Modification of the existing maximum residue levels for acetamiprid in various crops

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Abstract

In accordance with Article 6 of Regulation (EC) No 396/2005, the applicants Nisso Chemical Europe GmbH and Sipcam Italia S.p.A. submitted requests to the competent national authority in the Netherlands and in Italy, respectively, to modify the existing maximum residue levels (MRLs) for the active substance acetamiprid in various crops. The data submitted in support of these requests were found to be sufficient to derive MRL proposals for plums, aubergines, peppers, cucumbers, courgettes, other cucurbits with edible peel, poppy seeds, mustard seeds, pomegranates and honey. Adequate analytical methods for enforcement are available to control the residues of acetamiprid in the commodities under consideration at the validated limit of quantification (LOQ) of 0.01 mg/kg. Based on the risk assessment results, EFSA concluded that the short-term and long-term intake of residues resulting from the use of acetamiprid according to the reported agricultural practices is unlikely to present a risk to consumer health.

Keywords: acetamiprid, various crops, honey, insecticide, MRL, consumer risk assessment

Requestor: European Commission

Question number: EFSA-Q-2021-00209; EFSA-Q-2021-00327

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Declarations of interest: The declarations of interest of all scientific experts active in EFSA’s work are available at https://ess.efsa.europa.eu/doi/doiweb/doisearch.

Acknowledgements: EFSA wishes to thank Stathis Anagnos, Laszlo Bura, Andrea Mioc, Marta Szot, Aikaterini Vlachou for the support provided to this scientific output.

Suggested citation: EFSA (European Food Safety Authority), Bellisai G, Bernasconi G, Brancato A, Carrasco Cabrera L, Ferreira L, Giner G, Greco L, Jarrah S, Kazocina A, Leuschner R, Magrans JO, Miron I, Nave S, Pedersen R, Reich H, Ruocco S, Santos M, Scarlato AP, Theobald A, Vagenende B and Verani A, 2021. Reasoned Opinion on the modification of the existing maximum residue levels for acetamiprid in various crops. EFSA Journal 2021;19(9):6830, 38 pp. https://doi.org/10.2903/j.efsa.2021.6830

ISSN: 1831-4732

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The EFSA Journal is a publication of the European Food Safety Authority, a European agency funded by the European Union.
Modification of the existing MRLs for acetamiprid in various crops

Summary

In accordance with Article 6 of Regulation (EC) No 396/2005, Nisso Chemical Europe GmbH submitted an application to the competent national authority in the Netherlands (evaluating Member State, EMS) to modify the existing maximum residue levels (MRLs) for the active substance acetamiprid in various crops. The EMS drafted an evaluation report in accordance with Article 8 of Regulation (EC) No 396/2005, which was submitted to the European Commission and forwarded to the European Food Safety Authority (EFSA) on 13 April 2021. EFSA assessed the application and the evaluation report as required by Article 10 of the MRL regulation. EFSA identified data requirements, which were requested from the EMS. On 24 June 2021, the EMS submitted a revised evaluation report (Netherlands, 2021), which replaced the previously submitted evaluation report.

Moreover, still in accordance with Article 6 of Regulation (EC) No 396/2005, Sipcam Italia S.p.A. submitted another application to the competent national authority in Italy (EMS) to modify the existing MRL for the active substance acetamiprid in pomegranates. The EMS drafted an evaluation report in accordance with Article 8 of Regulation (EC) No 396/2005, which was submitted to the European Commission and forwarded to EFSA on 27 May 2021. To accommodate for the intended use of acetamiprid, the EMS proposed to raise the existing MRL for pomegranates from the limit of quantification (LOQ) of 0.01 to 0.3 mg/kg. EFSA assessed the application and the evaluation report as required by Article 10 of the MRL regulation. EFSA requested some clarifications from the EMS on 28 June 2021. On 7 July 2021, the EMS submitted a revised evaluation report (Italy, 2021), which replaced the previously submitted evaluation report.

Based on the conclusions derived by EFSA in the framework of Regulation (EC) No 1107/2009, the data evaluated under previous MRL assessments and the additional data provided by the EMSs in the framework of these applications, the following conclusions are derived.

The metabolism of acetamiprid following foliar applications was investigated in crops belonging to the groups of fruit crops, root crops, leafy crops and pulses/oilseeds indicating acetamiprid as the main metabolite in primary crops. Studies investigating the effect of processing on the nature of acetamiprid (hydrolysis studies) demonstrated that the active substance is stable. In rotational crops, the major residue identified in metabolism studies was the metabolite IM-1-5, the presence of which was not confirmed in the rotational crop field studies. It is also expected that residues in floral nectar resulting from the use of acetamiprid in primary crops consists mainly of acetamiprid; the absence of metabolites IM-1-4 and IM-1-5 in honey was confirmed by the submitted residue trials. The nectar is processed by bees following a process of regurgitation and then the honey is stored under specific conditions in the bee hives, before harvesting. Since there is a limited information available whether the enzymatic processes occurring in the bee gut or the storage in the beehive have an impact on the nature of residues in honey, it would be desirable to further investigate these aspects.

Based on the metabolic pattern identified in metabolism studies, hydrolysis studies, the toxicological significance of metabolites and the stability of acetamiprid during storage, the residue definitions for plant products were proposed as ‘acetamiprid’ for both enforcement and risk assessment. These residue definitions are applicable to primary crops, rotational crops and processed products as well as honey. The current enforcement residue definition in Regulation (EC) No 396/2005 is also acetamiprid. EFSA concluded that for the crops assessed in these applications, the metabolism of acetamiprid in primary and in rotational crops and the possible degradation in processed products has been sufficiently addressed and that the previously derived residue definitions are applicable and could be considered valid also for honey.

Sufficiently validated analytical methods based on high-performance liquid chromatography with tandem mass spectroscopy (HPLC-MS/MS) are available to quantify residues of acetamiprid at or above 0.01 mg/kg (LOQ) in the crops assessed in these applications as well as in honey according to the enforcement residue definition.

The available residue trials are sufficient to derive MRL proposals for all crops under consideration. Since some of the crops under consideration are melliferous crops, the applicant investigated the potential carry-over of residues from treated primary crops into honey. A sufficient number of semi-field (tunnel) trials were provided. In these trials, bee hives were placed in tunnels where Phacelia tanacetifolia was treated with acetamiprid during flowering. The study design of the trials was considered appropriate to use the results for deriving an MRL proposal of 0.3 mg/kg in honey. In addition, EFSA assessed the monitoring data from official EU National control programmes conducted by several Member States during 2012–2018, to check the plausibility of the residues found in the
supervised residue trials. The data indicated that in the vast majority of honey samples of acetamiprid residues were below the LOQ of 0.05 mg/kg (0.26% exceedance of all analysed samples in 2018).

Specific studies investigating the magnitude of acetamiprid residues in processed commodities were assessed in the framework of the MRL review and the EU pesticides peer review. No new data were submitted in the framework of the current applications. Nevertheless, further processing studies for the commodities under assessment are not required as they are not expected to affect the outcome of the risk assessment.

The occurrence of acetamiprid residues in rotational crops was investigated in the framework of the EU pesticides peer review. Based on the available information on the nature and magnitude of residues, it was concluded that significant residue levels are unlikely to occur in rotational crops, provided that the active substance on primary crop is used according to the proposed Good Agricultural Practice (GAP).

Residues of acetamiprid in commodities of animal origin were not assessed since the crops under consideration are normally not fed to livestock. An exception is the use on mustard seeds, since mustard seed meal can be used as fish feed item. However, since acetamiprid is not fat soluble and the calculated potential exposure did not exceed the trigger values, further data on the nature and magnitude of residues in fish are not required.

The toxicological profile of acetamiprid was assessed in the framework of the EU pesticides peer review under Regulation (EC) No 1107/2009 and the data were sufficient to derive an acceptable daily intake (ADI) value of 0.025 mg/kg body weight (bw) per day and an acute reference dose (ARfD) of 0.025 mg/kg bw.

The consumer risk assessment was performed with revision 3.1 of the EFSA Pesticide Residues Intake Model (PRIMO). The short-term exposure assessment was performed only for the commodities assessed in the present MRL applications and the short-term exposure did not exceed the ARfD for any of the crops assessed. In the framework of the focused MRLs review according to Art. 43 of Regulation (EC) No 396/2005, a comprehensive long-term exposure assessment was performed, taking into account the existing uses at EU level and the acceptable Codex maximum residue limits (CXLs). EFSA updated this calculation with the relevant supervised trials median residue values (STMRs) derived from the residue trials submitted on the crops under consideration. The crops on which no uses were reported in the MRL review were excluded from the exposure calculation. The estimated long-term dietary intake accounted for 16% of the ADI (NL toddler diet).

EFSA concluded that the proposed use of acetamiprid on various crops as well as the potential transfer of residues into honey will not result in a consumer exposure exceeding the toxicological reference values and therefore is unlikely to pose a risk to consumers’ health.

It must be noted that the investigation of possible risk to honeybees related to the use of acetamiprid is outside the scope of this reasoned opinion. The evaluation of the risk to honeybees was evaluated in the framework of the peer review of acetamiprid at EU level. Additionally, national competent authorities at Member State level should pay attention to the bee health and bee protection when granting authorisations for plant protection products according to the provisions laid out in the Regulation (EU) 2018/113.

The EFSA Panel on Plant Protection Products and their Residues (PPR) is also currently assessing new available information on acetamiprid and considering any other information available from the recent evaluations by EFSA and the European Chemicals Agency (ECHA), to check whether there are indications of a serious risk to human or animal health or the environment from the use of acetamiprid. Therefore, the conclusions reported in this reasoned opinion might need to be reconsidered in the light of the outcome of this evaluation.

EFSA proposes to amend the existing MRLs as reported in the summary table below.

Full details of all end points and the consumer risk assessment can be found in Appendices B–D.

| Code(a) | Commodity | Existing EU MRL (mg/kg) | Proposed EU MRL (mg/kg) | Comment/justification |
|--------|-----------|------------------------|-------------------------|-----------------------|
| 0140040 | Plums     | 0.03                   | 0.04                    | The submitted data are sufficient to derive an MRL proposal for the intended NEU/SEU use. Risk for consumers unlikely. |

Enforcement residue definition: Acetamiprid
| Code<sup>(a)</sup> | Commodity                  | Existing EU MRL (mg/kg) | Proposed EU MRL (mg/kg) | Comment/justification                                                                                                                                 |
|-----------------|-----------------------------|-------------------------|-------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|
| 0231030         | Aubergines                  | 0.2                     | 0.4                     | Data on tomatoes extrapolated to aubergines. The MRL proposal reflects the more critical residue situation of the intended indoor use. Risk for consumers unlikely. |
| 0231020         | Sweet peppers/bell peppers | 0.3                     | 0.4                     | The submitted data are sufficient to derive an MRL proposal for the intended indoor use. Risk for consumers unlikely.                                   |
| 0232010         | Cucumbers                   | 0.3                     | 0.4                     | The MRL proposal reflects the most critical residue situation of the intended indoor use. Risk for consumers unlikely.                                |
| 0232030         | Courgettes                  | 0.3                     | 0.4                     | A separate MRL is currently set on gherkins at 0.6 mg/kg, which is not exceeded by the submitted residue data set.                                |
| 0232090         | Other cucurbits with edible peel | 0.3                     | 0.4                     |                                                                                                                                                   |
| 0401030         | Poppy seeds                 | 0.01*                   | 0.3                     | Data on oilseed rape extrapolated to poppy seeds. The submitted data are sufficient to derive an MRL proposal for the intended NEU use. Risk for consumers unlikely. |
| 0401080         | Mustard seeds               | 0.01*                   | 0.15                    | Data on oilseed rape extrapolated to mustard seeds. The submitted data are sufficient to derive an MRL proposal for the intended NEU use. Risk for consumers unlikely. |
| 163050          | Granate apples/pomegranates | 0.01*                   | 0.3                     | The submitted data are sufficient to derive an MRL proposal for the intended SEU use. Risk for consumers unlikely.                                   |
| 1040000         | Honey and other apiculture products | 0.05*                   | 0.3                     | The MRL proposal reflects residues in honey from the critical authorised use and intended EU uses of acetamiprid on melliferous crops. MRL in honey is derived from semi-field/tunnel trials performed on Phacelia tanacetifolia. Risk for consumers unlikely. |

MRL: maximum residue level; NEU: northern Europe; SEU: southern Europe; GAP: Good Agricultural Practice.

*: Indicates that the MRL is set at the limit of analytical quantification (LOQ).

<sup>(a)</sup>: Commodity code number according to Annex I of Regulation (EC) No 396/2005.

<sup>(F)</sup>: Fat soluble.
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Assessment

The European Food Safety Authority (EFSA) received two applications to modify the existing maximum residue levels (MRLs) for acetamiprid in various crops and in honey. The detailed description of the intended uses of acetamiprid, which are the basis for the current MRL applications, is reported in Appendix A.

Acetamiprid is the ISO common name for \((E)-N\text{-1-}[\{(6\text{-chloro-3-pyridyl)}\text{-methyl}\}\text{-N2-cyano-N1-methylacetamidine (IUPAC). The chemical structures of the active substance and its main metabolites are reported in Appendix E.}

Acetamiprid is an insecticide, which was evaluated for renewal of the approval in the framework of Regulation (EC) No 1107/2009\(^1\) with the Netherlands designated as rapporteur Member State (RMS) for the representative uses as foliar treatments on pome fruits, tomatoes and potatoes. The renewal assessment report (RAR) prepared by the RMS has been peer reviewed by EFSA (EFSA, 2016). The decision on the renewal of acetamiprid entered into force on 1 March 2018.\(^2\)

The EU MRLs for acetamiprid are established in Annex II of Regulation (EC) No 396/2005.\(^3\) The review of existing MRLs according to Article 12 of Regulation (EC) No 396/2005 (MRL review) has been performed (EFSA, 2011) and the proposed modifications have been implemented in the MRL legislation. After completion of the MRL review, EFSA has issued several reasoned opinions on the modification of MRLs for acetamiprid. In addition, certain Codex maximum residue limits (CXLs) have been taken over in the EU MRL legislation.\(^4\) Moreover, a focused MRL review according to Art. 43 of Regulation (EC) No 396/2005 and based on the new toxicological reference values agreed as part of the renewal of approval has been performed (EFSA, 2018b) and the proposed modifications have been implemented in the MRL legislation.

In accordance with Article 6 of Regulation (EC) No 396/2005, Nisso Chemical Europe GmbH submitted an application to the competent national authority in the Netherlands (evaluating Member State, EMS-Netherlands) to modify the existing maximum residue levels (MRLs) for the active substance acetamiprid in various crops. The EMS drafted an evaluation report in accordance with Article 8 of Regulation (EC) No 396/2005, which was submitted to the European Commission and forwarded to the European Food Safety Authority (EFSA) on 13 April 2021. EFSA assessed the application and the evaluation report as required by Article 10 of the MRL regulation. EFSA identified data requirements, which were requested from the EMS. On 24 June 2021, the EMS submitted a revised evaluation report (Netherlands, 2021), which replaced the previously submitted evaluation report.

