSA, 2009) |

GAP: Good Agricultural Practice; BBCH: growth stages of mono- and dicotyledonous plants; PHI: preharvest interval; NEU: northern European Union; SEU: southern European Union; a.i.: active ingredient.
## G.2. Overview of the available residue trials data

| Crop                      | Region/ indoor(a) | Residue levels observed in the supervised residue trials relevant to the supported GAPs (mg/kg) | Recommendations/comments (OECD calculations) | MRL proposals (mg/kg) | HR$_{MO}$ (mg/kg)(b) | STMR$_{MO}$ (mg/kg)(c) | CF(d) |
|---------------------------|-------------------|--------------------------------------------------------------------------------------------------|-----------------------------------------------|-----------------------|-----------------------|------------------------|-------|
| Genetically modified GAT crops |                   |                                                    | Trials on rapeseeds compliant with GAP (Germany, 2013a)                                 | 20.43                  | 14.8                  | 3.1                    | 1     |
| RD-enforcement 1 = RD-enforcement 2: sum of glyphosate, AMPA and N-acetyl-glyphosate, expressed as glyphosate | | | Glyphosate ranged from 0.41 to 8.95 mg/kg |
| Values into parentheses refer to the residues of N-acetyl glyphosate only | | | N-acetyl glyphosate ranged from 0.46 to 14 mg/kg |
| | | | AMPA ranged from <0.05 to 0.082 mg/kg |
| | | | N-acetyl AMPA always below or at 0.05 mg/kg, apart from 1 sample (0.34) mg/kg |
| Rape seeds                | Import (CAN)      | Mo: 0.8; 0.86; 14.76; 1.48; 2.48; 3.71; 1.81; 2.72; 2.73; 3.10; 3.49; 4.92; 5.61; 10.38; 9.23 |
| | | RA: 0.85; 0.91; 15.1; 1.53; 2.53; 3.76; 1.86; 2.77; 2.78; 3.15; 3.54; 4.97; 5.66; 10.43; 9.28 |
| | | Trials on rapeseeds compliant with GAP (Germany, 2013a)                                 | 20.43                  | 14.8                  | 3.1                    | 1     |
| | | | Glyphosate ranged from 0.41 to 8.95 mg/kg |
| | | | N-acetyl glyphosate ranged from 0.46 to 14 mg/kg |
| | | | AMPA ranged from <0.05 to 0.082 mg/kg |
| | | | N-acetyl AMPA always below or at 0.05 mg/kg, apart from 1 sample (0.34) mg/kg |
| | | | Ranges into parentheses refer to the residues of N-acetyl glyphosate only |
| Soyabeans                 | Import (USA)      | Mo: <0.15; 0.28; 0.41; 0.48; 0.59; 0.76; 0.77; 0.93; 0.96; 1.01; 1.13; 1.16; 1.19; 1.36; 1.70; 1.80; 1.87; 1.92; 2.04; 2.07; 2.54; 2.54; 2.62; 2.92; 3.11; 3.31; 3.47; 4.42; 5.27; 5.55; 5.77; 5.94; 6.05; 6.19; 6.77; 8.07 |
| | | RA: <0.20; 0.33; 0.49; 0.64; 0.73; 0.82; 0.86; 1.04; 1.19; 1.19; 1.26; 1.30; 1.42; 1.52; 2.02; 2.04; 2.18; 2.04; 2.36; 2.21; 3.03; 3.08; 2.9; 3.01; 3.53; 3.59; 3.6; 5.52; 5.65; 5.66; 6.13; 6.82; 6.87; 6.61; 8.07; 8.64 |
| | | Trials on soyabean compliant with GAP (Germany, 2009)                                 | 11.36                  | 8.07                  | 1.98                   | 1.1    |
| | | | Glyphosate ranged from <0.05 to 1.7 mg/kg |
| | | | N-acetyl glyphosate ranged from <0.05 to 7.9 mg/kg |
| | | | AMPA ranged from <0.05 to 0.16 mg/kg |
| | | | N-acetyl AMPA ranged from <0.05 to 1.3 mg/kg |

