REASONED OPINION

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Review of the existing maximum residue levels for dazomet according to Article 12 of Regulation (EC) No 396/2005

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Abstract

According to Article 12 of Regulation (EC) No 396/2005, EFSA has reviewed the maximum residue levels (MRLs) currently established at European level for the pesticide active substance dazomet. To assess the occurrence of dazomet residues in plants, processed commodities, rotational crops and livestock, EFSA considered the conclusions derived in the framework of Directive 91/414/EEC as well as the European authorisations reported by Member States (including the supporting residues data). Based on the assessment of the available data, MRL proposals were derived and a consumer risk assessment was carried out. Although no apparent risk to consumers was identified, some information required by the regulatory framework was missing. Hence, the consumer risk assessment is considered indicative only and some MRL proposals derived by EFSA still require further consideration by risk managers.

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Keywords: dazomet, MRL review, Regulation (EC) No 396/2005, consumer risk assessment, carbamate, soil fumigant, nematicide, fungicide, herbicide, insecticide, methyl isothiocyanate (MITC), N,N'-dimethylthiourea (DMTU), metam

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Summary

Dazomet was included in Annex I to Directive 91/414/EEC on 1 June 2011 by Commission Directive 2011/53/EC, and has been deemed to be approved under Regulation (EC) No 1107/2009, in accordance with Commission Implementing Regulation (EU) No 540/2011, as amended by Commission Implementing Regulation (EU) No 541/2011. As the active substance was approved after the entry into force of Regulation (EC) No 396/2005 on 2 September 2008, the European Food Safety Authority (EFSA) is required to provide a reasoned opinion on the review of the existing maximum residue levels (MRLs) for that active substance in compliance with Article 12(1) of the aforementioned regulation. To collect the relevant pesticide residues data, EFSA asked Belgium, as the designated rapporteur Member State (RMS), to complete the Pesticide Residues Overview File (PROFile) and to prepare a supporting evaluation report. The PROFile and evaluation report provided by the RMS were made available to the Member States. A request for additional information was addressed to the Member States in the framework of a completeness check period, which was initiated by EFSA on 10 April 2017 and finalised on 12 June 2017. After having considered all the information provided, EFSA prepared a completeness check report which was made available to Member States on 2 May 2018.

Based on the conclusions derived by EFSA in the framework of Directive 91/414/EEC and the additional information provided by the RMS and Member States, EFSA prepared in August 2018 a draft reasoned opinion, which was circulated to Member States for consultation via a written procedure. Comments received by 20 September 2018 were considered during the finalisation of this reasoned opinion. The following conclusions are derived.

The metabolism of dazomet was investigated in primary plants in three different crops categories (fruit, root and leafy crops) following preplanting soil application. As these studies were performed with preplanting applications on soil, they were also deemed applicable to address the metabolism in rotational crops. Based on these studies and also considering the available data on the magnitude of residues in plant commodities, two separate residue definitions were proposed. The main one, methylisothiocyanate (MITC), is valid for enforcement and risk assessment purposes. Analytical methods for enforcement of MITC in the four main plant matrices are available. The second definition was proposed to consider the potential uptake of N,N'-dimethylthiourea (DMTU) in plant commodities. DMTU is relevant for risk assessment (with specific toxicological reference values), and can optionally be considered for enforcement purpose, noting that methods for enforcement might be available for high water content and high acid content commodities. The proposed residue definitions are applicable to all commodities subject to soil preplanting applications, hereby covering all the good agricultural practices (GAPs) reported in this review.

The nature of residues of MITC and DMTU in processed commodities was not addressed. This was considered as a concern for those commodities where residue levels above 0.1 mg/kg were observed in raw agricultural commodities.

The available data on the magnitude of residues in plant commodities allowed EFSA to derive (tentative) MRL proposals as well as risk assessment values for MITC in all commodities under evaluation, except for onions, broccoli, cauliflower, head cabbages beans and peas (with and without pods), asparagus, leek, hops and turnips tops where no data were available. For tree nuts, potatoes and other roots and tuber vegetables, radishes, tomatoes, aubergines, peppers, okra/lady’s fingers, cucurbits (with edible and inedible peel), lettuces and similar, leafy brassica, spinach, purslanes and chards the MRL proposals were derived on a tentative basis since essential data were missing (independent laboratory validation (ILV) for the analytical methods for enforcement for tree nuts and additional trials for the other crops).

In the absence of residue data for DMTU supporting supposing the GAPs of dazomet, MRL and risk assessment values could not be derived for this compound.