Moreover, still in accordance Article 6 of Regulation (EC) No 396/2005, Sipcam Italia S.p.A. submitted an application to the competent national authority in Italy (EMS-Italy) to modify the existing MRL for the active substance acetamiprid in pomegranates. The EMS drafted an evaluation report in accordance with Article 8 of Regulation (EC) No 396/2005, which was submitted to the European Commission and forwarded to EFSA on 27 May 2021. To accommodate for the intended use of acetamiprid, the EMS proposed to raise the existing MRL for pomegranates from LOQ of 0.01 mg/kg to 0.3 mg/kg. EFSA assessed the application and the evaluation report as required by Article 10 of the MRL regulation. EFSA requested some clarifications from the EMS on 28 June 2021. On 7 July 2021, the EMS submitted a revised evaluation report (Italy, 2021), which replaced the previously submitted evaluation report.

EFSA based its assessment on the evaluation reports submitted by the EMSs (Netherlands, 2021; Italy, 2021), the renewal assessment report (RAR) and its addenda (Netherlands, 2015, 2016) prepared under Regulation (EC) 1107/2009, the Commission review report on acetamiprid (European Commission, 2018a), the conclusion on the peer review of the pesticide risk assessment of the active substance acetamiprid (EFSA, 2016), as well as the conclusions from previous EFSA opinions on

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1 Regulation (EC) No 1107/2009 of the European Parliament and of the Council of 21 October 2009 concerning the placing of plant protection products on the market and repealing Council Directives 79/117/EEC and 91/414/EEC. OJ L 309, 24.11.2009, p. 1-56.
2 Commission Implementing Regulation (EU) 2018/113 of 24 January 2018 renewing the approval of the active substance acetamiprid in accordance with Regulation (EC) No 1107/2009 of the European Parliament and of the Council concerning the placing of plant protection products on the market, and amending the Annex to Commission Implementing Regulation (EU) No 540/2011. OJ L 20, 25.1.2018, p. 7-10.
3 Regulation (EC) No 396/2005 of the Parliament and of the Council of 23 February 2005 on maximum residue levels of pesticides in or on food and feed of plant and animal origin and amending Council Directive 91/414/EEC. OJ L 70, 16.3.2005, p. 1-16.
4 For an overview of all MRL Regulations on this active substance, please consult: https://ec.europa.eu/food/plant/pesticides/eu-pesticides-database/active-substances/?event=search

acetamiprid, including the reasoned opinion on the MRL review according to Article 12 of Regulation No 396/2005 (EFSA, 2011) and the focused MRL review according to Art. 43 of Regulation (EC) 396/2005 (EFSA, 2018b).

For these applications, the data requirements established in Regulation (EU) No 283/20135 and the guidance documents applicable at the date of submissions of the applications to the EMSs are applicable (European Commission, 2000, 2010a,b, 2017; OECD, 2011, 2013). The assessment is performed in accordance with the legal provisions of the Uniform Principles for the Evaluation and the Authorisation of Plant Protection Products adopted by Commission Regulation (EU) No 546/20116.

A selected list of end points of relevant studies assessed previously is presented in Appendix B.

The evaluation reports submitted by the EMSs (Netherlands, 2021, Italy, 2021) and the exposure calculations using the EFSA Pesticide Residues Intake Model (PRIMo) are considered as supporting documents to this reasoned opinion and, thus, are made publicly available as background documents to this reasoned opinion.

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 acetamiprid in primary crops belonging to the groups of fruit crops, root crops, leafy crops and pulses/oilseeds has been investigated in the framework of the MRL review (EFSA, 2011) and the EU pesticides peer review (EFSA, 2016).

In the crops tested, acetamiprid was identified as the major component of the total radioactive residues (TRR) accounting for ca. 30–90% TRR 14–90 days after the last application, except in head cabbages where the 6-chloronicotinic acid metabolite (IC-0) was the sole component identified, representing 46% TRR (0.023 mg eq/kg) and in cotton seeds (24% TRR at harvest, 0.27 mg/kg). IC-0 was also detected in carrot roots (26%TRR, 0.02 mg/kg). Other identified metabolites were observed at low levels, accounting mostly for less than 5% TRR, except metabolites IM-1-4 in immature carrot leaves (43% TRR). As acetamiprid was identified as the major component of the residues in almost all plant matrices and since the toxicity of the IC-0 metabolite is covered by the toxicity of the parent acetamiprid, no further metabolism data are required. Therefore, for the intended uses, the metabolic behaviour in primary crops is sufficiently addressed.

Regarding honey, honey is a product originated from sugary secretions of plants (floral nectar mainly). Based on the similar results of metabolism studies in four different primary crop groups, EFSA expects that residues in floral nectar resulting from the use of acetamiprid in primary crops would also consist mainly of acetamiprid. The nectar is processed by bees following a process of regurgitation and then the honey is stored under specific conditions in the beehives before harvesting. Further information, whether enzymatic processes occurring in the bee gut involved in the production of honey or the storage in the beehive have an impact on the nature of residues is not available, but in principle would be desirable.

1.1.2. Nature of residues in rotational crops

Acetamiprid is proposed to be used on several crops that can be grown in rotation with other crops and therefore, residues in rotational crops need to be investigated.

The nature of residues in rotational crops (confined studies) has been evaluated during the peer review (EFSA, 2016). Since acetamiprid has a low persistence in soil (highest field DT₉₀ 43 days and 20°C lab DT₉₀ 54 days), the metabolism study in rotational crops was not conducted with acetamiprid but using the more persistent soil metabolite IM-1-5 (DT₅₀ ranging from 319 to 663 days). In the different rotational crops investigated (wheat, turnip, spinach), the metabolite IM-1-5 was the main component of the radioactive residues accounting in mature plant at harvest for 77–94% TRR.

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5 Commission Regulation (EU) No 283/2013 of 1 March 2013 setting out the data requirements for active substances, in accordance with Regulation (EC) No 1107/2009 of the European Parliament and of the Council concerning the placing of plant protection products on the market. OJ L 93, 3.4.2013, p. 1-84.

6 Commission Regulation (EU) No 546/2011 of 10 June 2011 implementing Regulation (EC) No 1107/2009 of the European Parliament and of the Council as regards uniform principles for evaluation and authorisation of plant protection products. OJ L 155, 11.6.2011, p. 127–175.
The field rotational crop studies conducted in northern and southern EU with acetamiprid applied onto the bare soil at ca. 300 g/ha (1.5N overdosed with respect to the critical use under consideration), demonstrated that acetamiprid and metabolite IM-1-5 are not expected to be present in rotational crops (EFSA, 2016). Considering that the conditions of application of the representative uses assessed during the renewal cover the new intended uses, this conclusion is still considered relevant in the framework of the present assessment; therefore, no further information is required.

1.1.3. Nature of residues in processed commodities

The effect of processing on the nature of acetamiprid was investigated in the framework of the MRL review (EFSA, 2011) and the EU pesticides peer review (EFSA, 2016). These studies showed that acetamiprid is hydrolytically stable under standard processing conditions representative of pasteurisation, baking/brewing/boiling and sterilisation.

The process of converting nectar to honey does not involve hydrolytic conditions at elevated temperature; however, honey may be used as an ingredient in processed products that are heat treated. Considering the available studies addressing the nature of residues in processed commodities, it is unlikely that in processed honey products, residues of acetamiprid are degraded to other compounds.

1.1.4. Methods of analysis in plants/honey

Analytical methods for the determination of acetamiprid residues in plants were assessed during the MRL review (EFSA, 2011). These analytical methods based on gas chromatography with electron capture detector (GC-ECD) and HPLC-MS/MS are sufficiently validated to enforce acetamiprid residues in high water, high acid, high oil content commodities and in dry commodities, at a validated LOQ of 0.01 mg/kg. Additionally, in the framework of the EU pesticides peer review (EFSA, 2016) and the focused MRL review according to Art. 43 (EFSA, 2018b), it was concluded that acetamiprid residues can be monitored in food and feed of plant origin with the multi-residue method QuEChERS by HPLC-MS/MS with an LOQ of 0.01 mg/kg in all plant commodity groups as well as in honey.

Moreover, a new analytical method (RD-11285) for the determination of acetamiprid and its metabolites IM-1-4 and IM-1-5 in honey is provided in the evaluation report submitted by the Netherlands in support of one of the applications under the current assessment (Netherlands, 2021). This new analytical method based on HPLC-MS/MS was fully validated in terms of specificity, linearity, accuracy and repeatability according to SANCO/3029/99 rev. 4 (European Commission, 2000) and SANCO/825/00 rev. 8.1 (European Commission, 2010b) for the determination of acetamiprid and its metabolites IM-1-4 and IM-1-5 in honey individually with an LOQ of 0.05 mg/kg.

Therefore, EFSA concludes that sufficiently validated analytical methods are available to monitor residues of acetamiprid in the plant commodities under consideration as well as in honey at or above the LOQ of 0.01 mg/kg. EFSA further notes that the extraction efficiency for the analytical methods applied for enforcement and used for the residue trials is not sufficiently proven for all commodities groups according to the requirements of the extraction efficiency Guidance, SANTE 2017/10632 (European Commission, 2017). Further investigation on this matter would in principle be required.

1.1.5. Storage stability of residues in plants/honey

The storage stability of acetamiprid residues in plants stored under frozen conditions was investigated in the framework of the MRL review (EFSA, 2011) and the EU pesticides peer review (EFSA, 2016). Acetamiprid residues are stable in plant matrices stored at ≤ –18°C for up to 12–15 months in high water content matrices, for 8 months in high starch content matrices and for up to 12 months in high acid- and high oil content matrices. All plant commodities assessed in the present applications are of either high water, high oil or high acid content and all residue trials were performed in accordance with conditions ensuring the stability of acetamiprid residues.

Additionally, a new study assessing the stability of acetamiprid residues in honey was submitted with one of the current applications (Netherlands, 2021). Acetamiprid and the two metabolites IM-1-4 and IM-1-5 in honey were shown to be stable for at least 4 months when stored at ≤ –18°C. The semi-field/tunnel trials to determine the acetamiprid residues in honey have been performed in accordance with these storage conditions.
1.1.6. Proposed residue definitions

Based on the metabolic pattern identified in metabolism studies, the results of hydrolysis studies, the toxicological significance of metabolites and the capabilities of enforcement analytical methods, the following residue definitions were proposed:

- residue definition for risk assessment: acetamiprid.
- residue definition for enforcement: acetamiprid.

The same residue definitions are applicable to rotational crops and processed products.

The residue definition for enforcement set in Regulation (EC) No 396/2005 is identical with the above-mentioned residue definition.

EFSA notes that similar to other food products, residue definitions need to be derived for honey which should cover the toxicologically relevant compounds occurring in honey following the use of acetamiprid on crops foraged by bees. Honey is produced by bees following sugary secretions of plants (mainly nectar) through regurgitation, enzymatic conversion and water evaporation followed by storage of honey in beehives. As indicated in the Technical Guidelines for determining the magnitude of pesticide residues in honey and setting MRL in honey (European Commission, 2018b), in the absence of specific metabolism studies with honey bees, the residue definition for risk assessment needs to be derived taking into account other sources of information such as studies on the nature of residues in primary and rotational crops and degradation during pasteurisation. As the same residue definition (acetamiprid) applies both in primary and rotational crops, and acetamiprid is stable under pasteurisation condition, EFSA agrees with the EMS that the above plant residue definitions could be considered valid also for honey and other apicultural products. Moreover, in residue trials to investigate the transfer of residues in honey, samples were analysed for acetamiprid and the two metabolites I-M-1-4 and I-M-1-5 and no residues for these two metabolites were detected confirming the applicability of the plant residue definition also for honey.

1.2. Magnitude of residues in plants/honey

1.2.1. Magnitude of residues in primary crops/honey

In support of the MRL applications, the applicants submitted residue trials performed in various crops. Moreover, in order to determine acetamiprid residues in honey, semi-field/tunnel residue trials with Phacelia tanacetifolia as a surrogate crop were submitted. The residue trial samples were analysed for the parent compound as included in the residue definitions for enforcement and risk assessment.

According to the assessment of the EMSs, the methods used were sufficiently validated and fit for purpose (Netherlands, 2021, Italy, 2021). The samples of these residue trials were stored under conditions for which integrity of the samples has been demonstrated.

Plums

NEU/SEU outdoor cGAP: 1 \times 75 \text{ g a.s./ha}, \text{BBCH 71–89, PHI 14 days}

The applicant provided eight NEU residue trials and eight SEU residue trials to determine the residues of acetamiprid in plums after the application of acetamiprid according to the intended GAPs as reported in Appendix A. Half of these residue trials were conducted as decline studies, indicating that residues decline between 7 and 14 days after the treatment. All residue trials are considered independent as they were performed in different geographical locations. The number of trials is also sufficient for plums which is a major crop in both the NEU and SEU.

The applicant proposed to derive an MRL in plums from the merged NEU and SEU data sets. EFSA agreed with the proposal to merge the NEU and SEU data sets since (i) these two data sets are based on the same GAPs, (ii) the data sets belong to the same statistical population (U-test) and (iii) the MRL proposal derived from the individual data sets fall into the same MRL class. Therefore, an MRL of 0.04 mg/kg is derived for acetamiprid in plums.

Aubergines

Indoor cGAP: 2 \times 100 \text{ g a.s./ha}, \text{interval = 14 days, BBCH 51–89, PHI 3 days}

The applicant provided eight indoor residue trials to determine the residues of acetamiprid in tomatoes after application of acetamiprid according to the intended GAP as reported in Appendix A; and proposed to extrapolate these data to aubergines. Half of these residue trials were conducted as
decline studies, indicating limited decline of residues within 7 days after the treatment. All residue trials are considered independent as they were performed in different geographical locations. The number of trials is also sufficient for aubergine which is a minor crop in both NEU and SEU.

In line with the applicable EU guidance document on setting MRLs, comparability of residue trials and extrapolation (European Commission, 2020), EFSA agrees that the extrapolation from tomatoes to aubergines is acceptable. Therefore, an MRL of 0.4 mg/kg is derived for acetamiprid in aubergines.

**Peppers**

**Indoor cGAP: 2 × 50 g a.s./ha, interval = 14 days, BBCH 40–89, PHI 3 days**

The applicant provided 14 indoor residue trials to determine the residues of acetamiprid in peppers. All these trials have been overdosed compared to the intended GAP as reported in Appendix A (with an application rate in trials of 2 × 100 g a.s./ha vs. an application rate of 2 × 50 g a.s./ha in the intended GAP).

The EMS excluded four residue trials since in addition to the overdosed application rate also the interval between the two applications differs from the intended GAP (21- to 30-day interval in the trials vs. 14-day interval in the intended GAP). Moreover, the EMS also considered two of the remaining ten trials not independent since they were performed at the same geographical location and time with the same pepper variety. Hence, only the trial with the highest residue level from these two was considered for the MRL derivation.

EFSA agrees with the EMS assessment. Firstly, regarding the overdosed trials, EFSA notes that according to the use of the proportionality approach (EFSA, 2018c), a deviation of the application rate from the ± 25% boundaries is only acceptable if no other parameter deviates from the GAP. It is therefore correct to exclude the four overdosed trials performed with a deviation on the application interval. Secondly, regarding the independence of residue trials, EFSA notes that according to the EU guidance document on setting MRLs, comparability of residue trials and extrapolation (European Commission, 2020) residue field trials – including indoor trials – need to be performed at different geographical sites/facilities to reflect the variability in production system, soil conditions and/or weather conditions. Hence, EFSA agrees with the selection of the highest residue level from these two non-independent trials.

Therefore, nine independent and overdosed residue trials were considered to derive an MRL for peppers after scaling down the residue levels according to the proportionality approach. Five of these residue trials were conducted as decline studies, indicating decline of residues between 7 and 14 days after the treatment. All these selected residue trials are considered independent as they were performed in different geographical locations. The number of trials is also sufficient for pepper which is a major crop in both NEU and SEU. Therefore, an MRL of 0.4 mg/kg is derived for acetamiprid in peppers.