(a) Mo: mean, RA: range

(b) HR$_{MO}$

(c) STMR$_{MO}$

(d) CF

(e) Values into parentheses refer to the residues of N-acetyl glyphosate only
### Maize, grain Import (US)

| Region/indoor(a) | Residue levels observed in the supervised residue trials relevant to the supported GAPs (mg/kg) | Recommendations/comments (OECD calculations) | MRL proposals (mg/kg) | HR_{Mo} (mg/kg)(b) | STMR_{Mo} (mg/kg)(c) | CF(d) |
|------------------|-------------------------------------------------|---------------------------------------------|----------------------|-------------------|---------------------|-------|
| Indoor           | Mo: < 0.06; < 0.06; 0.06; 0.06; 0.07; 0.07; 0.07; 0.07; 0.07; 0.07; 0.08; 0.08; 0.08; 0.08; 0.08; 0.08; 0.09; 0.09; 0.09; 0.1; 0.1; 0.1; 0.11; 0.11; 0.13; < 0.15; < 0.15; < 0.15; < 0.15; < 0.15; 0.15; 0.15; 0.16; 0.17; 0.17; 0.18; 0.2; 0.21; 0.25; 0.3; 0.34; 0.4; 0.56 | Trials on maize compliant with GAP (Germany, 2009) | 0.6(e)(h) | 0.56 | 0.09 | 1.2 |
| Indoor           | RA: < 0.08; < 0.08; 0.08; 0.08; 0.09; 0.09; 0.09; 0.09; 0.09; 0.1; 0.1; 0.1; 0.1; 0.1; 0.1; 0.1; 0.11; 0.11; 0.11; 0.11; 0.11; 0.12; 0.12; 0.12; 0.13; 0.13; 0.15; 0.17; < 0.2; < 0.2; < 0.2; 0.2; 0.21; 0.22; 0.23; 0.25; 0.23; 0.3; 0.32; 0.36; 0.43; 0.6 | Glyphosate ranged from < 0.02 to 0.08 mg/kg | | | | |
| Indoor           | Cereals straw not relevant for import tolerance GAP | | | | | |

GAP: Good Agricultural Practice; OECD: Organisation for Economic Co-operation and Development; MRL: maximum residue level.

*: Indicates that the MRL is proposed at the limit of quantification.

(a): NEU: Outdoor trials conducted in northern Europe, SEU: Outdoor trials conducted in southern Europe, Indoor: indoor EU trials or Country code: if non-EU trials.

(b): Highest residue according to the residue definition for monitoring.

(c): Supervised trials median residue according to the residue definition for monitoring.

(d): Conversion factor for risk assessment; median of the individual conversion factors at the supported PHI for each residues trial (unless otherwise specified).

(e): MRLs are tentative because confirmatory methods for analysis of N-acetyl-glyphosate and AMPA are still required.

(f): In case risk managers wish to restrict the RD to glyphosate and AMPA only, an MRL of 15 mg/kg would be sufficient to accommodate the new use on GAT rapeseeds.

(g): In case risk managers wish to restrict the RD to glyphosate and AMPA only, an MRL of 2 mg/kg would be sufficient to accommodate the new use on GAT soyabeans.

(h): In case risk managers wish to restrict the RD to glyphosate and AMPA only, an MRL of 0.2 mg/kg would be sufficient to accommodate the new use on GAT maize.
### G.3. Input values for the dietary burden calculations

#### G.3.1. Input values considering all existing uses and the intended uses on GAT crops

| Feed commodity        | Median dietary burden | Maximum dietary burden |
|-----------------------|-----------------------|------------------------|
|                       | Input value (mg/kg)   | Comment                | Input value (mg/kg)   | Comment                |
| Soyabeans, seed       | 2.18                  | STMR × CF (tentative)  | 2.18                  | STMR × CF (tentative)  |
| Rape seed, meal       | 4.65                  | STMR × CF × PF (1.5)   | 4.65                  | STMR × CF × PF (1.5)   |
| Soyabeans, meal       | 1.75                  | STMR × CF × PF (0.68)  | 1.75                  | STMR × CF × PF (0.68)  |
| Soyabeans, hulls      | 12.6                  | STMR × CF × PF (5.3)   | 12.6                  | STMR × CF × PF (5.3)   |

**Risk assessment residue definition:** sum of glyphosate, AMPA, N-acetyl-glyphosate and N-acetyl-AMPA, expressed as glyphosate

Soyabeans, seed: 2.18 STMR
Rape seed, meal: 4.65 STMR
Soyabeans, meal: 1.75 STMR
Soyabeans, hulls: 12.6 STMR

All other feed commodities: See Appendix D.1

STMR: supervised trials median residue; CF: conversion factor; PF: processing factor.