The exposure of livestock to MITC and DMTU were separately assessed in two different dietary burden (DB) calculations. These calculations took into consideration residue levels in plant commodities which result from the uses of dazomet and metam (another pesticide active substance precursor of MITC). While the calculated DBs were found to be below the trigger value of 0.1 mg/kg dry matter (DM) for all groups of livestock for MITC, it was highlighted that these results were underestimated as they could not consider the input of many potential significant contributors to the DB due to the absence of data for these commodities. For DMTU, the calculated DBs were found to be above the trigger value of 0.1 mg/kg DM for all groups of livestock. However, in the absence of finalised calculation of the DB and of any studies on nature and magnitude of residues in livestock commodities, MRL and risk assessment values were not derived for commodities of animal origin.
The consumer exposures to MITC and DMTU were separately assessed in two different calculations, both using revision 2 of EFSA Pesticide Residues Intake Model (PRIMo). For both compounds, chronic and acute exposure were assessed considering the authorised uses reported in the framework of this review as well as in the review of metam. For those commodities where data were insufficient to derive an MRL, EFSA considered the existing EU MRL for an indicative calculation.

For MITC, the highest chronic exposure was calculated for British toddlers, representing 15.2% of the acceptable daily intake (ADI), and the highest acute exposure was calculated for cucumbers (metam use), representing 66.3% of the acute reference dose (ARfD).

For DMTU, the indicative calculated exposure also remains under the toxicological reference values of this compound (28% ADI and 14.6% of the ARfD). However, it is highlighted that these results are potentially underestimated as additional intake possibly induced by all commodities for which MRLs could not be derived for DMTU (all dazomet uses as well certain GAPs reported in the metam review) could not be taken into account due to lack of data.
Review of the existing MRLs for dazomet

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Background

Regulation (EC) No 396/2005¹ (hereinafter referred to as 'the Regulation') establishes the rules governing the setting and the review of pesticide maximum residue levels (MRLs) at European level. Article 12(1) of that Regulation stipulates that the European Food Safety Authority (EFSA) shall provide, within 12 months from the date of the inclusion or non-inclusion of an active substance in Annex I to Directive 91/414/EEC² a reasoned opinion on the review of the existing MRLs for that active substance. As dazomet was included in Annex I to Council Directive 91/414/EEC on 1 June 2011 by means of Commission Directive 2011/53/EC³, and has been deemed to be approved under Regulation (EC) No 1107/2009⁴, in accordance with Commission Implementing Regulation (EU) No 540/2011⁵, as amended by Commission Implementing Regulation (EU) No 541/2011⁶, EFSA initiated the review of all existing MRLs for that active substance.

According to the legal provisions, EFSA shall base its reasoned opinion in particular on the relevant assessment report prepared under Directive 91/414/EEC. It should be noted, however, that, in the framework of Directive 91/414/EEC, only a few representative uses are evaluated, whereas MRLs set out in Regulation (EC) No 396/2005 should accommodate all uses authorised within the European Union (EU), and uses authorised in third countries that have a significant impact on international trade. The information included in the assessment report prepared under Directive 91/414/EEC is therefore insufficient for the assessment of all existing MRLs for a given active substance.

To gain an overview of the pesticide residues data that have been considered for the setting of the existing MRLs, EFSA developed the Pesticide Residues Overview File (PROFile). The PROFile is an inventory of all pesticide residues data relevant to the risk assessment and MRL setting for a given active substance. This includes data on:

- the nature and magnitude of residues in primary crops;
- the nature and magnitude of residues in processed commodities;
- the nature and magnitude of residues in rotational crops;
- the nature and magnitude of residues in livestock commodities;
- the analytical methods for enforcement of the proposed MRLs.

As the basis for the MRL review, Belgium, the designated rapporteur Member State (RMS) in the framework of Directive 91/414/EEC, was asked to complete the PROFile for dazomet and to prepare a supporting evaluation report. The PROFile and the supporting evaluation report were submitted to EFSA on 16 July 2012 (updated on 10 January 2014) and made available to the Member States (Belgium, 2014). A request for additional information was addressed to the Member States in the framework of a completeness check period which was initiated by EFSA on 10 April 2017 and finalised on 12 June 2017. Additional evaluation reports were submitted by Austria, Belgium, France, Greece, Hungary, Italy, Portugal, Spain and the European Union Reference Laboratories for Pesticide Residues (Austria, 2017; Belgium, 2017; EURL, 2017; France, 2017; Greece, 2017; Hungary, 2017; Italy, 2017; Portugal, 2017; Spain, 2017) and, after having considered all the information provided by RMS and Member States, EFSA prepared a completeness check report which was made available to all Member States on 2 May 2018. Further clarifications were sought from Member States via a written procedure in May 2018. Clarifications were provided in the form of an evaluation report submitted by Greece (Greece, 2018).