**Cucumbers, courgettes and other cucurbits with edible peel (except gherkins)**

**Indoor cGAP: 2 × 100 g a.s./ha, interval = 14 days, BBCH 40–89, PHI 3 days**

The applicant provided eight indoor residue trials (five in cucumbers and three in courgettes) to determine the residues of acetamiprid in cucumbers and courgettes after application of acetamiprid according to the intended GAP as reported in Appendix A and proposed to extrapolate combined residue data to cucumbers, courgettes and other cucurbits with edible peel. Half of these residue trials were conducted as decline studies, indicating limited decline of residues within 7 days after the treatment. All residue trials are considered independent as they were performed in different geographical locations. The number of trials is also sufficient to support the intended uses on cucumbers, courgettes and other cucurbits with edible peel (except gherkins).

The extrapolation as proposed above by the applicant is supported according to the EU guidance document on setting MRLs, comparability of residue trials and extrapolation (European Commission, 2020). An MRL of 0.4 mg/kg is derived for acetamiprid in cucumbers, courgettes and other cucurbits with edible peel, except for gherkins where a separate EU MRL at 0.6 mg/kg is currently set and is not exceeded by this data set.

**Poppy seeds**

**NEU outdoor cGAP: 2 × 30 g a.s./ha, interval = 14 days, BBCH 50–59 and 60–80, PHI n.a.**

The applicant provided eight residue trials in NEU on oilseed rape and proposed to extrapolate these data to poppy seeds. All these trials have been overdosed compared to the intended GAP as...
reported in Appendix A (with an application rate in trials of 2 × 50 g a.s./ha vs. an application rate of 2 × 30 g a.s./ha in the intended GAP).

The EMS excluded three of these eight trials since in addition to the overdosed application rate at least another parameter in the use pattern differs of more than ± 25% from the intended GAP (either the application rate or the PHI). EFSA agrees with the EMS assessment since according to the use of the proportionality approach (EFSA, 2018c) a deviation of the application rate from the ± 25% boundaries is only acceptable if no other parameter deviates from the GAP. It is therefore correct to exclude the three overdosed trials performed with also a deviation on either the application interval or the PHI.

Therefore, five overdosed residue trials were considered overall to derive an MRL for poppy seeds after scaling down the residue levels according to the proportionality approach. Three of these residue trials were conducted as decline studies, indicating decline of residues between 7 and 28 days after the treatment. All these five residue trials selected are considered independent as they were performed in different geographical locations. The number of trials is also sufficient to support the intended use on poppy seeds which is a minor crop in NEU and to derive an MRL of 0.3 mg/kg.

Mustard seeds

**NEU outdoor cGAP: 1 × 40 g a.s./ha, BBCH 50–80, PHI 28 days**

The applicant provided eight residue trials in NEU on oilseed rape and proposed to extrapolate these data to mustard seeds. All submitted trials have been slightly overdosed compared to the intended GAP as reported in Appendix A (with an application rate in trials of 1 × 50 g a.s./ha vs. an application rate of 1 × 40 g a.s./ha in the intended GAP) while all other parameters are GAP compliant.

All these overdosed residue trials were considered to derive an MRL for mustard seeds after scaling down the residue levels according to the proportionality approach. Four of these residue trials were conducted as decline studies, indicating decline of residues between 7 and 28 days after the treatment. All these eight residue trials are considered independent as they were performed in different geographical locations. The number of trials is sufficient as mustard seeds is a minor crop in the NEU. Therefore, an MRL of 0.15 mg/kg is derived for acetamiprid in mustard seeds.

Pomegranates

**SEU outdoor cGAP: 1 × 75 g a.s./ha, BBCH 51–85, PHI 14 days**

The applicant provided four residue trials performed in Southern Italy in 2017 and 2018 to determine the residues of acetamiprid in pomegranates after application of the active substance according to the intended GAP as reported in Appendix A. Three of the residue trials were conducted as decline studies, indicating limited decline of residues between 14 and 28 or 35 days after the treatment.

EFSA notes that the two residue trials performed in 2018 in Southern Italy (R33AG18-01 and R33AG18-02) were performed in close geographical locations. However, considering that the residue trials were performed on different pomegranate varieties, with different treatment dates (15 days apart) and with different years of planting (2012 and 2017), in this specific case, EFSA considers the deviation of using close geographical locations acceptable for a minor crop such as pomegranate. Therefore, as an MRL of 0.3 mg/kg is derived for acetamiprid in pomegranates.

Honey

**Surrogate crop: Phacelia tanacetifolia, 2 × 100 g a.s./ha, interval = 10–13 days, BBCH 61 and 63–67, PHI 4–24 days**

Since current MRL applications concern uses on melliferous crops and the application of acetamiprid occurs before and during the flowering stage, residues in bee products need to be addressed in line with the requirements of the Technical Guideline SANTE/11956/2016 (European Commission, 2018b, hereafter refer to as ‘honey guidelines’).

In order to investigate the extent to which the transfer of residues occurs in bee products, the applicant provided four residue trials (two conducted in NEU and two in SEU) on Phacelia tanacetifolia treated at the application rate of 2 × 100 g/ha. The applicant calculated the critical application rate of 2 × 100 g a.s./ha on Phacelia tanacetifolia at and during the flowering stage to determine the transfer of residues in honey, in line with the most critical authorised and intended GAPs for melliferous crops.
Acetamiprid was applied under semi-field conditions (tunnel trials). The nature of the residues in honey is determined by the major constituent of the residues detected in primary crops, rotational crops and processed crops, that is the parent acetamiprid in line with the enforcement and risk assessment residue definitions.

EFSA agrees with the approach proposed by the applicant and supported by the EMS both in relation to the use of Phacelia tanacetifolia as a surrogate crop as well as on the most critical GAP identified.

EFSA further assessed the four provided semi-field/tunnel trials in line with the requirements of the honey guidelines. As described above, the test substance was applied in a realistic worst-case scenario with respect to residues in honey. All tunnel trials were conducted with two foliar applications performed either immediately before or during flowering of Phacelia tanacetifolia, at an application rate of 100 g a.s./ha, with an interval of 10–13 days between the treatments. The four submitted trials were also performed with a correct design for these semi-field/tunnel trials. On each trial site one tunnel confining the bees was established for both the control and the treated plot. Tunnels were of the required size and access to water was provided. The minimum number of four trials is also met with trials conducted in the same growing season but in different geographical locations. Honeybee colonies were brought to the test sites one day before the first application and remained in the tunnels until the end of sampling. Collection of honey samples was rightly performed when honey reached maturity at the end of flowering (i.e. water content below 20%). The honey guidelines recommend sampling of at least 100 g honey for each sample. EFSA noted that the samples collected ranged from 32 to 176 g in the different trials but considered this only as a minor deviation, not affecting the validity of the trials. The colony assessment was performed before set-up of the beehives and after sampling of the honey. Finally, the samples were then analysed for residues of acetamiprid and metabolites I-M-1-4 and I-M-1-5 with a validated analytical method to generate data in honey (method RD-11285) which is suitable for both enforcement and risk assessment with an LOQ of 0.05 mg/kg (Netherlands, 2021). Residues of acetamiprid ranged from < 0.05 mg/kg (LOQ) to 0.162 mg/kg while metabolites I-M-1-4 and I-M-1-5 were not detected above the LOQ in any sample confirming the applicability of the plant residue definition also for honey. The maximum storage period of honey samples prior to analysis was 83 days, which is well below the demonstrated storage stability period of 4 months. The control samples of honey did not contain residues of acetamiprid.

The submitted residue data indicates that in order to account for the transfer of residues from a melliferous crop into honey, an MRL of 0.3 mg/kg would be required. EFSA notes that, as indicated in the honey guidelines, consumption of pollen (including pollen present in honey), royal jelly, propolis, bee wax and honeycomb is negligible. Therefore, there is no need to generate experimental residue data for these commodities.

Magnitude of residues from EU national monitoring program

In the framework of Article 32 of Regulation (EC) No 396/2005 (official national control programmes), monitoring data were submitted to EFSA. The vast majority of the honey samples analysed resulted in acetamiprid residue levels below the LOQ of 0.05 mg/kg with the highest fraction of samples with MRL exceedance accounting for 0.26% of all analysed samples in 2018. The data demonstrated that the MRL proposal for honey derived from the valid semi-field/tunnel residue trials presented in this application is higher than the residue found in market samples of honey.

1.2.2. Magnitude of residues in rotational crops

The possible transfer of acetamiprid residues to crops that are grown in crop rotation has been assessed in the EU pesticides peer review (EFSA, 2016). The available studies demonstrated that significant residues (above 0.01 mg/kg) are not expected in succeeding crops (turnip, spinaches and wheat) planted in soil treated at 300 g a.s./ha.

Since the maximum annual application rate for the crops under consideration (i.e. 200 g a.s./ha) is lower than the application rate tested in the rotational crop study, it is concluded that no residues are expected in rotational crops, provided that the active substance on primary crop is applied according to the proposed GAPs.

1.2.3. Magnitude of residues in processed commodities

Processing studies with several crops have been assessed in the EU pesticides peer review (EFSA, 2016). Amongst these studies, processing studies in apples (juicing) and gherkins (cooking and pickling/canning) demonstrated a reduction of the acetamiprid residues in these processed products.
Additional and more specific processing studies for the crops under assessment are not available and not needed since it is expected that processing of these commodities by juicing, cooking and pickling/canning will also lead to a reduction of the acetamiprid residues in line with the studies already available and assessed in the EU pesticides peer review.

1.2.4. Proposed MRLs

The available data are considered sufficient to derive MRL proposals as well as risk assessment values for all crops under evaluation as well as for residues in honey (see Appendix B.3). In Section 3 EFSA assessed whether residues on these commodities resulting from the intended uses of acetamiprid are likely to pose a consumer health risk.

2. Residues in livestock

None of the crops under consideration is used as a feed item for livestock, therefore residues in livestock in principle would not need to be assessed.

However, according to the new data requirement of Regulation (EC) 283/2013, a feeding study may be triggered where the plant protection product is used in crops whose parts or products, also after processing, are fed to fish and where residues in feed may occur from the intended application. Processed mustard seeds may be used as fish feed item according to the working document on the nature of pesticides residues in fish (SANCO/11187/2013, European Commission, 2013). As acetamiprid is not fat soluble (EFSA 2016) investigation of the nature and magnitude of residues in fish in principle would not be required according to SANCO/11187/2013. The applicant nevertheless assessed the exposure of fish to acetamiprid residues via intake of feed containing treated mustard seeds.

Fish dietary burden from the intake of mustard seed was calculated with the STMR value of 0.03 mg/kg as derived from the submitted residue trials. The maximum dietary burden for common carp and rainbow trout was calculated to be 0.003 and 0.002 mg/kg DM, respectively and the calculated worst case intakes for both fish species are not significant (< 0.1 mg/kg DM) (Netherlands, 2021) thus demonstrating that further studies investigating the nature and magnitude of residues in fish are not required.

3. Consumer risk assessment

EFSA performed a dietary risk assessment using revision 3.1 of the EFSA PRIMo (EFSA, 2018a, 2019). This exposure assessment model contains food consumption data for different sub-groups of the EU population and allows the acute and chronic exposure assessment to be performed in accordance with the internationally agreed methodology for pesticide residues (FAO, 2016).

The toxicological reference values for acetamiprid used in the risk assessment (i.e. ADI of 0.025 mg/kg bw per day and ARfD of 0.025 mg/kg bw) were derived in the framework of the EU pesticides peer review (European Commission, 2018a).

Short-term (acute) dietary risk assessment

The short-term exposure assessment was performed only for the commodities assessed in the present MRL applications. The calculations were based on the highest residue (HR) (for plums, aubergines, peppers, cucurbits with edible peel (except gherkins), pomegranates) or medium residue (STMR) (for poppy seeds, mustard seeds) values as derived from the submitted supervised field trials and the complete list of input values can be found in Appendix D.1.

The short-term exposure did not exceed the ARfD for any of the crops/commodities assessed in these applications (see Appendix C).

Long-term (chronic) dietary risk assessment

In the framework of the focused MRL review according to Art. 43 of Regulation (EC) 396/2005, a comprehensive long-term exposure assessment was performed, taking into account the existing uses at EU level and the acceptable CXLs (EFSA, 2018b). Reviewed MRLs were then implemented into Regulation (EU) 2019/887.

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7 Commission Regulation (EU) 2019/88 of 18 January 2019 amending Annex II to Regulation (EC) No 396/2005 of the European Parliament and of the Council as regards maximum residue levels for acetamiprid in certain products. C/2019/140. OJ L 22, 24.1.2019, p. 1–12.
EFSA updated this calculation with the relevant STMR values derived from the residue trials submitted in support of the present MRL applications. The crops on which no uses were reported in the MRL review were excluded from the exposure calculation. The input values used in the exposure calculations are summarised in Appendix D.1.

The estimated long-term dietary intake accounted for 16% of the ADI (NL toddler diet). The contribution of residues expected in the commodities assessed in these applications to the overall long-term exposure is presented in more detail in Appendix C.

EFSA concluded that the long-term intake of residues of acetamiprid resulting from the existing and the intended uses is unlikely to present a risk to consumer health.

For further details on the exposure calculations, a screenshot of the Report sheet of the PRIMo is presented in Appendix C.

4. Conclusion and Recommendations

The data submitted in support of present MRL applications were found to be sufficient to derive MRL proposals for various crops and honey.

EFSA concluded that the proposed use of acetamiprid on various crops and the potential transfer of residues into honey will not result in a consumer exposure exceeding the toxicological reference values and therefore is unlikely to pose a risk to consumers’ health.

It must be also noted that the investigation of possible risk to bees related to the use of acetamiprid is outside the scope of this reasoned opinion. The evaluation of the risk to honeybees was evaluated in the framework of the peer review of the approval of acetamiprid at EU level. Additionally, national competent authorities at Member State level should pay attention to the bee health and bee protection when granting authorisations for plant protection products.

The MRL recommendations are summarised in Appendix B.3.

References

EFSA (European Food Safety Authority), 2011. Review of the existing maximum residue levels (MRLs) for acetamiprid according to Article 12 of Regulation (EC) No 396/2005. EFSA Journal 2011;9(7):2328, 59 pp. https://doi.org/10.2903/j.efsa.2011.2328

EFSA (European Food Safety Authority), 2016. Conclusion on the peer review of the pesticide risk assessment of the active substance acetamiprid. EFSA Journal 2016;14(11):4610, 55 pp. https://doi.org/10.2903/j.efsa.2016.4610

EFSA (European Food Safety Authority), Brancato A, Brocca D, Ferreira L, Greco L, Jarrah S, Leuschner R, Medina P, Miron I, Nougadere A, Pedersen R, Reich H, Santos M, Stanek A, Tarazona J, Theobald A and Villamar-Bouza L, 2018a. Guidance on use of EFSA Pesticide Residue Intake Model (EFSA PRIMo revision 3). EFSA Journal 2018;16(1):5147, 43 pp. https://doi.org/10.2903/j.efsa.2018.5147

EFSA (European Food Safety Authority), 2018b. Focussed assessment of certain existing MRLs of concern for acetamiprid and modification of the existing MRLs for table olives, olives for oil production, barley and oats. EFSA Journal 2018;16(5):5262, 65 pp. https://doi.org/10.2903/j.efsa.2018.5262

EFSA (European Food Safety Authority), 2018c. Recommendations on the use of the proportionality approach in the framework of risk assessment for pesticide residues. EFSA supporting publication 2017;EN-1503, 18 pp. https://doi.org/10.2903/sp.efsa.2017.EN-1503

EFSA (European Food Safety Authority), Anastassiadou M, Brancato A, Carrasco Cabrera L, Ferreira L, Greco L, Jarrah S, Kazocina A, Leuschner R, Magrans JO, Miron I, Pedersen R, Racyk M, Reich H, Ruocco S, Sacchi A, Santos M, Stanek A, Tarazona J, Theobald A and Verani A, 2019. Pesticide Residue Intake Model- EFSA PRIMo revision 3.1 (update of EFSA PRIMo revision 3). EFSA supporting publication 2019;EN-1605, 15 pp. https://doi.org/10.2903/sp.efsa.2019.en-1605

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, 2013. Working document on the nature of pesticide residues in fish. SANCO/11187/2013-rev. 3, 31 January 2013.