(a): STMR and CF derived from the intended uses on GAT-soyabeans and GAT-rape seed (see Appendix G.2).

(b): Processing factors for soyabeans and rapeseed processed items were assessed in Appendix B.1.2.6 (PF for genetically modified GAT crops).

### G.3.2. Input values considering only the intended uses on GAT crops

| Feed commodity        | Median dietary burden | Maximum dietary burden |
|-----------------------|-----------------------|------------------------|
|                       | Input value (mg/kg)   | Comment                | Input value (mg/kg)   | Comment                |
| Com, field (Maize), grain | 0.11                | STMR × CF (tentative)  | 0.11                  | STMR × CF (tentative)  |
| Com, pop, grain        | 0.11                  | STMR × CF (tentative)  | 0.11                  | STMR × CF (tentative)  |
| Soyabeans, seed        | 2.18                  | STMR × CF (tentative)  | 2.18                  | STMR × CF (tentative)  |
| Rape seed, meal        | 4.65                  | STMR × CF × PF (1.5)   | 4.65                  | STMR × CF × PF (1.5)   |
| Com, field, milled by-products | 0.10                | STMR × CF × PF (0.93)  | 0.10                  | STMR × CF × PF (0.93)  |
| Com, field, hominy meal | 0.68                | STMR × CF × PF (b)    | 0.68                  | STMR × CF × PF (b)    |
| Com, field, gluten feed | 0.28                | STMR × CF × PF (b)    | 0.28                  | STMR × CF × PF (b)    |
| Com, field, gluten meal | 0.11                | STMR × CF × PF (b)    | 0.11                  | STMR × CF × PF (b)    |
| Com, field, distiller’s grain (dry) | 0.37                | STMR × CF × PF (b)    | 0.37                  | STMR × CF × PF (b)    |
| Soyabeans, meal        | 1.75                  | STMR × CF × PF (0.68)  | 1.75                  | STMR × CF × PF (0.68)  |
| Soyabeans, hulls       | 12.6                  | STMR × CF × PF (5.3)   | 12.6                  | STMR × CF × PF (5.3)   |

**Risk assessment residue definition:** sum of glyphosate, AMPA, N-acetyl-glyphosate and N-acetyl-AMPA, expressed as glyphosate

Com, field (Maize), grain: 0.11 STMR
Com, pop, grain: 0.11 STMR
Soyabeans, seed: 2.18 STMR
Rape seed, meal: 4.65 STMR
Com, field, milled by-products: 0.10 STMR
Com, field, hominy meal: 0.68 STMR
Com, field, gluten feed: 0.28 STMR
Com, field, gluten meal: 0.11 STMR
Com, field, distiller’s grain (dry): 0.37 STMR
Soyabeans, meal: 1.75 STMR
Soyabeans, hulls: 12.6 STMR

STMR: supervised trials median residue; CF: conversion factor; PF: processing factor.

(a): For corn hominy meal, corn gluten feed, corn gluten meal and corn distiller’s grain, in the absence of processing factors supported by data, the default processing factors were included in the calculation to consider the potential concentration of residues in these commodities.

(b): Processing factors for soyabeans (meal and hulls), corn (milled by-products) and rapeseed (meal) were assessed in Appendix B.1.2.6 (PF for genetically modified GAT crops).
### G.3.3. Input values considering only the intended uses on GAT crops (N-acetyl-glyphosate only)

| Feed commodity                  | Median dietary burden | Maximum dietary burden |
|---------------------------------|-----------------------|------------------------|
| **Input value (mg/kg)**         | **Comment**           | **Input value (mg/kg)** | **Comment** |
| Corn, field (Maize), grain      | 0.04                  | STMR (tentative)       | 0.04        | STMR (tentative) |
| Corn, pop, grain                | 0.04                  | STMR (tentative)       | 0.04        | STMR (tentative) |
| Soyabean seed                   | 1.65                  | STMR (tentative)       | 1.65        | STMR (tentative) |
| Rape seed, meal                 | 0.69                  | STMR × PF\(^{(a)}\) (tentative) | 0.69 | STMR × PF\(^{(a)}\) (tentative) |
| Com, field, milled by-products  | 0.05                  | STMR × PF\(^{(a)}\) (tentative) | 0.05 | STMR × PF\(^{(a)}\) (tentative) |
| Com, field, hominy meal         | 0.24                  | STMR × PF\(^{(b)}\) (tentative) | 0.24 | STMR × PF\(^{(b)}\) (tentative) |
| Com, field, gluten feed         | 0.10                  | STMR × PF\(^{(b)}\) (tentative) | 0.10 | STMR × PF\(^{(b)}\) (tentative) |
| Com, field, gluten, meal        | 0.04                  | STMR × PF\(^{(b)}\) (tentative) | 0.04 | STMR × PF\(^{(b)}\) (tentative) |
| Com, field, distiller’s grain (dry) | 0.13              | STMR × PF\(^{(b)}\) (tentative) | 0.13 | STMR × PF\(^{(b)}\) (tentative) |
| Soyabean meal                   | 1.15                  | STMR × PF\(^{(a)}\) (tentative) | 1.15 | STMR × PF\(^{(a)}\) (tentative) |
| Soyabean hulls                  | 8.58                  | STMR × PF\(^{(a)}\) (tentative) | 8.58 | STMR × PF\(^{(a)}\) (tentative) |