Based on the conclusions derived by EFSA in the framework of Directive 91/414/EEC and the additional information provided by the Member States, EFSA prepared in August 2018 a draft reasoned opinion.

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¹ Regulation (EC) No 396/2005 of the European 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.
² Council Directive 91/414/EEC of 15 July 1991 concerning the placing of plant protection products on the market. OJ L 230, 19.8.1991, p. 1–32. Repealed by Regulation (EC) No 1107/2009.
³ Commission Directive 2011/53/EC of 20 April 2011 amending Council Directive 91/414/EEC to include dazomet as active substance and amending Commission Decision 2008/934/EC Text with EEA relevance. OJ No L 105, 21.4.2011, p. 24-27.
⁴ 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. 1–50.
⁵ Commission Implementing Regulation (EU) No 540/2011 of 25 May 2011 implementing Regulation (EC) No 1107/2009 of the European Parliament and of the Council as regards the list of approved active substances. OJ L 153, 11.6.2011, p. 1–186.
⁶ Commission Implementing Regulation (EU) No 541/2011 of 1 June 2011 amending Implementing Regulation (EU) No 540/2011 implementing Regulation (EC) No 1107/2009 of the European Parliament and of the Council as regards the list of approved active substances. OJ L 153, 11.6.2011, p. 187–188.
opinion, which was submitted to Member States for commenting via a written procedure. All comments received by 20 September 2018 were considered by EFSA during the finalisation of the reasoned opinion.

The evaluation reports submitted by the RMS (Belgium, 2014, 2017) and the evaluation reports submitted by Member States Austria, France, Greece, Hungary, Italy, Portugal, Spain and the EURL (Austria, 2017; EURL, 2017; France, 2017; Greece, 2017, 2018; Hungary, 2017; Italy, 2017; Portugal, 2017; Spain, 2017) are considered as supporting documents to this reasoned opinion and, thus, are made publicly available.

In addition, key supporting documents to this reasoned opinion are the completeness check report (EFSA, 2018a) and the Member States consultation report (EFSA, 2018b). These reports are developed to address all issues raised in the course of the review, from the initial completeness check to the reasoned opinion. Also, the chronic and acute exposure calculations for all crops reported in the framework of this review performed using the EFSA Pesticide Residues Intake Model (PRIMo) (excel file) and the PROFile are key supporting documents and made publicly available as background documents to this reasoned opinion. Furthermore, a screenshot of the Report sheets of the different PRIMo is presented in Appendix C.

Terms of Reference

According to Article 12 of Regulation (EC) No 396/2005, EFSA shall provide a reasoned opinion on:

- the inclusion of the active substance in Annex IV to the Regulation, when appropriate;
- the necessity of setting new MRLs for the active substance or deleting/modifying existing MRLs set out in Annex II or III of the Regulation;
- the inclusion of the recommended MRLs in Annex II or III to the Regulation;
- the setting of specific processing factors as referred to in Article 20(2) of the Regulation.

The active substance and its use pattern

Dazomet is the ISO common name for 3,5-dimethyl-1,3,5-thiadiazinane-2-thione or tetrahydro-3,5-dimethyl-1,3,5-thiadiazine-2-thione (IUPAC).

Dazomet belongs to the group of carbamate compounds which are used as soil fumigants. Dazomet is broad spectrum soil fumigant used to control nematodes, fungi, insects and weed seeds. In the presence of adequate soil moisture, it rapidly degrades to produce methyl isothiocyanate (MITC), a gaseous substance which is responsible for the biological activity. MITC is also generated after the application of the active substance metam, which is also approved for use as pesticide in Europe. Therefore, the MRL review of metam is also carried out in parallel (EFSA, 2019).

The chemical structure of the active substance and its main metabolites are reported in Appendix F.

Dazomet was evaluated in the framework of Directive 91/414/EEC with Belgium designated as RMS and it was initially not included in Annex I of this Directive by Commission Decision 2008/934/EC.7 The representative uses evaluated in the peer review were indoor and outdoor application by soil incorporation before the planting of lettuce, strawberries and soil-grown tomatoes. Following re-submission, dazomet was included in Annex I by Commission Directive 2011/53/EU which entered into force on 01 June 2011 for use as nematicide, fungicide, herbicide and insecticide.