European Commission, 2017. Technical Guideline on the Evaluation of Extraction Efficiency of Residue Analytical Methods. SANTE 2017/10632, Rev. 3, 22 November 2017.
European Commission, 2018a. Final renewal report for the active substance acetamiprid. Finalised in the Standing Committee on the Food Chain and Animal Health at its meeting on 13 December 2017 in view of the inclusion of active substance acetamiprid in Annex I of Council Directive 91/414/EEC. SANTE/10502/2017 Rev 4, 13 December 2017.

European Commission, 2018b. Technical guidelines for determining the magnitude of pesticide residues in honey and setting Maximum Residue Levels in honey. SANTE/11956/2016 rev. 9. 14 September 2018.

European Commission, 2020. Technical guidelines on data requirements for setting maximum residue levels, comparability of residue trials and extrapolation on residue data on products from plant and animal origin. SANTE/2019/12752, 23 November 2020.

FAO (Food and Agriculture Organization of the United Nations), 2016. Submission and evaluation of pesticide residues data for the estimation of Maximum Residue Levels in food and feed. Pesticide Residues. 3rd Edition. FAO Plant Production and Protection Paper 225, 298 pp.

Italy, 2021. Evaluation report on the modification of MRL for acetamiprid in pomegranate. March 2021, revised in July 2021, 55 pp. Available online: www.efsa.europa.eu

Netherlands, 2015. Renewal Assessment Report (RAR) and proposed decision of the Netherlands prepared in the context of the possible renewal of acetamiprid under Regulation (EC) 1107/2009. November 2015.

Netherlands, 2016. Re-Assessment Report and proposed decision of the Netherlands prepared in the context of the possible renewal of acetamiprid under Regulation (EC) 1107/2009. June 2016.

Netherlands, 2021. Evaluation report on the modification of MRLs for acetamiprid in various crops. March 2021, revised in June 2021, 122 pp. 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.

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, 4 September 2013.

Abbreviations

| Abbreviation | Definition |
|--------------|------------|
| a.s.         | active substance |
| ADI          | acceptable daily intake |
| ARfD         | acute reference dose |
| BBCH         | growth stages of mono- and dicotyledonous plants |
| bw           | body weight |
| CF           | conversion factor for enforcement to risk assessment residue definition |
| cGAP         | critical GAP |
| CIRCA        | (EU) Communication & Information Resource Centre Administrator |
| CS           | capsule suspension |
| CV           | coefficient of variation (relative standard deviation) |
| CXL          | Codex maximum residue limit |
| DAR          | draft assessment report |
| DAT          | days after treatment |
| DM           | dry matter |
| DT$_{90}$    | period required for 90% dissipation (define method of estimation) |
| EC           | emulsifiable concentrate |
| ECD          | electron capture detector |
| EDI          | estimated daily intake |
| EMS          | evaluating Member State |
| eq           | residue expressed as a.s. equivalent |
| FAO          | Food and Agriculture Organization of the United Nations |
| GAP          | Good Agricultural Practice |
| GC           | gas chromatography |
| GC-ECD       | gas chromatography with electron capture detector |
| GC-MS        | gas chromatography with mass spectrometry |
| GC-MS/MS     | gas chromatography with tandem mass spectrometry |
| GR           | granule |
| HPLC         | high-performance liquid chromatography |
| HPLC-MS      | high-performance liquid chromatography with mass spectrometry |
| HPLC-MS/MS   | high-performance liquid chromatography with tandem mass spectrometry |
| HR           | highest residue |
| IEDI         | international estimated daily intake |
| Acronym | Definition |
|---------|------------|
| IESTI   | international estimated short-term intake |
| ILV     | independent laboratory validation |
| ISO     | International Organisation for Standardisation |
| IUPAC   | International Union of Pure and Applied Chemistry |
| LC      | liquid chromatography |
| LOQ     | limit of quantification |
| MRL     | maximum residue level |
| MS      | Member States |
| MS      | mass spectrometry detector |
| MS/MS   | tandem mass spectrometry detector |
| MW      | molecular weight |
| NEU     | northern Europe |
| OECD    | Organisation for Economic Co-operation and Development |
| PBI     | plant back interval |
| PF      | processing factor |
| PHI     | preharvest interval |
| PRIMO   | (EFSA) Pesticide Residues Intake Model |
| QuEChERS | Quick, Easy, Cheap, Effective, Rugged and Safe (analytical method) |
| RA      | risk assessment |
| RAC     | raw agricultural commodity |
| RD      | residue definition |
| RMS     | rapporteur Member State |
| SANCO   | Directorate-General for Health and Consumers |
| SC      | suspension concentrate |
| SEU     | southern Europe |
| SG      | water-soluble granule |
| SL      | soluble concentrate |
| SP      | water-soluble powder |
| STMR    | supervised trials median residue |
| TAR     | total applied radioactivity |
| TRR     | total radioactive residue |
| UV      | ultraviolet (detector) |
| WHO     | World Health Organization |
## Appendix A – Summary of intended GAPs triggering the amendment of existing EU MRLs

| Crop and/or situation | NEU, SEU, MS or country | F G or I(a) | Pests or group of pests controlled | Preparation Type(b) | Conc. a.s. (g/kg) | Method kind | Range of growth stages and season(c) | Number min–max | Interval between application (days) min–max | Application rate per treatment g a.s./hL min–max | Water (L/ha) min–max | Rate min–max | Unit | PHI (days)(d) | Remarks |
|-----------------------|--------------------------|-------------|----------------------------------|----------------------|------------------|------------|----------------------------------------|----------------|------------------------------------------|-----------------------------------------------|------------------|--------------|-------|-------------|---------|
| Plums                 | RO, SI, SK, CZ, LU       | F           | Cydia pomonella, Phyllonorycter blandardella, Cacopsylla pyri | SG                   | 200 g/kg         | Foliar      | BBCH 71–89                             | 1               |                                         | 500 75 g a.i./ha                                    |                  |              | 14     | Foliar spray Atomising |
| Plums                 | PL, SK, CZ              | F           | Cydia pomonella, Phyllonorycter blandardella, Cacopsylla pyri | SP                   | 200 g/kg         | Foliar      | BBCH 71–89                             | 1               |                                         | 500 75 g a.i./ha                                    |                  |              | 14     | Foliar spray Atomising |
| Plums                 | GR, ES, FR, PT, BG, HR, MT | F          | Aphids (Myzus persicae, Aphis pomi, Aphis spiraecola, Myzus cerasi), Leaf miners (Leucoptera malifoliella, Phyllonorycter blandardella), Sawfly, Scales, Drosophila suzuki DROSSU, Capnodis tenebrionis | SG                   | 200 g/kg         | Foliar      | BBCH 71–89                             | 1               |                                         | 1,000 75 g a.i./ha                                  |                  |              | 14     |                         |
| Crop and/or situation | NEU, SEU, MS or country | F G or T | Pests or group of pests controlled | Preparation | Application | Application rate per treatment | PHI (days)(d) | Remarks |
|-----------------------|-------------------------|----------|-----------------------------------|-------------|-------------|-----------------------------|---------------|---------|
| **Plums**             | EL, ES, FR, HR, IT, PT  | F        | Aphids (Myzus persicae, Aphis pomii, Aphis spiraecola, Myzus cerasi), Leaf miners (Leucoptera malifoliella, Phyllonorycter blandardella), Sawfly, Scales, Capnodis tenebrosis, Asymmetrasca decedens | SP          | Foliar treatment – broadcast spraying | BBCH 71–89 | 1 | 800–1,200 | 14 |
| **Tomatoes**          | CY, BG, ES, FR, GR, PT, DE, UK, RO, HR, MT, LU, LT | G        | Whitefly (Bemisia tabaci, Trialeurodes vaporariorum) | SG          | Foliar treatment – broadcast spraying | Beginning of infestation (BBCH 51–89) | 2 | 14 | 150–1,700 | 3 |
| **Aubergines/egg plants** | CY, BG, ES, FR, GR, PT, DE, UK, RO, HR, MT, LU, LT | G        | Whitefly (Bemisia tabaci, Trialeurodes vaporariorum) | SG          | Foliar treatment – broadcast spraying | Beginning of infestation (BBCH 51–89) | 2 | 14 | 150–1,700 | 3 |
| Crop and/or situation                                                                 | NEU, SEU, MS or country | F G or T(a) | Type(b) | Conc. a.s. (g/kg) | Method kind | Range of growth stages and season(c) | Number min–max | Interval between application (days) min–max | Application rate per treatment | PHI (days)(d) | Remarks |
|-------------------------------------------------------------------------------------|------------------------|------------|---------|-----------------|-------------|----------------------------------------|----------------|---------------------------------------------|---------------------------------|-------------|---------|
| Tomatoes                                                                            | ES, FR, GR, PT, IT, PL, BG | G          | Whitefly (Bemisia tabaci, Trialeurodes vaporariorum) | SP           | 200 g/kg       | Foliar treatment – broadcast spraying | Beginning of infestation (BBCH 51–89) | 2 | 14 | 150–1,700 | 70–100 | g a.i./ha | 3 |
| Aubergines/egg plants                                                                | ES, FR, GR, PT, IT, PL, BG | G          | Whitefly (Bemisia tabaci, Trialeurodes vaporariorum) | SP           | 200 g/kg       | Foliar treatment – broadcast spraying | Beginning of infestation (BBCH 51–89) | 2 | 14 | 150–1,700 | 70–100 | g a.i./ha | 3 |
| Sweet peppers/bell peppers                                                           | BG, ES, FR, GR, PT, BE, NL, RO, UK, MT, LU, LT | G          | Aphids (Myzus persicae, Aphis gossypii) | SG           | 200 g/kg       | Foliar treatment – broadcast spraying | Beginning of infestation (BBCH 40–89) | 2 | 14 | 150–1,700 | 50     | g a.i./ha | 3 |
| Sweet peppers/bell peppers                                                           | ES, FR, GR, PT, IT, BG, PL | G          | Aphids (Myzus persicae, Aphis gossypii) | SP           | 200 g/kg       | Foliar treatment – broadcast spraying | Beginning of infestation (BBCH 40–89) | 2 | 14 | 150–1,700 | 50     | g a.i./ha | 3 |
| Cucumber, courgette and other cucurbits with edible peel                             | SE, BG, ES, GR, PT, AT, DE, CY, MT, LU, LT | G          | Whitefly (Trialeurodes vaporariorum, Bemisia tabaci) | SG           | 200 g/kg       | Foliar treatment – broadcast spraying | Beginning of infestation (BBCH 40–89) | 2 | 14 | 200–1,700 | 70–100 | g a.i./ha | 3 |
### Crop and/or situation

| Crop and/or situation | NEU, SEU, MS or country | F  | G  | T(a) | Pests or group of pests controlled | Preparation | Application | Application rate per treatment | PHI (days)(d) | Remarks |
|-----------------------|-------------------------|----|----|------|-----------------------------------|-------------|-------------|---------------------------------|--------------|---------|
| Cucumber, courgette and other cucurbits with edible peel | ES, GR, PT, PL G | | | | Whitefly (Trialeurodes vaporariorum, Bemisia tabaci) | SP 200 g/kg | Foliar treatment – broadcast spraying | Beginning of infestation (BBCH 40–89) | 2 14 | 200–1,700 70–100 g a.i./ha | 3 |
| Poppy seeds | SK, CZ F | | | | Aphids Ceutorhynchus | SG 200 g/kg | Foliar treatment – broadcast spraying | BBCH 50–59 BBCH 60–80 | 2 14 | 300 30 g a.i./ha | n.a. |
| Poppy seeds | SK, CZ F | | | | Aphids Ceutorhynchus | SP 200 g/kg | Foliar treatment – broadcast spraying | BBCH 50–59 BBCH 60–80 | 2 14 | 300 30 g a.i./ha | n.a. |
| Mustard seeds | RO, BE, AT, DE, HU, CZ, SK, LU F | | | | Pollen beetle, Pod pests | SG 200 g/kg | Foliar treatment – broadcast spraying | BBCH 50-80 | 1 | 200–600 40 g a.i./ha | 28 |
| Mustard seeds | PL, HU, CZ, SK, UK F | | | | Pollen beetle, Pod pests | SP 200 g/kg | Foliar treatment – broadcast spraying | BBCH 50-80 | 1 | 200–600 40 g a.i./ha | 28 |
| Granate apples/ pomegranates | SEU F | | | | Aphids, mealybug (Planococcus sp.) | SL 200 g/L | Foliar treatment – ultra low volume spraying | BBCH 51–85 | 1 n.a. | 5–7,5 1,000–1,500 g a.i./ha | 14 |

**MRL:** maximum residue level; **GAP:** Good Agricultural Practice; **NEU:** northern European Union; **SEU:** southern European Union; **MS:** Member State; a.s.: active substance.

(a): Outdoor or field use (F), greenhouse application (G) or indoor application (I).

(b): CropLife International Technical Monograph no 2, 7th Edition. Revised March 2017. Catalogue of pesticide formulation types and international coding system.

(c): Growth stage range from first to last treatment (BBCH Monograph, Growth Stages of Plants, 1997, Blackwell, ISBN 3-8263-3152-4), including, where relevant, information on season at time of application.