**Risk assessment residue definition:** N-acetyl-glyphosate, expressed as glyphosate.

STMR: supervised trials median residue; HR: highest residue; PF: processing factor.

(a): Processing factors for soyabean (meal and hulls), corn (milled by-products) and rapeseed (meal) were assessed in previous MRL applications (EFSA, 2009 for corn and soyabean; EFSA, 2013 for rapeseed).

(b): For corn hominy meal, corn gluten feed, corn gluten meal and corn distiller’s grain, in the absence of processing factors supported by data, the default processing factors were included in the calculation to consider the potential concentration of residues in these commodities.
### G.4. Results of the livestock dietary burden calculations

| Relevant groups          | Max. Dietary burden expressed in mg/kg bw per day | Trigger exceeded (Y/N) |
|-------------------------|---------------------------------------------------|------------------------|
|                         | Existing uses only\(^{(a)}\) | Existing uses and intended uses\(^{(b)}\) | Most critical commodity | Intended uses only: total residues for risk assessment\(^{(c)}\) | Most critical commodity | Intended uses only: N-acetyl-glyphosate only (% compared to total residues for risk assessment)\(^{(d)}\) | Most critical commodity |
| Cattle (all diets)      | 13.1                                              | 13.1                    | Grass, forage (fresh)   | 0.0396                               | Soyabeans, hulls         | 0.0273 (69%)                              | Soyabeans, hulls       | Yes |
| Cattle (dairy only)     | 13.1                                              | 13.1                    | Grass, forage (fresh)   | 0.0300                               | Canola, meal            | 0.0192 (64%)                              | Soyabeans, seed        | Yes |
| Sheep (all diets)       | 17.7                                              | 17.7                    | Grass, forage (fresh)   | 0.1402                               | Soyabeans, hulls         | 0.0968 (69%)                              | Soyabeans, hulls       | Yes |
| Sheep (ewe only)        | 17.7                                              | 17.7                    | Grass, forage (fresh)   | 0.1016                               | Soyabeans, hulls         | 0.0697 (69%)                              | Soyabeans, hulls       | Yes |
| Swine (all diets)       | 2.83                                              | 2.85                    | Grass, forage (fresh)   | 0.0570                               | Soyabeans, hulls         | 0.0397 (70%)                              | Soyabeans, hulls       | Yes |
| Poultry (all diets)     | 2.15                                              | 2.15                    | Wheat, straw           | 0.1025                               | Canola, meal            | 0.0616 (60%)                              | Soyabeans, seed        | Yes |
| Poultry (layer only)    | 2.15                                              | 2.15                    | Wheat, straw           | 0.0736                               | Soyabeans, hulls         | 0.0516 (70%)                              | Soyabeans, hulls       | Yes |

\(^{(a)}\): Dietary burden calculation considering all authorised uses reported and assessed in the MRL review (see details in the core assessment Appendix B.2).

\(^{(b)}\): Overall dietary burden calculation considering all authorised uses reported in the MRL review and the intended uses assessed in previous MRL applications (EFSA, 2009, 2013).

\(^{(c)}\): Dietary burden calculation considering only the intended uses assessed in previous MRL applications (EFSA, 2009, 2013).