The EU MRLs for dazomet (as MITC resulting from the use of dazomet and metam) are established in Annex IIIA of Regulation (EC) No 396/2005 and codex maximum residue limits (CXLs) for dazomet (as dazomet or MITC) are not available. An overview of the MRL changes that occurred since the entry into force of the Regulation mentioned above is provided below (Table 1).

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7 Commission Decision of 5 December 2008 concerning the non-inclusion of certain active substances in Annex I to Council Directive 91/414/EEC and the withdrawal of authorisations for plant protection products containing these substances. OJ L 333, 11.12.2008, p. 11–14.
For the purpose of this MRL review, the critical uses of dazomet currently authorised within the EU have been collected by the RMS and reported in the PROFile. The additional good agricultural practices (GAPs) reported by Member States during the completeness check were also considered. The details of the authorised GAPs for active substance are given in Appendix A. The RMS did not report any use authorised in third countries that might have a significant impact on international trade.

Assessment

EFSA has based its assessment on the PROFile submitted by the RMS, the evaluation report accompanying the PROFile (Belgium, 2014), the draft assessment report (DAR) and its addenda prepared under Council Directive 91/414/EEC (Belgium, 2007, 2009, 2010), the conclusion on the peer review of the pesticide risk assessment of the active substances dazomet (EFSA, 2010) and metam (EFSA, 2011), the previous reasoned opinion on dazomet (EFSA, 2015) as well as the evaluation reports submitted during the completeness check (Austria, 2017; Belgium, 2017; EURL, 2017; France, 2017; Greece, 2017, 2018; Hungary, 2017; Italy, 2017; Portugal, 2017; Spain, 2017). The assessment is performed in accordance with the legal provisions of the uniform principles for evaluation and authorisation of plant protection products as set out in Commission Regulation (EU) No 546/20118 and the currently applicable guidance documents relevant for the consumer risk assessment of pesticide residues (European Commission, 1997a–g, 2000, 2010a,b, 2017; OECD, 2011, 2013).

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

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 dazomet in primary plants was investigated during the EU pesticides peer review in three different crops categories (fruit, root and leafy crops) following preplanting soil application (Belgium, 2007 considered in EFSA, 2010).

The study performed on strawberries used an application rate of 560 kg a.s./ha, which is largely covering the application rates of the GAPs reported in this review for fruit crops. It is noted that the studies performed on root and leafy crops are underdosed compared with the current authorised GAPs (40 kg a.s./ha instead of 482 kg a.s./ha). Nevertheless, the lower tested dose rate is expected to be compensated by a shorter period between application and planting used in the metabolism studies (15 days instead of 30 days) (Belgium, 2017).

At harvest, total radioactive residues (TRRs) were in the range of 0.12–0.61 mg eq./kg in edible parts of mature crops. Most of the radioactivity was released by solvent extraction (58–82% TRR), and was mainly composed of polar compounds that remained in the aqueous phases after partition (ca. 50% TRR). The characterisation of the radioactivity in the different extracts shows the residues to be composed of numerous compounds, all present in low proportions and at low levels (< 10% TRR; < 0.01 mg/kg).

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

| Procedure | Legal implementation | Remarks |
|-----------|----------------------|---------|
| MRL application | Regulation (EU) No 2016/1<sup>a</sup> | Reasoned opinion on the modification of the existing maximum residue levels (MRLs) for dazomet in several vegetables (EFSA, 2015) |

MRL: maximum residue level.

(a): Commission Regulation (EU) 2016/1 of 3 December 2015 amending Annexes II and III to Regulation (EC) No 396/2005 of the European Parliament and of the Council as regards maximum residue levels for bifenthrin, boscalid, cyazofamid, cyromazine, dazomet, dithiocarbamates, fluazifop-P, mepanipyrim, metrafenone, picroilan, propamocarb, pyridaben, pyriofenone, sulfoxaflor, tebuconazole, tebuconazole and thiram in or on certain products. OJ L 2, 5.1.2016, p. 1–62.
Dazomet, methylisothiocyanate (MITC), 1-methylthiourea (MMTU), N,N’-dimethylthiourea (DMTU) and 1,1,3-trimethylthiourea (TMTU) were tentatively identified at trace levels in certain crop parts (0.2–6% TRR). However, in most of the cases, this identification was not fully conclusive, and the presence of a metabolite detected in one chromatographic system was often not confirmed by using an alternative system.