(d): PHI – minimum preharvest interval.
In the framework of the review of existing MRLs according to Art. 12 of EU Regulation 396/2005 (EFSA, 2011), subsequent MRL applications and the focused assessment of certain existing MRLs under Art.43 (EFSA, 2018b), numerous GAPs were reported for crops that might be attractive to bees for food foraging and that might contribute to the final residues of acetamiprid in honey. However, since the MRL application in honey is not linked to one specific GAP and applies to honey as food item for consumers, the use pattern in phacelia tanacetifolia as surrogate crop with high melliferous capacity is not included in this Appendix but described in the section 1.2 of the reasoned opinion.
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 | Crop(s) | Application(s) | Sampling (DAT) | Comment/Source |
|----------------------------------|-------------|---------|----------------|----------------|----------------|
| Fruit crops | Eggplants | Dotting on leave and fruit surface, 1 × 9.5 g a.s./hl | 7, 14 | Radiolabelled active substance: pyridine-2,6-14C acetamiprid (EFSA, 2011, 2016) |
| | Apples | Foliar, 1 × 208 g/ha | 0, 7, 14, 28, 62, 90 | Radiolabelled active substance: pyridine-2,6-14C acetamiprid (EFSA, 2011, 2016) |
| | | Fruit dotting, 1 × 104 g/ha | 0, 14, 28, 62 | |
| Root crops | Carrots | Foliar, 2 × 100 g/ha | 14 | Radiolabelled active substance: pyridine-2,6-14C acetamiprid (EFSA, 2011, 2016) |
| Leafy crops | Cabbages | Foliar, 1 × 302 g/ha | 0, 7, 14, 21, 28, 63 | Radiolabelled active substance: pyridine-2,6-14C acetamiprid (EFSA, 2011, 2016) |
| | | Soil treatment, 1 × 5,940 g/ha | 7, 14, 28 | |
| Pulses/oilseeds | Cotton | Foliar, 4 × 123 | 0, 7, 14, 28, 63 | Radiolabelled active substance: pyridine-2,6-14C acetamiprid (EFSA, 2011, 2016) |
| | | Foliar, 4 × 1,230 g/ha | 14, 28 DAT | |

| Rotational crops (available studies) | Crop groups | Crop(s) | Application(s) | PBI (DAT) | Comment/Source |
|----------------------------------|-------------|---------|----------------|----------|----------------|
| Root/tuber crops | Turnips | Bare soil, 266 g a.s./ha | 0 | Radiolabelled active substance: the study was conducted with the most persistent acetamiprid soil metabolite IM-1-5 (DT₅₀ 319–663 days) (EFSA, 2016) |
| Leafy crops | Spinaches | Bare soil, 266 g a.s./ha | 0 | |
| Cereal (small grain) | Wheat | Bare soil, 266 g a.s./ha | 0 | |

| Processed commodities (hydrolysis study) | Conditions | Stable? | Comment/Source |
|------------------------------------------|------------|--------|----------------|
| Pasteurisation (20 min, 90°C, pH 4) | Yes | Acetamiprid was stable under standard hydrolysis conditions. Pasteurisation, baking/brewing/boiling and sterilisation are unlikely to result in any significant metabolites (EFSA, 2011, 2016) |
| Baking, brewing and boiling (60 min, 100°C, pH 5) | Yes | |
| Sterilisation (20 min, 120°C, pH 6) | Yes | |
Can a general residue definition be proposed for primary crops?

| Yes | Acetamiprid was identified as the major component of the residues in almost all plant matrices (EFSA, 2011, 2016) |

Rotational crop and primary crop metabolism similar?

| Yes | Since acetamiprid has a low persistence in soil the metabolism study in rotational crops was conducted using the more persistent soil metabolite IM-1-5 which was the only residue found. No other metabolites or unidentified residues were observed in any crop commodity in the rotational crop metabolism study (EFSA, 2016) |

Residue pattern in processed commodities similar to residue pattern in raw commodities?

| Yes | Acetamiprid is hydrolytically stable under standard processing condition. Thus, the same residue definition as for raw commodities also applies to processed commodities (EFSA, 2011, 2016) |

Plant residue definition for monitoring (RD-Mo)

| Acetamiprid |

Plant residue definition for risk assessment (RD-RA)

| Acetamiprid |

Methods of analysis for monitoring of residues (analytical technique, crop groups, LOQs)

| Multiresidues (QuEChERS) |
|--------------------------|
| HPLC-MS/MS (LOQ: 0.01 mg/kg for apples, potatoes, oranges, maize grain, sunflower seeds and honey) (EFSA, 2016). |
| HPLC-MS/MS (LOQ: 0.01 mg/kg for dry beans, dry beans straw, mandarin, oilseed rapes, olives and olive oil) (EFSA, 2018b). |
| HPLC-MS/MS (individual LOQ: 0.05 mg/kg) for determination of acetamiprid and its metabolites IM-1-4 and IM-1-5 in honey; ILV provided (Netherlands, 2021) |

DAT: days after treatment; PBI: plant-back interval; BBCH: growth stages of mono- and dicotyledonous plants; a.s.: active substance; MRL: maximum residue level; GC-MS: gas chromatography with mass spectrometry; LC-MS/MS: liquid chromatography with tandem mass spectrometry; HPLC-MS/MS: high performance liquid chromatography with tandem mass spectrometry; LOQ: limit of quantification; QuEChERS: Quick, Easy, Cheap, Effective, Rugged, and Safe; ILV: independent laboratory validation.
B.1.1.2. Stability of residues in plants

| Plant products (available studies) | Category                  | Commodity                          | T (°C) | Stability period | Compounds covered | Comment/Source       |
|-----------------------------------|---------------------------|------------------------------------|--------|------------------|-------------------|---------------------|
|                                   |                           |                                    |        |                  |                   |                     |
|                                  | High water content        | Cabbage, cucumber                  | –18    | 12 Months        |                   | Parent EFSA (2016)  |
|                                  |                           | Apple, tomato                      | –18    | ≤ 13 Months      |                   | Parent EFSA (2016)  |
|                                  |                           | Lettuce                            | –18    | 15 Months        |                   | Parent EFSA (2016)  |
|                                  | High oil                  | Cotton seed, cotton oil, orange oil| –18    | 12 Months        |                   | Parent EFSA (2016)  |
|                                  | High protein content      | Fodder peas                        | –18    | 12 Months        |                   | Parent EFSA (2016)  |
|                                  | Dry/high starch           | Potato tuber                       | –18    | 8 Months         |                   | Parent EFSA (2016)  |
|                                  | High acid content         | Orange, orange juice               | –18    | 12 Months        |                   | Parent EFSA (2016)  |
|                                  | Specific matrices         | Dry bean straw                     | –18    | 12 Months        |                   | Parent EFSA (2018b) |
|                                  |                           | Honey                              | –18    | 4 Months         |                   | Parent, IM-1-4 and IM-1-5 Netherlands (2021) |
|                                  | Processed products        | Apple juice/wet pomace              | –18    | 12 Months        |                   | Parent EFSA (2016)  |
|                                  |                           | Cotton gin trash/hulls/meal Orange dried pulp, orange juice | –18    | 12 Months        |                   |                     |

B.1.2. Magnitude of residues in plants

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

| Commodity | Region/(a) | Residue levels observed in the supervised residue trials (mg/kg) | Comments/Source                                                                 | Calculated MRL (mg/kg) | HR(b) (mg/kg) | STMR(c) (mg/kg) | CF(d) |
|-----------|------------|-----------------------------------------------------------------|---------------------------------------------------------------------------------|------------------------|---------------|----------------|-------|
| Plums     | NEU        | 3 × < 0.01, 3 × 0.01, 2 × 0.02                                    | Since the NEU and SEU data sets are similar (Mann–Whitney U-test) and based on the same GAPs, data are combined for the MRL proposal | 0.04                   | 0.03          | 0.01           | n/a   |
|           | SEU        | 5 × < 0.01, 0.01, 0.02, 0.03                                      |                                                                                  |                        |               |                |       |
| Aubergines| Indoor     | 2 × 0.06, 0.07, 0.11, 2 × 0.13, 0.15, 0.19                      | Residue trials on tomatoes are compliant with the GAP and the residue data can be extrapolated to aubergines. | 0.4                    | 0.19          | 0.12           | n/a   |
## Commodity Region/ (a) Residue levels observed in the supervised residue trials (mg/kg) Comments/Source Calculated MRL (mg/kg) HR(b) (mg/kg) STMR(c) (mg/kg) CF(d)  
### Peppers Indoor  
- Peppers Indoor: `<0.01, 0.05, 0.06, 0.09, 0.11, 0.17, 0.19, 0.25, 0.45`
- Residues scaled to GAP rate:
  - `<0.01, 2 × 0.03, 0.04, 0.05, 2 × 0.08, 0.13, 0.23`

Residue trials on pepper are overdosed compared to the GAP, all other parameters are compliant. Residue levels are scaled down according to proportionality principle.

| Commodity             | Region/ (a) | Residue levels observed in the supervised residue trials (mg/kg) | Comments/Source                                                                                                                                                                                                 | Calculated MRL (mg/kg) | HR(b) (mg/kg) | STMR(c) (mg/kg) | CF(d) |
|-----------------------|-------------|------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|--------------|----------------|--------|
| Peppers               | Indoor      | `<0.01, 0.05, 0.06, 0.09, 0.11, 0.17, 0.19, 0.25, 0.45`          | Residue trials on pepper are overdosed compared to the GAP, all other parameters are compliant. Residue levels are scaled down according to proportionality principle.                                          | 0.4                    | 0.23         | 0.05           | n/a    |
| Cucumbers, courgettes, other cucurbits with edible peel Indoor | Cucumbers: `<0.02, 0.05, 0.07, 0.08, 0.14`
Courgettes: `<0.03, 0.05, 0.20`
Combined data set: `<0.02, 0.03, 2 × 0.05, 0.07, 0.08, 0.14, 0.20`

Residue trials on cucumbers and courgettes are compliant with the GAP, combined and extrapolated to cucumbers, courgettes, other cucurbits with edible peel. A separate MRL is currently set on gherkins (EFSA, 2016, 2018b) at 0.6 mg/kg, which is not exceeded by this residue data set. |

| Commodity             | Region/ (a) | Residue levels observed in the supervised residue trials (mg/kg) | Comments/Source                                                                                                                                                                                                 | Calculated MRL (mg/kg) | HR(b) (mg/kg) | STMR(c) (mg/kg) | CF(d) |
|-----------------------|-------------|------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|--------------|----------------|--------|
| Cucumbers, courgettes, other cucurbits with edible peel Indoor | `<0.02, 0.021, 0.05, 0.11, 0.20`
Residues scaled to GAP rate:
- `2 × 0.01, 0.03, 0.07, 0.13`

Residue trials on oilseed rape are overdosed compared to the GAP, all other parameters are compliant. Residue levels are scaled down according to proportionality principle and extrapolated to poppy seeds |

| Commodity             | Region/ (a) | Residue levels observed in the supervised residue trials (mg/kg) | Comments/Source                                                                                                                                                                                                 | Calculated MRL (mg/kg) | HR(b) (mg/kg) | STMR(c) (mg/kg) | CF(d) |
|-----------------------|-------------|------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|--------------|----------------|--------|
| Mustard seeds NEU     | `<3 × <0.01, 0.03, 0.04, 2 × 0.08, 0.10`
Residues scaled to GAP rate:
- `3 × <0.01, 2 × 0.03, 2 × 0.06, 0.08`

Residue trials on oilseed rape are overdosed compared to the GAP, all other parameters are compliant. Residue levels are scaled down according to proportionality principle and extrapolated to mustard seeds |

| Commodity             | Region/ (a) | Residue levels observed in the supervised residue trials (mg/kg) | Comments/Source                                                                                                                                                                                                 | Calculated MRL (mg/kg) | HR(b) (mg/kg) | STMR(c) (mg/kg) | CF(d) |
|-----------------------|-------------|------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|--------------|----------------|--------|
| Pomegranates SEU      | 0.06, 0.08, 0.09, 0.16
Residue trials on pomegranates are compliant with the GAP |

| Commodity             | Region/ (a) | Residue levels observed in the supervised residue trials (mg/kg) | Comments/Source                                                                                                                                                                                                 | Calculated MRL (mg/kg) | HR(b) (mg/kg) | STMR(c) (mg/kg) | CF(d) |
| Phacelia tanacetifolia (surrogate crop for determination of residues in honey) NEU/SEU | Residues in honey:
- `2 × 0.05, 0.051, 0.162`

Residue trials performed in semi-field/tunnels using phacelia as surrogate crops with melliferous properties |

| Commodity             | Region/ (a) | Residue levels observed in the supervised residue trials (mg/kg) | Comments/Source                                                                                                                                                                                                 | Calculated MRL (mg/kg) | HR(b) (mg/kg) | STMR(c) (mg/kg) | CF(d) |
|-----------------------|-------------|------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|--------------|----------------|--------|
| Phacelia tanacetifolia (surrogate crop for determination of residues in honey) NEU/SEU | `<0.01, 0.03, 0.07, 0.13`
Residues scaled to GAP rate:
- `2 × 0.01, 0.03, 0.07, 0.13`

Residue trials performed in semi-field/tunnels using phacelia as surrogate crops with melliferous properties |

| MRL: maximum residue level; GAP: Good Agricultural Practice; Mo: monitoring; RA: risk assessment n/a: not applicable.  
(a): NEU: Outdoor trials conducted in northern Europe, SEU: Outdoor trials conducted in southern Europe, EU: indoor EU trials or Country code: if non-EU trials.  
(b): Highest residue. The highest residue for risk assessment refers to the whole commodity and not to the edible portion.  
(c): Supervised trials median residue. The median residue for risk assessment refers to the whole commodity and not to the edible portion.  
(d): Conversion factor to recalculate residues according to the residue definition for monitoring to the residue definition for risk assessment. |
B.1.2.2. Residues in rotational crops

| Residues in rotational and succeeding crops expected based on confined rotational crop study? | Yes | TRR in the range of 0.096–0.531 mg eq/kg in feed and of 0.004–0.100 mg eq/kg in food commodities. 77–94% of TRR extractable (acetonitrile:water), with IM-1-5 as the sole metabolite identified (0.09–0.41 mg eq/kg in feed and 0.01–0.09 mg eq/kg in food commodities) (EFSA, 2016) |
| Residues in rotational and succeeding crops expected based on field rotational crop study | No | Field rotational crop studies conducted in NEU and SEU with acetamiprid applied on the bare soil at ca. 300 g/ha, confirmed that acetamiprid, IM-1-4 and IM-1-5 residues are not expected to be present in rotational crops (EFSA, 2016) |

B.1.2.3. Processing factors

No processing studies were submitted in the framework of the present MRL applications.

B.2. Consumer risk assessment

0.025 mg/kg bw (European Commission, 2018)

- Highest IESTI, according to EFSA PRIMo
  - Sweet peppers/bell peppers: 54.7% of ARfd (children)
  - Cucumbers: 52.4% of ARfd (children)
  - Courgettes: 37.2% of ARfd (children)
  - Granate apples/pomegranates: 35.2% of ARfd (children)
  - Aubergines/egg plants: 20.6% of ARfd (adults)
  - Plums: 5.1% of ARfd (children)
  - Honey and other apiculture products: 2.3% of ARfd (children)
  - Mustard seeds: 0.1% of ARfd (children)
  - Poppy seeds: 0.1% of ARfd (adults)

Assumptions made for the calculations

The short-term exposure assessment was calculated only for the crops under assessment, by updating the input values for the risk assessment derived in the recent focused MRL review according to Art. 43 (EFSA, 2018b) with the highest residue levels (for plums, aubergines, peppers, cucurbits with edible peel (except gherkins), pomegranates) or medium residue levels (for poppy seeds, mustard seeds) derived from the submitted residue trials for the commodities assessed under the present MRL applications. For honey the input value was the HR as derived from the residue trials on Phacelia tanacetifolia.

It is noted that when performing the calculations with PRIMo version 3.1, for two commodities not under assessment within the present applications an exceedance of the ARfd is observed (pears: 116% of ARfd, NL toddler diet and lettuce: 114% of ARfd, NL child diet).