\(^{(d)}\): Dietary burden calculation considering only the intended uses assessed in previous MRL applications (EFSA, 2009, 2013), N-acetyl glyphosate only (in percentage: contribution of N-acetyl glyphosate to the dietary burden intended uses only expressed according to the residue definition for risk assessment.)
G.5. Summary of the residue data from livestock feeding studies performed with N-acetyl glyphosate

| Animal commodity | Residues at the closest feeding level (mg/kg) | Estimated value at 1N MRL proposal (mg/kg) | MRL proposal (mg/kg) |
|------------------|---------------------------------------------|---------------------------------------------|---------------------|
|                  | Mean | Highest | STMR(a) (mg/kg) | HR(b) (mg/kg)       |                     |
| Cattle (all diets) – Closest feeding level (1.25 mg/kg bw per day; 46N dietary burden)(c) | | | | | |
| Muscle           | < 0.025 | < 0.025 | < 0.025 | < 0.025 | 0.025*(d) (tentative) |
| Fat              | < 0.05  | < 0.05  | < 0.05  | < 0.05  | 0.05*(d) (tentative) |
| Liver            | < 0.05  | < 0.05  | < 0.05  | < 0.05  | 0.05*(d) (tentative) |
| Kidney           | 0.08    | 0.11    | < 0.05  | < 0.05  | 0.05*(d) (tentative) |
| Cattle (dairy only) – Closest feeding level (1.25 mg/kg bw per day; 66N dietary burden)(c) | | | | | |
| Milk(e)          | < 0.025 | n.a.    | < 0.025 | < 0.025 | 0.025*(d) (tentative) |
| Sheep (all diets)(f) – Closest feeding level (1.25 mg/kg bw; 13N dietary burden)(c) | | | | | |
| Muscle           | < 0.025 | < 0.025 | < 0.025 | < 0.025 | 0.025*(d) (tentative) |
| Fat              | < 0.05  | < 0.05  | < 0.05  | < 0.05  | 0.05*(d) (tentative) |
| Liver            | < 0.05  | < 0.05  | < 0.05  | < 0.05  | 0.05*(d) (tentative) |
| Kidney           | 0.08    | 0.11    | < 0.05  | < 0.05  | 0.05*(d) (tentative) |
| Sheep (dairy only)(f) – Closest feeding level (1.25 mg/kg bw; 18N dietary burden)(c) | | | | | |
| Milk(e)          | < 0.025 | n.a.    | < 0.025 | < 0.025 | 0.025*(d) (tentative) |
| Swine(f) – Closest feeding level (1.25 mg/kg bw per day; 31N dietary burden)(c) | | | | | |
| Muscle           | < 0.025 | < 0.025 | < 0.025 | < 0.025 | 0.025*(d) (tentative) |
| Fat              | < 0.05  | < 0.05  | < 0.05  | < 0.05  | 0.05*(d) (tentative) |
| Liver            | < 0.05  | < 0.05  | < 0.05  | < 0.05  | 0.05*(d) (tentative) |
| Kidney           | 0.08    | 0.11    | < 0.05  | < 0.05  | 0.05*(d) (tentative) |
| Poultry (all diets) – Closest feeding level (1.5 mg/kg bw per day; 25N dietary burden)(c) | | | | | |
| Muscle           | 0.03    | 0.04    | < 0.025 | < 0.025 | 0.025*(d) (tentative) |
| Fat              | 0.11    | 0.13    | < 0.05  | < 0.05  | 0.05*(d) (tentative) |
| Liver            | 0.19    | 0.21    | < 0.05  | < 0.05  | 0.05*(d) (tentative) |
| Poultry (layer only) – Closest feeding level (1.5 mg/kg bw per day; 30N dietary burden)(c) | | | | | |
| Eggs             | 0.03    | 0.05    | < 0.025 | < 0.025 | 0.025*(d) (tentative) |

n.a.: not applicable.

*: Indicates that the MRL is proposed at the limit of quantification.
(a): The mean residue level for milk and the mean residue levels for eggs and tissues were recalculated at the 1N rate for the median dietary burden.
(b): The mean residue level in milk and the highest residue levels in eggs and tissues, were recalculated at the 1N rate for the maximum dietary burden.
(c): Closest feeding level and N dose rate related to the maximum dietary burden. Study performed with N-acetyl glyphosate.
(d): MRL proposal is tentative because a confirmatory method for N-acetyl-glyphosate is still required for all animal matrices.
(e): Highest residue level from day 1 to day 28 (daily mean of 3 cows).
(f): Since extrapolation from cattle to other ruminants and swine is acceptable, results of the livestock feeding study on ruminants were relied upon to derive the MRL and risk assessment values in sheep and swine.