1.1.2. Nature of residues in rotational crops

Some of the crops under consideration can be grown in rotation. However, the soil degradation studies demonstrated that the degradation rate of dazomet and its metabolite MITC is rapid; the maximum DT90lab was 4.6 days and 25.5 days, respectively (EFSA, 2010), which is far below the trigger value of 100 days. Thus, further studies investigating the nature and magnitude of residues in rotational crops are not required.

Furthermore, considering that the studies on primary crops (fruits, roots and leafy vegetables) were performed with preplanting applications on soil with 13 to 35 days between treatment and planting, these studies are deemed sufficient to also elucidate the nature of residue in rotational crops. As a consequence, the metabolism in rotational crops is considered to follow the same pathway as in primary crops.

1.1.3. Nature of residues in processed commodities

Studies on the nature of residues in processed commodities are not available. It is noted that the maximum residue levels of MITC found in cucumber (0.08 mg/kg) and spinach (0.09 mg/kg) are just below 0.1 mg/kg. Furthermore, data on the occurrence of DMTU in plant commodities are not available.

In the framework, a MRL application for dazomet assessed in parallel, the applicant was requested to submit a study investigating the effect of processing on the nature of MIC residues. Furthermore, it is noted that studies investigating the behaviour of MITC and DMTU through standard hydrolysis conditions are required in the framework of the MRL review of metam (see also EFSA, 2019 issued in parallel). Therefore, a data gap is identified on the nature of residues in processed commodities. This is applicable for both MITC and DMTU.

1.1.4. Methods of analysis in plants

MITC, the biologically active compound released by dazomet, can be enforced in high water and high acid content commodities by gas chromatography with mass spectrometry (GC-MS) method (BASF method 234/2) with a limit of quantification (LOQ) of 0.01 mg/kg. This method has been fully validated in the framework of the peer review of dazomet (EFSA, 2010) and metam (EFSA, 2011).

It is noted that validation data for this method were also provided for the enforcement of MITC in high oil content and dry commodities. This information was reported and assessed by the RMS in the framework of the peer review of dazomet (Belgium, 2007); an update was also provided in the evaluation report which was prepared for the present review (Belgium, 2014). There are indications that this GC-MS method (BASF method 234/2) can be used to enforce MITC in high oil content and dry commodities with an LOQ of 0.01 mg/kg. With regard to dry commodities, it is highlighted that the original method which presented poor recoveries was modified. A second extraction step of the distillate was added to improve the recoveries and use of a more specific detection system (gas chromatography with tandem mass spectrometry (GC-MS/MS) with two ion transitions instead of GC-MS with three ions) was implemented. The updated assessment demonstrated an acceptable validation of the method (Belgium, 2014). However, an independent laboratory validation (ILV) is still missing for high oil content and dry commodities (data gaps).

It is noted that the EURLs have recently generated validation data for the QuEChERS method using GC-MS/MS and analysing MITC in commodities of plant origin (high water, high acid, high oil content and dry commodities). According to EURLs, MITC can be enforced in the four main plant matrices (see MSC report; EFSA, 2018x) with a LOQ of 0.01 mg/kg. This could address the data gaps reported above.

It is noted that analytical methods for the enforcement of DMTU in high water and high acid content commodities with an LOQ of 0.01 mg/kg were not available in the framework of an MRL application which is currently under clock stop.

Since analytical methods are missing for matrices which are difficult to analyse such as hops, a data gap is set for this crop.
1.1.5. Stability of residues in plants

The storage stability of the metabolite MITC was investigated in the EU pesticide peer review of dazomet. These studies demonstrated the storage stability of MITC under deed frozen conditions for a period of 3 months in high water content commodities and high acid content commodities (EFSA, 2010). The available results indicate that MITC tends to degrade after 3 months of storage.

Regarding the compound DMTU, no storage stability studies are available.

1.1.6. Proposed residue definitions

The available metabolism studies suggested a complete degradation of dazomet into several compounds, none of them being identified as an appropriate marker for the residues.

It should be noted that dazomet is already almost completely degraded in soil, forming the biologically active compound MITC. Considering that this compound is expected to be predominant in soil, it is the most likely to be up-taken by plants. MITC was not found in significant proportions in the metabolism studies. However, the available residue trials indicate this compound to be retrieved in certain plant commodities (see Appendix B.1.2.1). Furthermore, MITC is more toxic than the parent compound (EFSA, 2010). Based on this information, it is concluded that MITC can be a marker for enforcement purpose and is also a relevant compound for risk assessment. Therefore, the residue for monitoring and risk assessment is defined as MITC, as previously concluded in the framework of the peer review (EFSA, 2010). Analytical methods for enforcement of MITC in the four main plant matrices are available. However, an ILV is missing for high oil content and dry commodities (data gaps). EUReLs indicated that QuEChERS method using GC-MS/MS can be used to enforce MITC in matrices with high water, high acid, high oil and dry content.