Calculations performed with PRIMo revision 3.1.
ADI 0.025 mg/kg bw (European Commission, 2018)  
Highest IEDI, according to EFSA PRIMo 16% of ADI (NL toddler diet)

Contribution of crops assessed:
- Cucumbers: 0.39% of ADI
- Aubergines/egg plants: 0.16% of ADI
- Courgettes: 0.11% of ADI
- Sweet peppers/bell peppers: 0.11% of ADI
- Granate apples/pomegranates: 0.06% of ADI
- Honey and other apiculture products: 0.02% of ADI
- Plums: 0.01% of ADI
- Poppy seeds: 0.00% of ADI
- Mustard seeds: 0.00% of ADI

Assumptions made for the calculations
The long-term exposure assessment was calculated by updating the risk assessment values derived in the recent focused MRL review according to Art. 43 (EFSA, 2018b) with the median residue levels derived from the residue trials for the commodities assessed under present MRL applications. For honey the input value was the STMR as derived from the residue trials on Phacelia tanacetifolia. The crops for which no uses were reported in the MRL review were excluded from the exposure calculation.

Calculations performed with PRIMo revision 3.1.

ARfD: acute reference dose; bw: body weight; IESTI: international estimated short-term intake; PRIMo: (EFSA) Pesticide Residues Intake Model; ADI: acceptable daily intake; IEDI: international estimated daily intake; MRL: maximum residue level; STMR: supervised trials median residue; CXL: codex maximum residue limit.

### B.3. Recommended MRLs

| Code(a) | Commodity                  | Existing EU MRL (mg/kg) | Proposed EU MRL (mg/kg) | Comment/justification                                                                 |
|--------|----------------------------|-------------------------|-------------------------|---------------------------------------------------------------------------------------|
| 0140040| Plums                      | 0.03                    | 0.04                    | The submitted data are sufficient to derive an MRL proposal for the intended NEU/SEU use. Risk for consumers unlikely. |
| 0231030| Aubergines                 | 0.2                     | 0.4                     | Data on tomatoes extrapolated to aubergines. The MRL proposal reflects the more critical residue situation of the intended indoor use. Risk for consumers unlikely. |
| 0231020| Sweet peppers/bell peppers | 0.3                     | 0.4                     | The submitted data are sufficient to derive an MRL proposal for the intended indoor use. Risk for consumers unlikely. |
| 0232010| Cucumbers                  | 0.3                     | 0.4                     | The MRL proposal reflects the most critical residue situation of the intended indoor use. Risk for consumers unlikely. A separate MRL is currently set on gherkins at 0.6 mg/kg, which is not exceeded by the submitted residue data set. |
| 0232030| Courgettes                 | 0.3                     | 0.4                     |                                                                                       |
| 0232090| Other cucurbits with edible peel | 0.3                     | 0.4                     |                                                                                       |
| 0401030| Poppy seeds                | 0.01*                   | 0.3                     | Data on oilseed rape extrapolated to poppy seeds. The submitted data are sufficient to derive an MRL proposal for the intended NEU use. Risk for consumers unlikely. |
| 0401080| Mustard seeds              | 0.01*                   | 0.15                    | Data on oilseed rape extrapolated to mustard seeds. The submitted data are sufficient to derive a MRL proposal for the intended NEU use. Risk for consumers unlikely. |
| 163050 | Granate apples/pomegranates| 0.01*                   | 0.3                     | The submitted data are sufficient to derive a MRL proposal for the intended SEU use. Risk for consumers unlikely. |
## Modification of the existing MRLs for acetamiprid in various crops

| Code<sup>(a)</sup> | Commodity                              | Existing EU MRL (mg/kg) | Proposed EU MRL (mg/kg) | Comment/justification                                                                                                                                 |
|-------------------|----------------------------------------|-------------------------|-------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1040000           | Honey and other apiculture products    | 0.05*                   | 0.3                     | The MRL proposal reflects residues in honey from the critical authorised use and intended EU uses of acetamiprid on melliferous crops. MRL in honey is derived from semi-field/tunnel trials performed on *Phacelia tanacetifolia*. Risk for consumers unlikely. |

MRL: maximum residue level; NEU: northern Europe; SEU: southern Europe; GAP: Good Agricultural Practice.  
*: Indicates that the MRL is set at the limit of analytical quantification (LOQ).  
(a): Commodity code number according to Annex I of Regulation (EC) No 396/2005.  
(F): Fat soluble.
### Appendix C – Pesticide Residue Intake Model (PRIMo)

**Acetamiprid**

| Commodity | MRL (mg/kg) |
|-----------|-------------|
| Milk       | 0.2         |
| Honey      | 0.2         |
| Other crops| 0.2         |

#### Refined calculation mode

**Chronic risk assessment - JMPR methodology (EEDI/TMDR)**

| Commodity | MRL (mg/kg) |
|-----------|-------------|
| Milk       | 0.2         |
| Honey      | 0.2         |
| Other crops| 0.2         |

#### Input values

- **Details – chronic risk assessment**
- **Supplementary results – chronic risk assessment**
- **Details – acute risk assessment/children**
- **Details – acute risk assessment/adults**

### Acetamiprid

| Commodity | MRL (mg/kg) |
|-----------|-------------|
| Milk       | 0.2         |
| Honey      | 0.2         |
| Other crops| 0.2         |

### Acetamiprid – EFSA_PRIMo_rev3.1_v1.xlsm

- **Modifications of the existing MRLs for acetamiprid in various crops**
- **www.efsa.europa.eu/efsajournal 30 EFSA Journal 2021;19(9):6830**
### Details – acute risk assessment/children

The acute risk assessment is based on the ARfD.

The calculation is based on the large portion of the most critical consumer group.

### Details – acute risk assessment/adults

The acute risk assessment is based on the ARfD.

The calculation is based on the large portion of the most critical consumer group.

### Show results of IESTI calculation only for crops with GAPs under assessment

| Commodity | MRL/input (mg/kg) | Exposure (µg/kg bw) | Highest % of ARfD/ADI | Commodity | MRL/input (mg/kg) | Exposure (µg/kg bw) |
|-----------|-------------------|---------------------|-----------------------|-----------|-------------------|---------------------|
| Peas      | 0.45/0.21         | 28                  | 42%                   | Head cabbages | 0.45/0.25         | 11                  |
| Lettuces  | 1.5/0.75          | 28                  | 40%                   | Red mustards | 3.0/1.8           | 7.5                 |
| Apples    | 0.45/0.23         | 23                  | 39%                   | Quinces     | 0.85/0.64         | 9.7                 |
| Apricots  | 0.65/0.57         | 20                  | 36%                   | Blueberries | 2/1               | 9.1                 |
| Table grapes | 0.55/0.18        | 16                  | 34%                   | Table grapes | 0.55/0.25         | 8.5                 |
| Melons    | 0.2/0.11          | 17                  | 35%                   | Cherries (sweet) | 1.5/0.88 | 8.8                 |
| Tomatoes  | 0.55/0.28         | 16                  | 34%                   | Cherries (sweet) | 1.5/0.88 | 8.8                 |
| Quinces   | 0.85/0.64         | 16                  | 33%                   | Blackberries | 2/1               | 8.2                 |
| Sweet peppers/hill peppers | 0.43/0.23     | 14                  | 26%                   | Currents (red, black and white) | 2/1 | 6.6                 |
| Watermelons | 0.2/0.11         | 13                  | 26%                   | Peas        | 0.45/0.21         | 6.4                 |
| Cucumbers | 0.42/0.2         | 13                  | 24%                   | Apricots    | 0.45/0.27         | 6.2                 |
| Cauliflowers | 0.40/0.22       | 13                  | 24%                   | Broccoli    | 0.45/0.25         | 6.0                 |
| Head cabbages | 0.40/0.25        | 11                  | 24%                   | Wine grapes | 0.50/0.25         | 5.8                 |
| Cherries (sweet) | 1.5/0.88 | 11                  | 24%                   | Cherries (sweet) | 1.5/0.88 | 8.8                 |
| Blackberries | 2/1               | 11                  | 23%                   | Cherries (sweet) | 1.5/0.88 | 8.8                 |
| Bananas   | 0.43/0.11         | 10                  | 22%                   | Cucumbers  | 0.45/0.2           | 5.6                 |
| Broccoli  | 0.40/0.25         | 10                  | 22%                   | Cucumbers  | 0.45/0.2           | 5.6                 |
| Escaroles/broad-leaved endives | 0.45/0.25 | 10                  | 21%                   | Asparagus   | 0.45/0.19         | 5.1                 |
| Peaches   | 0.20/0.1          | 9.5                 | 20%                   | Cauliflowers | 0.40/0.22         | 5.1                 |
| Currgettes | 0.40/0.2         | 9.3                 | 20%                   | Cucumbers  | 0.45/0.2           | 5.6                 |
| Raspberries (red and yellow) | 0.2/1          | 9.2                 | 19%                   | Currgettes | 0.45/0.2           | 4.7                 |
| Medlar    | 0.85/0.64         | 8.9                 | 18%                   | Gooseberries (green, red and yellow) | 2/1 | 4.5                 |
| Granate apples/pomegranates | 0.3/0.16       | 8.8                 | 18%                   | Tomato    | 0.55/0.21         | 4.4                 |
| Asparagus | 0.85/0.43         | 8.3                 | 18%                   | Tomatoes   | 0.55/0.21         | 4.4                 |
| Potatoes  | 0.01/0.01         | 1.0                 | 10%                   | Potatoes   | 0.05/0.01         | 1.0                 |
| Table grapes | 0.25/0.11        | 1.0                 | 10%                   | Table grapes | 0.25/0.11        | 1.0                 |
| Raspberries (red and yellow) | 0.2/1          | 1.0                 | 10%                   | Table grapes | 0.25/0.11        | 1.0                 |
| Bananas   | 0.43/0.11         | 1.0                 | 10%                   | Table grapes | 0.25/0.11        | 1.0                 |
| Grapes    | 0.01/0.01         | 1.0                 | 10%                   | Table grapes | 0.25/0.11        | 1.0                 |
| Other farmed animals: Muscle/meat | 0.50/0.28 | 1.0                 | 10%                   | Table grapes | 0.25/0.11        | 1.0                 |
| Sheep: Edible offals (other than liver and kidney) | 0.50/0.28 | 1.0                 | 10%                   | Table grapes | 0.25/0.11        | 1.0                 |
| Romano rocket/rucola | 3/1               | 1.4                 | 10%                   | Eggs       | 0.45/0.2           | 3.3                 |
| Blackberries | 2/1               | 0.6                 | 10%                   | Blackberries | 0.45/0.2           | 3.3                 |
| Blueberries | 0.85/0.57         | 0.9                 | 10%                   | Blueberries | 0.85/0.57         | 0.9                 |
| Aronia melanea | 0.3/0.16        | 0.6                 | 10%                   | Aronia melanea | 0.3/0.16        | 0.6                 |
| Tomatoes  | 0.55/0.28         | 1.9                 | 10%                   | Tomatoes   | 0.55/0.28         | 1.9                 |
| Cauliflowers | 0.55/0.25        | 2.3                 | 9%                    | Cauliflowers | 0.55/0.25        | 2.3                 |
| Peaches   | 0.3/0.16          | 2.1                 | 9%                    | Peaches    | 0.3/0.16          | 2.1                 |
| Beans (with pods) | 0.65/0.32       | 2.7                 | 9%                    | Beans (with pods) | 0.65/0.32       | 2.7                 |
| Spinaches | 0.60/0.27         | 1.6                 | 9%                    | Spinaches  | 0.60/0.27         | 1.6                 |
| Beans (with pods) | 0.65/0.32       | 1.6                 | 9%                    | Beans (with pods) | 0.65/0.32       | 1.6                 |
| Peas (with pods) | 0.35/0.18        | 1.5                 | 9%                    | Peas (with pods) | 0.35/0.18        | 1.5                 |
| Sheep: Muscle/meat | 0.55/0.27 | 1.5                 | 9%                    | Sheep: Muscle/meat | 0.55/0.27 | 1.5                 |
| Cabbage | 0.3/0.16          | 1.4                 | 9%                    | Cabbage    | 0.3/0.16          | 1.4                 |
| Beans (without pods) | 0.35/0.18       | 1.4                 | 9%                    | Beans (without pods) | 0.35/0.18       | 1.4                 |
| Spinaches | 0.60/0.33         | 1.3                 | 9%                    | Spinaches  | 0.60/0.33         | 1.3                 |
| Peas (with pods) | 0.35/0.18        | 1.3                 | 9%                    | Peas (with pods) | 0.35/0.18        | 1.3                 |
| Cabbage | 0.3/0.16          | 1.2                 | 9%                    | Cabbage    | 0.3/0.16          | 1.2                 |