It is highlighted that the DMTU was tentatively identified at trace levels in the available metabolism studies. Based on these results, the peer review concluded that it was not necessary to consider this compound in the residue definition (EFSA, 2010). Nevertheless, in the context of the MRL of metam, it has been noted that although not present in the metabolism studies, this compound was retrieved at quantifiable levels in several residue trials performed with metam (EFSA, 2019). The source of DMTU observed in those residue trials was not fully elucidated. It can be due to the fact that DMTU is originally present in the technical material as a relevant impurity of metam, but it is not excluded that DMTU may also be released from the breakdown of the parent compound in soil. One hypothesis is that DMTU might be a soil degradation product formed by the reaction of MITC with methylamine. In this latter case, DMTU might also be formed after the use of dazomet. Therefore, although DMTU is not a relevant impurity of dazomet and despite the fact that this compound was not quantified in the metabolism studies, it is recommended to generate residue trials analysing for DMTU in plant commodities following application of dazomet according to GAPs (see also Section 1.2.1). In the meanwhile, it is proposed to consider DMTU in a separate residue definition for risk assessment as it was done in the MRL review for metam (EFSA, 2019). The toxicological end points of metam are applicable to DMTU⁹ (EFSA, 2011).

There is no apparent need to consider DMTU for enforcement purpose since MITC is a sufficient marker. However, depending on the risk manager’s needs, a separate residue definition for enforcement of DMTU could also be considered; this remains only an optional proposal. It is noted that methods for enforcement of DMTU in high water content and high acid content commodities might be available.

The proposed residue definitions apply to all commodities subject to soil preplanting applications. All GAPs under assessment are covered by the proposed residue definitions.

1.2. Magnitude of residues in plants

1.2.1. Magnitude of residues in primary crops

To assess the magnitude of dazomet residues (only MITC) resulting from the reported GAPs, EFSA considered all residue trials reported by the RMS in its evaluation report (Belgium, 2014), including residue trials evaluated in the framework of the peer review (Belgium, 2007, 2009 considered in EFSA, 2010) or in the framework of previous MRL application (EFSA, 2015).

⁹ The following end points were derived for metam: acceptable daily intake (ADI) of 0.001 mg/kg body weight (bw) per day and acute reference dose (ARfD) of 0.1 mg/kg bw (EFSA, 2011).
In all trials considered in this review, analyses were only carried out for MITC, whose results are reported in Appendix B.1.2.1. It is noted that no data are available for DMTU. As this compound may also be relevant for risk assessment, and optionally for enforcement (see also Section 1.1.6), it is recommended to generate residue trials analysing for DMTU in plant commodities following application of dazomet according to GAPs; this is further discussed below (see last paragraph of the present Section).

For all residue trials considered in this review, samples were analysed within 3 days after sampling. Decline of MITC during storage of the trial samples is therefore not expected.

The number of residue trials and extrapolations were evaluated in accordance with the European guidelines on comparability, extrapolation, group tolerances and data requirements for setting MRLs (European Commission, 2017).

Residue trials are not available to support the authorisations on onions, broccoli, cauliflower, head cabbages, beans and peas (with and without pods), asparagus, leek, hops and turnips tops. Therefore, MRL or risk assessment values (for both MITC and DMTU) could not be derived for these commodities and the following data gaps were identified:

- **Onions**: eight trials compliant with the southern outdoor GAP;
- **Broccoli, cauliflower**: four trials on each compliant with the southern outdoor GAP;
- **Head cabbages**: four trials compliant with the southern outdoor GAP;
- **Beans and peas (with pods)**: eight trials on beans and/or peas (with pods) compliant with the southern outdoor GAP;
- **Beans and peas (without pods)**: eight trials on beans and/or peas (without pods) compliant with the southern outdoor GAP. It is noted that in the case of very early application, trials on beans and/or peas (with pods) can be extrapolated to beans and peas without pods;
- **Asparagus**: four trials compliant with the southern outdoor GAP;
- **Leeks**: four trials compliant with the southern outdoor GAP;
- **Hops**: four trials compliant with the northern outdoor GAP;
- **Turnips tops**: four trials compliant with the northern outdoor GAP and four trials compliant with the southern outdoor GAP.

For potatoes, the number of residue trials reported is not compliant with the data requirements. For this crop, only tentative MRL and risk assessment values for MITC could be derived by EFSA and the following data gaps were identified:

- **Potatoes**: the critical GAP reported in the northern zone is restricted for use on potatoes for seed production (Belgium, 2017). Therefore, significant residue levels are not expected in the edible commodity (i.e. potatoes grown in the following generation). Although tentative MRL and risk assessment values can be proposed at the LOQ, EFSA is of the opinion that this should still be confirmed by a minimum number of residue trials. The critical GAP reported in the southern zone (Portugal, 2017) is not supported by trials. It is noted that six trials performed on carrots are available, which is not sufficient to derive a MRL for this commodity. Although tentative MRL and risk assessment values can be derived from the northern outdoor GAP (see above), eight residue trials performed on potatoes and compliant with the southern outdoor GAP are still required.

For all other crops, available residue trials are sufficient to derive MRL and risk assessment values for MITC, taking note of the following considerations:

- **Orchards (citrus fruits, pome fruits, and stone fruits), grapes, tree nuts, cane fruits and small fruits and berries, miscellaneous fruits**: residue trials are not available to support GAPs on these crops. However, considering that application is performed at an early growing stage of the trees (i.e. > 365 days before harvest), significant residues in final harvested fruits are not expected. Therefore, MRL and risk assessment values can be derived at the LOQ (0.01* mg/kg) and further residue trials are not required.
- **Strawberries**: the number of residue trials supporting the indoor–outdoor GAP is not compliant with the data requirements for this crop (five instead of eight). However, this is considered acceptable in this case because all results were below the LOQ and a robust MRL of 0.01* mg/kg can be derived based on outdoor (northern Europe (NEU)/southern Europe (SEU) EU) and indoor GAPs. Further residue trials are therefore not required.
Carrots, beetroots, celeriacs/turnip rooted celeries, horseradishes, Jerusalem artichokes, parsnips, parsley roots/Hamburg roots parsley, salsifies, swedes/rutabagas, turnips: the number of residue trials supporting the southern outdoor GAP is not compliant with the data requirements for this crop (six instead of eight). However, this is considered acceptable in this case because all results were below the LOQ and a robust MRL of 0.02 mg/kg can be derived based on the northern GAP (fully supported by data and apparently more critical). Further residue trials are therefore not required.

Tomatoes, peppers and all cucurbits (with edible and inedible peel): although MRL and risk assessment values can be derived from the indoor GAP (fully supported by data), eight trials on tomatoes and eight trials on cucumbers compliant with the northern GAP are still required.

Spinaches, purslanes, chards: it noted that three trials (instead of four) are available to support the southern GAP. However, this minor deficiency is deemed acceptable considering that five trials are available to support the northern GAP. A robust MRL can be derived based on a combined data set of northern and southern residue trials (EFSA, 2015). However, four trials compliant with the indoor GAP are still required.

It is noted that all the trials required in this section should provide analysis for MITC and DMTU (separately), in accordance with the two residue definitions derived under this review (see Section 1.1.6). Furthermore, when generating new residue trials, it is recommended to perform the residue analysis of both compounds as soon as possible after harvest, avoiding unacceptable possible degradation of the residues.

For all GAPs for which a no-residues situation is expected and/or was fully demonstrated for the MITC compound, the same situation is expected for DMTU; therefore, further trials analysing for DMTU are not deemed necessary for these GAPs. However, trials analysing for DMTU should be required for all the other GAPs:

- Carrots and other root and tuber vegetables: eight trials compliant with the northern outdoor GAP and eight trials compliant with the southern outdoor GAP;
- Radishes: four residue trials compliant with the northern outdoor GAP, four trials compliant with the southern outdoor GAP and four trials compliant with the indoor GAP;
- Tomatoes, aubergines, peppers, okra/lady’s fingers and all cucurbits (with edible and inedible peel): eight trials on tomatoes and eight trials on cucumbers compliant with the southern outdoor GAP as well as eight trials on tomatoes and 8 trials on cucumbers compliant with the indoor GAP;
- Lettuces and similar as well as leafy brassica (Chinese cabbages and kales): eight trials compliant with the northern outdoor GAP, eight trials compliant with the southern outdoor GAP and eight trials compliant with the indoor GAP;
- Spinaches, purslanes, chards: four trials compliant with the northern outdoor GAP and four trials compliant with the southern outdoor GAP.