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| Percentage | Commodity                  | MRL/input (mg/kg) | Exposure (µg/kg bw) | Highest % of ARfD/ADI | Processed commodities | MRL/input (mg/kg) | Exposure (µg/kg bw) | Highest % of ARfD/ADI |
|------------|---------------------------|-------------------|---------------------|------------------------|-----------------------|-------------------|---------------------|------------------------|
| 4%         | Celery leaves             | 0.004/0.002       | 0.02                 | 0.01%                  | Potatoes              | 0.05/0.03         | 0.02                 | 0.01%                  |
| 3%         | Lemons                    | 0.05/0.02         | 0.03                 | 0.2%                   | Potatoes              | 0.05/0.03         | 0.02                 | 0.01%                  |
| 3%         | Oranges                   | 0.05/0.02         | 0.01                 | 0.02%                  | Potatoes              | 0.05/0.03         | 0.02                 | 0.01%                  |
| 2%         | Honey and other products  | 0.3/0.02          | 0.01                 | 0.02%                  | Potatoes              | 0.05/0.03         | 0.02                 | 0.01%                  |
| 2%         | Cross and other products  | 0.3/0.02          | 0.01                 | 0.02%                  | Potatoes              | 0.05/0.03         | 0.02                 | 0.01%                  |
| 2%         | Milk                       | 0.05/0.02         | 0.01                 | 0.02%                  | Potatoes              | 0.05/0.03         | 0.02                 | 0.01%                  |
| 2%         | Sweet corn                | 0.05/0.02         | 0.01                 | 0.02%                  | Potatoes              | 0.05/0.03         | 0.02                 | 0.01%                  |
| 2%         | Lime                       | 0.05/0.02         | 0.01                 | 0.02%                  | Potatoes              | 0.05/0.03         | 0.02                 | 0.01%                  |
| 1%         | Pear                      | 0.05/0.02         | 0.01                 | 0.02%                  | Potatoes              | 0.05/0.03         | 0.02                 | 0.01%                  |
| 1%         | Broccoli                  | 0.3/0.02          | 0.01                 | 0.02%                  | Potatoes              | 0.05/0.03         | 0.02                 | 0.01%                  |
| 1%         | Peaches                   | 0.1/0.02          | 0.01                 | 0.02%                  | Potatoes              | 0.05/0.03         | 0.02                 | 0.01%                  |
| 1%         | Almonds                   | 0.05/0.02         | 0.01                 | 0.02%                  | Potatoes              | 0.05/0.03         | 0.02                 | 0.01%                  |
| 1%         | Hazelnuts                 | 0.05/0.02         | 0.01                 | 0.02%                  | Potatoes              | 0.05/0.03         | 0.02                 | 0.01%                  |
| 0.8%       | Swedish fats              | 0.3/0.02          | 0.01                 | 0.02%                  | Potatoes              | 0.05/0.03         | 0.02                 | 0.01%                  |
| 0.7%       | Brussels sprouts          | 0.05/0.02         | 0.01                 | 0.02%                  | Potatoes              | 0.05/0.03         | 0.02                 | 0.01%                  |
| 0.6%       | Green beans               | 0.05/0.02         | 0.01                 | 0.02%                  | Potatoes              | 0.05/0.03         | 0.02                 | 0.01%                  |
| 0.6%       | Wheat                     | 0.1/0.02          | 0.01                 | 0.02%                  | Potatoes              | 0.05/0.03         | 0.02                 | 0.01%                  |
| 0.5%       | Peas                      | 0.1/0.02          | 0.01                 | 0.02%                  | Potatoes              | 0.05/0.03         | 0.02                 | 0.01%                  |
| 0.5%       | Cashew nuts               | 0.05/0.02         | 0.01                 | 0.02%                  | Potatoes              | 0.05/0.03         | 0.02                 | 0.01%                  |
| 0.5%       | Figs                      | 0.03/0.01         | 0.01                 | 0.02%                  | Potatoes              | 0.05/0.03         | 0.02                 | 0.01%                  |
| 0.5%       | Thyme                     | 0.1/0.02          | 0.01                 | 0.02%                  | Potatoes              | 0.05/0.03         | 0.02                 | 0.01%                  |
| 0.4%       | Poultry: Liver            | 0.1/0.02          | 0.01                 | 0.02%                  | Potatoes              | 0.05/0.03         | 0.02                 | 0.01%                  |
| 0.3%       | Milk: Sheep               | 0.05/0.02         | 0.01                 | 0.02%                  | Potatoes              | 0.05/0.03         | 0.02                 | 0.01%                  |
| 0.2%       | Rosemary                  | 0.05/0.02         | 0.01                 | 0.02%                  | Potatoes              | 0.05/0.03         | 0.02                 | 0.01%                  |
| 0.2%       | Barley                    | 0.03/0.01         | 0.01                 | 0.02%                  | Potatoes              | 0.05/0.03         | 0.02                 | 0.01%                  |
| 0.2%       | Brazil nuts               | 0.05/0.02         | 0.01                 | 0.02%                  | Potatoes              | 0.05/0.03         | 0.02                 | 0.01%                  |
| 0.2%       | Rapeseeds/canola seeds    | 0.4/0.03          | 0.01                 | 0.02%                  | Potatoes              | 0.05/0.03         | 0.02                 | 0.01%                  |
| 0.1%       | Garlic                    | 0.03/0.01         | 0.01                 | 0.02%                  | Potatoes              | 0.05/0.03         | 0.02                 | 0.01%                  |
| 0.1%       | Maitre cheese             | 0.1/0.02          | 0.01                 | 0.02%                  | Potatoes              | 0.05/0.03         | 0.02                 | 0.01%                  |
| 0.1%       | Macadamia                 | 0.05/0.02         | 0.01                 | 0.02%                  | Potatoes              | 0.05/0.03         | 0.02                 | 0.01%                  |
| 0.08%      | Lavender leaves           | 0.1/0.02          | 0.01                 | 0.02%                  | Potatoes              | 0.05/0.03         | 0.02                 | 0.01%                  |
| 0.03%      | Pearson nuts              | 0.05/0.02         | 0.01                 | 0.02%                  | Potatoes              | 0.05/0.03         | 0.02                 | 0.01%                  |
| 0.04%      | Chervil                   | 0.03/0.01         | 0.01                 | 0.02%                  | Potatoes              | 0.05/0.03         | 0.02                 | 0.01%                  |
| 0.01%      | Poultry: Fat tissue       | 0.05/0.02         | 0.01                 | 0.02%                  | Potatoes              | 0.05/0.03         | 0.02                 | 0.01%                  |
| 0.00%      | Carrot                    | 0.05/0.02         | 0.01                 | 0.02%                  | Potatoes              | 0.05/0.03         | 0.02                 | 0.01%                  |

For processed commodities, no exceedance of the ARfD/ADI was identified.
Appendix D – Input values for the exposure calculations

D.1. Consumer risk assessment

| Commodity                        | Existing/proposed MRL (mg/kg) | Source                  | Chronic risk assessment | Acute risk assessment | Comment (a) |
|----------------------------------|-------------------------------|-------------------------|-------------------------|-----------------------|-------------|
|                                  |                               |                         | Input value (mg/kg)     | Comment              | Input value (mg/kg) | Comment |
| Grapefruits                      | 0.9                           | EFSA (2018b)            | 0.00494                 | STMR-RAC*PeF         | 0.02158     | HR-RAC*PeF |
| Oranges                          | 0.9                           | EFSA (2018b)            | 0.00494                 | STMR-RAC*PeF         | 0.02158     | HR-RAC*PeF |
| Lemons                           | 0.9                           | EFSA (2018b)            | 0.00494                 | STMR-RAC*PeF         | 0.02158     | HR-RAC*PeF |
| Limes                            | 0.9                           | EFSA (2018b)            | 0.00494                 | STMR-RAC*PeF         | 0.02158     | HR-RAC*PeF |
| Mandarins                        | 0.9                           | EFSA (2018b)            | 0.00494                 | STMR-RAC*PeF         | 0.02158     | HR-RAC*PeF |
| Other citrus fruit               | 0.9                           | EFSA (2018b)            | 0.00494                 | STMR-RAC*PeF         | 0.02158     | HR-RAC*PeF |
| Almonds                          | 0.07                          | EFSA (2018b)            | 0.01                    | STMR-RAC             | 0.05        | HR-RAC     |
| Brazil nuts                      | 0.07                          | EFSA (2018b)            | 0.01                    | STMR-RAC             | 0.05        | HR-RAC     |
| Cashew nuts                      | 0.07                          | EFSA (2018b)            | 0.01                    | STMR-RAC             | 0.05        | HR-RAC     |
| Chestnuts                        | 0.07                          | EFSA (2018b)            | 0.01                    | STMR-RAC             | 0.05        | HR-RAC     |
| Coconuts                         | 0.07                          | EFSA (2018b)            | 0.01                    | STMR-RAC             | 0.05        | HR-RAC     |
| Hazelnuts/cobnuts                | 0.07                          | EFSA (2018b)            | 0.01                    | STMR-RAC             | 0.05        | HR-RAC     |
| Macadamia                        | 0.07                          | EFSA (2018b)            | 0.01                    | STMR-RAC             | 0.05        | HR-RAC     |
| Pecans                           | 0.07                          | EFSA (2018b)            | 0.01                    | STMR-RAC             | 0.05        | HR-RAC     |
| Pine nut kernels                 | 0.07                          | EFSA (2018b)            | 0.01                    | STMR-RAC             | 0.05        | HR-RAC     |
| Pistachios                       | 0.07                          | EFSA (2018b)            | 0.01                    | STMR-RAC             | 0.05        | HR-RAC     |
| Walnuts                          | 0.07                          | EFSA (2018b)            | 0.01                    | STMR-RAC             | 0.05        | HR-RAC     |
| Other tree nuts                  | 0.07                          | EFSA (2018b)            | 0.01                    | STMR-RAC             | 0.05        | HR-RAC     |
| Apples                           | 0.4                           | EFSA (2018b)            | 0.07                    | STMR-RAC             | 0.21        | HR-RAC     |
| Pears                            | 0.4                           | EFSA (2018b)            | 0.07                    | STMR-RAC             | 0.21        | HR-RAC     |
| Quinces                          | 0.8                           | EFSA (2018b)            | 0.23                    | STMR-RAC             | 0.64        | HR-RAC     |
| Medlar                           | 0.8                           | EFSA (2018b)            | 0.23                    | STMR-RAC             | 0.64        | HR-RAC     |
| Loquats/Japanese medlars          | 0.8                           | EFSA (2018b)            | 0.23                    | STMR-RAC             | 0.64        | HR-RAC     |
| Other pome fruit                 | 0.8                           | EFSA (2018b)            | 0.23                    | STMR-RAC             | 0.64        | HR-RAC     |
| Apricots                         | 0.8                           | EFSA (2018b)            | 0.22                    | STMR-RAC             | 0.57        | HR-RAC     |
| Cherries (sweet)                 | 1.5                           | EFSA (2018b)            | 0.45                    | STMR-RAC             | 0.88        | HR-RAC     |
| Peaches                          | 0.2                           | EFSA (2018b)            | 0.06                    | STMR-RAC             | 0.1         | HR-RAC     |
| **Plums**                        | **0.04**                      | **Proposed**            | **0.01**                | **STMR-RAC**         | **0.03**    | **HR-RAC** |
| Table grapes                     | 0.5                           | EFSA (2018b)            | 0.09                    | STMR-RAC             | 0.25        | HR-RAC     |
| Wine grapes                      | 0.5                           | EFSA (2018b)            | 0.09                    | STMR-RAC             | 0.25        | HR-RAC     |
| Strawberries                     | 0.5                           | EFSA (2018b)            | 0.1                     | STMR-RAC             | 0.25        | HR-RAC     |
| Blackberries                     | 2                             | EFSA (2018b)            | 0.64                    | STMR-RAC             | 1           | HR-RAC     |
| Dewberries                       | 2                             | EFSA (2018b)            | 0.64                    | STMR-RAC             | 1           | HR-RAC     |
| Raspberries (red and yellow)     | 2                             | EFSA (2018b)            | 0.64                    | STMR-RAC             | 1           | HR-RAC     |
| Other cane fruit                 | 2                             | EFSA (2018b)            | 0.64                    | STMR-RAC             | 1           | HR-RAC     |
| Blueberries                      | 2                             | EFSA (2018b)            | 0.64                    | STMR-RAC             | 1           | HR-RAC     |
| Cranberries                      | 2                             | EFSA (2018b)            | 0.64                    | STMR-RAC             | 1           | HR-RAC     |
| Currants (red, black and white)  | 2                             | EFSA (2018b)            | 0.64                    | STMR-RAC             | 1           | HR-RAC     |
| Gooseberries (green, red and yellow) | 2                             | EFSA (2018b)            | 0.64                    | STMR-RAC             | 1           | HR-RAC     |
| Commodity                  | Existing/proposed MRL (mg/kg) | Source                  | Chronic risk assessment | Acute risk assessment | Comment | Input value (mg/kg) | Comment | Input value (mg/kg) | Comment |
|----------------------------|-------------------------------|-------------------------|-------------------------|-----------------------|---------|---------------------|---------|---------------------|---------|
| Rose hips                  | 2                             | EFSA (2018b)            | 0.64                    | STMR-RAC              | 1       | HR-RAC              |         |
| Mulberries (black and white) | 2                             | EFSA (2018b)            | 0.64                    | STMR-RAC              | 1       | HR-RAC              |         |
| Elderberries               | 2                             | EFSA (2018b)            | 0.64                    | STMR-RAC              | 1       | HR-RAC              |         |
| Figs                       | 0.03                          | EFSA (2018b)            | 0.01                    | STMR-RAC              | 0.01    | HR-RAC              |         |
| Table olives               | 3                             | EFSA (2018b)            | 0.8                     | STMR-RAC              | 1.3     | HR-RAC              |         |
| Bananas                    | 0.4                           | EFSA (2018b)            | 0.04949                 | STMR-RAC*PeF          | 0.1078  | HR-RAC*PeF          |         |
| Granate apples/pomegranates| 0.3                           | Proposed                | 0.09                    | STMR-RAC              | 0.16    | HR-RAC              |         |
| Potatoes                   | 0.01                          | EFSA (2018b)            | 0.01                    | LOQ                   | 0.01    | LOQ                 |         |
| Garlic                     | 0.02                          | EFSA (2018b)            | 0.01                    | STMR-RAC              | 0.01    | HR-RAC              |         |
| Onions                     | 0.02                          | EFSA (2018b)            | 0.01                    | STMR-RAC              | 0.02    | HR-RAC              |         |
| Tomatoes                   | 0.5                           | EFSA (2018b)            | 0.13                    | STMR-RAC              | 0.28    | HR-RAC              |         |
| Sweet peppers/bell peppers| 0.4                           | Proposed                | 0.05                    | STMR-RAC              | 0.23    | HR-RAC              |         |
| Aubergines/eggplants       | 0.4                           | Proposed                | 0.12                    | STMR-RAC              | 0.19    | HR-RAC              |         |
| Okra/lady's fingers        | 0.2                           | EFSA (2018b)            | 0.04                    | STMR-RAC              | 0.14    | HR-RAC              |         |
| Other solanacea            | 0.2                           | Reg. (EU) 2019/88       | 0.2                     | MRL                   |         |                     |         |
| Cucumbers                  | 0.4                           | Proposed                | 0.06                    | STMR-RAC              | 0.2     | HR-RAC              |         |
| Gherkins                   | 0.6                           | EFSA (2018b)            | 0.14                    | STMR-RAC              | 0.37    | HR-RAC              |         |
| Courgettes                 | 0.4                           | Proposed                | 0.06                    | STMR-RAC              | 0.2     | HR-RAC              |         |
| Other cucurbits – edible peel | 0.4                          | Proposed                | 0.06                    | STMR-RAC              |         |                     |         |
| Melons                     | 0.2                           | EFSA (2018b)            | 0.05                    | STMR-RAC              | 0.11    | HR-RAC              |         |
| Pumpkins                   | 0.2                           | EFSA (2018b)            | 0.05                    | STMR-RAC              | 0.11    | HR-RAC              |         |
| Watermelons                | 0.2                           | EFSA (2018b)            | 0.05                    | STMR-RAC              | 0.11    | HR-RAC              |         |
| Other cucurbits – inedible peel | 0.2                           | EFSA (2018b)            | 0.05                    | STMR-RAC              |         |                     |         |
| Sweet corn                 | 0.01                          | EFSA (2018b)            | 0.01                    | LOQ                   | 0.01    | LOQ                 |         |
| Broccoli                   | 0.4                           | EFSA (2018b)            | 0.03                    | STMR-RAC              | 0.25    | HR-RAC              |         |
| Cauliflowers               | 0.4                           | EFSA (2018b)            | 0.02                    | STMR-RAC              | 0.22    | HR-RAC              |         |
| Other flowering brassica   | 0.4                           | EFSA (2018b)            | 0.03                    | STMR-RAC              |         |                     |         |
| Brussels sprouts           | 0.05                          | EFSA (2018b)            | 0.02                    | STMR-RAC              | 0.03    | HR-RAC              |         |
| Head cabbages              | 0.4                           | EFSA (2018b)            | 0.02                    | STMR-RAC              | 0.25    | HR-RAC              |         |
| Lamb's lettuce/corn salads | 3                             | EFSA (2018b)            | 0.83                    | STMR-RAC              | 1.9     | HR-RAC              |         |
| Lettuces                   | 1.5                           | EFSA (2018b)            | 0.49                    | STMR-RAC              | 0.75    | HR-RAC              |         |
| Escaroles/broad-leaved endives | 0.4                         | EFSA (2018b)            | 0.1                     | STMR-RAC              | 0.25    | HR-RAC              |         |
| Cress and other sprouts and shoots | 3                         | EFSA (2018b)            | 0.83                    | STMR-RAC              | 1.9     | HR-RAC              |         |
| Land cress                 | 3                             | EFSA (2018b)            | 0.81                    | STMR-RAC              | 1.9     | HR-RAC              |         |
| Roman rocket/rucola        | 3                             | EFSA (2018b)            | 0.83                    | STMR-RAC              | 1.9     | HR-RAC              |         |
| Red mustards               | 3                             | EFSA (2018b)            | 0.81                    | STMR-RAC              | 1.9     | HR-RAC              |         |
| Commodity                        | Existing/proposed MRL (mg/kg) | Source                  | Chronic risk assessment Input value (mg/kg) | Source | Comment | Acute risk assessment Input value (mg/kg) | Source | Comment(a) |
|---------------------------------|------------------------------|-------------------------|---------------------------------------------|--------|---------|-------------------------------------------|--------|------------|
| Baby leaf crops (including brassica species) | 3                            | EFSA (2018b)            | 0.83 STMR-RAC                               |        |         | 1.9 HR-RAC                                 |        |            |
| Spinaches                       | 0.6                          | EFSA (2018b)            | 0.2 STMR-RAC                                |        |         | 0.31 HR-RAC                                |        |            |
| Purslanes                       | 0.6                          | EFSA (2018b)            | 0.2 STMR-RAC                                |        |         | 0.31 HR-RAC                                |        |            |
| Chard/beet leaves               | 0.6                          | EFSA (2018b)            | 0.2 STMR-RAC                                |        |         | 0.31 HR-RAC                                |        |            |
| Other spinach leaves similar    | 0.6                          | EFSA (2018b)            | 0.2 STMR-RAC                                |        |         |                                           |        |            |
| Chervil                          | 3                            | EFSA (2018b)            | 0.83 STMR-RAC                               |        |         | 1.9 HR-RAC                                 |        |            |
| Chives                           | 3                            | EFSA (2018b)            | 0.83 STMR-RAC                               |        |         | 1.9 HR-RAC                                 |        |            |
| Celery leaves                   | 3                            | EFSA (2018b)            | 0.83 STMR-RAC                               |        |         | 1.9 HR-RAC                                 |        |            |
| Parsley                          | 3                            | EFSA (2018b)            | 0.83 STMR-RAC                               |        |         | 1.9 HR-RAC                                 |        |            |
| Sage                             | 3                            | EFSA (2018b)            | 0.83 STMR-RAC                               |        |         | 1.9 HR-RAC                                 |        |            |
| Rosemary                         | 3                            | EFSA (2018b)            | 0.83 STMR-RAC                               |        |         | 1.9 HR-RAC                                 |        |            |
| Thyme                            | 3                            | EFSA (2018b)            | 0.83 STMR-RAC                               |        |         | 1.9 HR-RAC                                 |        |            |
| Basil and edible flowers        | 3                            | EFSA (2018b)            | 0.83 STMR-RAC                               |        |         | 1.9 HR-RAC                                 |        |            |
| Laurel/bay leaves               | 3                            | EFSA (2018b)            | 0.83 STMR-RAC                               |        |         | 1.9 HR-RAC                                 |        |            |
| Tarragon                         | 3                            | EFSA (2018b)            | 0.83 STMR-RAC                               |        |         | 1.9 HR-RAC                                 |        |            |
| Other herbs                     | 3                            | EFSA (2018b)            | 0.83 STMR-RAC                               |        |         |                                           |        |            |
| Beans (with pods)               | 0.6                          | EFSA (2018b)            | 0.06 STMR-RAC                               |        |         | 0.32 HR-RAC                                |        |            |
| Beans (without pods)            | 0.3                          | EFSA (2018b)            | 0.03 STMR-RAC                               |        |         | 0.18 HR-RAC                                |        |            |
| Peas (with pods)                | 0.6                          | EFSA (2018b)            | 0.06 STMR-RAC                               |        |         | 0.32 HR-RAC                                |        |            |
| Peas (without pods)             | 0.3                          | EFSA (2018b)            | 0.03 STMR-RAC                               |        |         | 0.18 HR-RAC                                |        |            |
| Asparagus                       | 0.8                          | EFSA (2018b)            | 0.26 STMR-RAC                               |        |         | 0.43 HR-RAC                                |        |            |
| Globe artichokes                | 0.7                          | EFSA (2018b)            | 0.11 STMR-RAC                               |        |         | 0.25 HR-RAC                                |        |            |
| Beans                           | 0.15                         | EFSA (2018b)            | 0.02 STMR-RAC                               |        |         | 0.02 STMR-RAC                               |        |            |
| Lentils                         | 0.15                         | EFSA (2018b)            | 0.02 STMR-RAC                               |        |         | 0.02 STMR-RAC                               |        |            |
| Peas                            | 0.15                         | EFSA (2018b)            | 0.02 STMR-RAC                               |        |         | 0.02 STMR-RAC                               |        |            |
| Lupins/lupini beans             | 0.15                         | EFSA (2018b)            | 0.02 STMR-RAC                               |        |         | 0.02 STMR-RAC                               |        |            |
| Other pulses                    | 0.15                         | EFSA (2018b)            | 0.02 STMR-RAC                               |        |         |                                           |        |            |
| Poppy seeds                     | 0.3                          | Proposed               | 0.03 STMR-RAC                               |        |         | 0.03 STMR-RAC                               |        |            |
| Rapeseeds/canola seeds          | 0.4                          | EFSA (2018b)            | 0.03 STMR-RAC                               |        |         | 0.03 STMR-RAC                               |        |            |
| Mustard seeds                   | 0.15                         | Proposed               | 0.03 STMR-RAC                               |        |         | 0.03 STMR-RAC                               |        |            |
| Cotton seeds                    | 0.7                          | EFSA (2018b)            | 0.09 STMR-RAC                               |        |         | 0.09 STMR-RAC                               |        |            |
| Olives for oil production       | 3                            | EFSA (2018b)            | 0.8 STMR-RAC                                |        |         | 0.8 STMR-RAC                                |        |            |
| Barley                          | 0.05                         | EFSA (2018b)            | 0.01 STMR-RAC                               |        |         | 0.01 STMR-RAC                               |        |            |
| Oat                             | 0.05                         | EFSA (2018b)            | 0.01 STMR-RAC                               |        |         | 0.01 STMR-RAC                               |        |            |
| Wheat                           | 0.1                          | EFSA (2018b)            | 0.01 STMR-RAC                               |        |         | 0.01 STMR-RAC                               |        |            |
| Cardamom                        | 0.1                          | Reg. (EU) 2019/88       | 0.1 MRL                                     |        |         | 0.1 MRL                                     |        |            |
| Peppercorn (black, green and white) | 0.1                        | Reg. (EU) 2019/88       | 0.1 MRL                                     |        |         | 0.1 MRL                                     |        |            |
| Commodity                          | Existing/ proposed MRL (mg/kg) | Source                                      | Chronic risk assessment | Acute risk assessment |
|-----------------------------------|-------------------------------|---------------------------------------------|-------------------------|----------------------|
| Horseradish, root spices          | 0.07                          | Reg. (EU) 2019/88                         | 0.07 MRL                | 0.07 MRL             |
| Swine: Muscle/meat                | 0.5                           | EFSA (2018b)                               | 0.02 STMR-RAC           | 0.27 HR-RAC          |
| Swine: Fat tissue                 | 0.3                           | EFSA (2018b)                               | 0.02 STMR-RAC           | 0.16 HR-RAC          |
| Swine: Liver                      | 1                             | EFSA (2018b)                               | 0.11 STMR-RAC           | 0.89 HR-RAC          |
| Swine: Kidney                     | 1                             | EFSA (2018b)                               | 0.11 STMR-RAC           | 0.89 HR-RAC          |
| Swine: Edible offals (other than liver and kidney) | 1 Reg. (EU) 2019/88 | 1 MRL                                      |                         | 1 MRL                |
| Bovine: Muscle/meat               | 0.5                           | EFSA (2018b)                               | 0.02 STMR-RAC           | 0.27 HR-RAC          |
| Bovine: Fat tissue                | 0.3                           | EFSA (2018b)                               | 0.02 STMR-RAC           | 0.16 HR-RAC          |
| Bovine: Liver                     | 1                             | EFSA (2018b)                               | 0.11 STMR-RAC           | 0.89 HR-RAC          |
| Bovine: Kidney                    | 1                             | EFSA (2018b)                               | 0.11 STMR-RAC           | 0.89 HR-RAC          |
| Bovine: Edible offals (other than liver and kidney) | 1 Reg. (EU) 2019/88 | 1 MRL                                      |                         | 1 MRL                |
| Sheep: Muscle/meat                | 0.5                           | EFSA (2018b)                               | 0.02 STMR-RAC           | 0.27 HR-RAC          |
| Sheep: Fat tissue                 | 0.3                           | EFSA (2018b)                               | 0.02 STMR-RAC           | 0.16 HR-RAC          |
| Sheep: Liver                      | 1                             | EFSA (2018b)                               | 0.11 STMR-RAC           | 0.89 HR-RAC          |
| Sheep: Kidney                     | 1                             | EFSA (2018b)                               | 0.11 STMR-RAC           | 0.89 HR-RAC          |
| Sheep: Edible offals (other than liver and kidney) | 1 Reg. (EU) 2019/88 | 1 MRL                                      |                         | 1 MRL                |
| Goat: Muscle/meat                 | 0.5                           | EFSA (2018b)                               | 0.02 STMR-RAC           | 0.27 HR-RAC          |
| Goat: Fat tissue                  | 0.3                           | EFSA (2018b)                               | 0.02 STMR-RAC           | 0.16 HR-RAC          |
| Goat: Liver                       | 1                             | EFSA (2018b)                               | 0.11 STMR-RAC           | 0.89 HR-RAC          |
| Goat: Kidney                      | 1                             | EFSA (2018b)                               | 0.11 STMR-RAC           | 0.89 HR-RAC          |
| Goat: Edible offals (other than liver and kidney) | 1 Reg. (EU) 2019/88 | 1 MRL                                      |                         | 1 MRL                |
| Equine: Muscle/meat               | 0.5                           | EFSA (2018b)                               | 0.02 STMR-RAC           | 0.27 HR-RAC          |
| Equine: Fat tissue                | 0.3                           | EFSA (2018b)                               | 0.02 STMR-RAC           | 0.16 HR-RAC          |
| Equine: Liver                     | 1                             | EFSA (2018b)                               | 0.11 STMR-RAC           | 0.89 HR-RAC          |
| Equine: Kidney                    | 1                             | EFSA (2018b)                               | 0.11 STMR-RAC           | 0.89 HR-RAC          |
| Equine: Edible offals (other than liver and kidney) | 1 Reg. (EU) 2019/88 | 1 MRL                                      |                         | 1 MRL                |
| Poultry: Muscle/meat              | 0.02                          | EFSA (2018b)                               | 0.02 LOQ                | 0.02 LOQ             |
| Poultry: Fat tissue               | 0.02                          | EFSA (2018b)                               | 0.02 LOQ                | 0.02 LOQ             |
| Poultry: Liver                    | 0.1                           | EFSA (2018b)                               | 0.1 LOQ                 | 0.1 LOQ              |
| Other farmed animals: Muscle/meat | 0.5                           | Reg. (EU) 2019/88                         | 0.3 MRL                 | 0.5 MRL              |
| Other farmed animals: Fat tissue  | 0.3                           | Reg. (EU) 2019/88                         | 0.3 MRL                 | 0.3 MRL              |
| Other farmed animals: Liver       | 1                             | Reg. (EU) 2019/88                         | 1 MRL                   | 1 MRL                |
| Commodity                                      | Existing/proposed MRL (mg/kg) | Source                 | Chronic risk assessment | Acute risk assessment          |
|-----------------------------------------------|-----------------------------|------------------------|-------------------------|--------------------------------|
|                                               |                             |                        | Input value (mg/kg)     | Input value (mg/kg)            | Comment | Comment<sup>(a)</sup> |
| Other farmed animals: Kidney                   | 1                           | Reg. (EU) 2019/88      | 1                       | MRL                            | 1       | MRL                  |
| Other farmed animals: Edible offals (other than liver and kidney) | 1                           | Reg. (EU) 2019/88      | 1                       | MRL                            | 1       | MRL                  |
| Milk: Cattle                                  | 0.2                         | EFSA (2018b)           | 0.02                    | STMR-RAC                       | 0.02    | STMR-RAC             |
| Milk: Sheep                                   | 0.2                         | EFSA (2018b)           | 0.02                    | STMR-RAC                       | 0.02    | STMR-RAC             |
| Milk: Goat                                    | 0.2                         | EFSA (2018b)           | 0.02                    | STMR-RAC                       | 0.02    | STMR-RAC             |
| Milk: Horse                                   | 0.2                         | EFSA (2018b)           | 0.02                    | STMR-RAC                       | 0.02    | STMR-RAC             |
| Milk: Others                                  | 0.2                         | EFSA (2018b)           | 0.02                    | STMR-RAC                       | 0.02    | STMR-RAC             |
| Eggs: Chicken                                 | 0.02                        | EFSA (2018b)           | 0.02                    | LOQ                            | 0.02    | LOQ                  |
| Eggs: Duck                                    | 0.02                        | EFSA (2018b)           | 0.02                    | LOQ                            | 0.02    | LOQ                  |
| Eggs: Goose                                   | 0.02                        | EFSA (2018b)           | 0.02                    | LOQ                            | 0.02    | LOQ                  |
| Eggs: Quail                                   | 0.02                        | EFSA (2018b)           | 0.02                    | LOQ                            | 0.02    | LOQ                  |
| Eggs: Others                                  | 0.02                        | EFSA (2018b)           | 0.02                    | LOQ                            | 0.02    | LOQ                  |
| Honey and other apiculture products           | 0.3                         | Proposed              | 0.05                    | STMR-RAC                       | 0.16    | HR-RAC               |

STMR-RAC: supervised trials median residue in raw agricultural commodity; HR-RAC: highest residue in raw agricultural commodity; PeF: Peeling factor.
(a): Input values for the commodities which are not under consideration for the acute risk assessment are reported in grey.
## Appendix E – Used compound codes

| Code/trivial name<sup>(a)</sup> | IUPAC name/SMILES notation/InChiKey<sup>(b)</sup> | Structural formula<sup>(c)</sup> |
|---------------------------------|---------------------------------------------------|---------------------------------|
| acetamiprid                     | (E)-N1-[(6-chloro-3-pyridyl)methyl]-N2-cyano-N1- methylacetamide  
Clc1ccc(CN(C)(C)\(\backslash\)N(C#N)cn1  
WCXDFDTOYPNIE-RIYZIHGNSA-N | ![Acetamiprid](attachment:image) |
| **N-desmethyl-acetamiprid** (IM-2-1) | (E)-N-[(6-chloro-3-pyridyl)methyl]-N'-cyanoacetamidine  
Clc1ccc(CN(C)(C)\(\backslash\)N(C#N)cn1  
AYEAUPRZTWBBF-UHFFFAOYSA-N | ![N-desmethyl-acetamiprid](attachment:image) |
| IM-1-4                          | 1-(6-chloro-3-pyridyl)-N-methylmethanamine  
Clc1ccc(CN(C)cn1  
XALCOJXGWJXWBL-UHFFFAOYSA-N | ![IM-1-4](attachment:image) |
| IM-1-5                          | N-[(6-chloro-3-pyridyl)methyl]-N-methylacetamidine  
Clc1ccc(CN(C)(C)=N)cn1  
JHZWQGRBAHYIZ-UHFFFAOYSA-N | ![IM-1-5](attachment:image) |
| 6-chloronicotinic acid (IC-0)   | 6-chloronicotinic acid  
OC(=O)c1cnc(C)c1  
UAWMVMPAYRWUFX-UHFFFAOYSA-N | ![6-chloronicotinic acid](attachment:image) |

IUPAC: International Union of Pure and Applied Chemistry; SMILES: simplified molecular-input line-entry system; InChiKey: International Chemical Identifier Key.

(a): The metabolite name in bold is the name used in the conclusion.

(b): ACD/Name 2020.2.1 ACD/Labs 2020 Release (File version N15E41, Build 116563, 15 June 2020).

(c): ACD/ChemSketch 2020.2.1 ACD/Labs 2020 Release (File version C25H41, Build 121153, 22 March 2021).