1.2.2. Magnitude of residues in rotational crops

Studies investigating the magnitude of residues in rotational crops are not available and are not required (see Section 1.1.2).

1.2.3. Magnitude of residues in processed commodities

Studies investigating the magnitude of residues in processed commodities are not available and are not required.

If robust processing factors were to be required by risk managers, in particular for enforcement purposes, processing studies would be needed.

1.2.4. Proposed MRLs

The available data are considered sufficient to derive (tentative) MRL proposals as well as risk assessment values for MITC (main residue definition for enforcement) in all commodities under evaluation, except for onions, broccoli, cauliflower, head cabbages, beans and peas (with and without pods), asparagus, leek, hops and turnips tops where no data were available.

For tree nuts and potatoes, the MRL proposal is derived on a tentative basis since additional data (validation of the analytical method for enforcement for high content and dry commodities and
additional trials for potatoes) are required. Furthermore, considering the data gaps identified with regards to DMTU, the MRLs on roots and tuber vegetables, radishes, tomatoes, aubergines, peppers, okra/lady’s fingers, cucurbits (with edible and inedible peel), lettuces and similar, leafy brassica, spinach, purslanes and cherries are also considered as tentative. MRLs that could be derived from the dazomet uses are reported in Appendix B.4 (indicative only). Considering however that the final MRL recommendations should also consider MITC residues which can be released from another MITC precursor active substance (metam), the MRL reported in Appendix B.4 should only be considered for indicative purpose.

It is highlighted that in the absence of residue data for DMTU, MRL and risk assessment values could not be derived for this compound.

2. Residues in livestock

As two different residue definitions for risk assessment in plant commodities were derived in this review (see Section 1.1.6), two separate dietary burden (DB) calculations should be performed: one for the main residue definition MITC and another one for the second residue definition DMTU.

2.1. Methylisothiocyanate

The metabolite MITC, corresponding to the main residue definition for risk assessment in plant commodities, is released by dazomet as well as by metam. The MRL review of metam is carried out in parallel (EFSA, 2019). Both active substances are authorised for use on several crops that might be fed to livestock and, in order to perform a comprehensive DB calculation for this compound, MITC residues arising from both dazomet and metam should be taken into account.

Livestock DBs were calculated for different groups of livestock according to OECD guidance (OECD, 2013), which has now also been agreed upon at European level. For each relevant feed commodity, the input value for MITC is based on the highest residue level observed following the use of either dazomet or metam, assuming that the two active substances are not used together on the same crop. The input values for all relevant commodities are summarised in Appendix D.1.

The calculated DBs were found to be below the trigger value of 0.1 mg/kg dry matter (DM) for all groups of livestock. Therefore, MRL and risk assessment values in livestock commodities are not needed and were not derived. It is noted that studies investigating the nature and magnitude of residues in livestock are not available.

Nevertheless, the above result does not take into account the potential intake from many feed commodities for which risk assessment values could not be derived. In particular, this is the case for head cabbage and turnips tops from dazomet uses (see Section 1.2) and for many root crops (including important contributors such as potatoes, sugar beet and fodder beet) and sugar beet tops from metam uses (see EFSA, 2019). The calculated animal intake of MITC residues is therefore underestimated as it only represents a scenario where the critical GAPs authorised on the potential contributors listed above would be withdrawn. It is therefore recommended to Member States to take this information into account and to reconsider or withdraw these uses.

2.2. N,N’-dimethylthiourea

In the present review, no residue data were reported to address the possible residue levels of DMTU in plant commodities following use of dazomet. Therefore, a DB calculation considering the uses under review could not be performed.

Nevertheless, DMTU was found to be present in certain feed items following the use of metam as a pesticide active substance. An indicative calculation of the DB resulting from these data was performed in the reasoned opinion on the review the MRL for metam (EFSA, 2019). The details of these calculations are available in reasoned opinion on the review of the MRL for metam while the key figures of those calculations are reported in Appendix B.2 (results) and Appendix D.1 (input values) of the present opinion.

The calculated DBs were found to be above the trigger value of 0.1 mg/kg DM for all groups of livestock. Therefore, further investigation on the nature and magnitude of residues in livestock commodities should be necessary. However, in the absence of studies investigating the nature and magnitude of residues in livestock, it was not possible to address this point. Consequently, MRLs and risk assessment values for DMTU in livestock commodities could not be derived under this review.
Furthermore, it should be noted that this result is underestimated as it only represents a scenario where the critical GAPs of dazomet on feed commodities (potatoes and other roots crops, head cabbages and kales) and the ones of metam not supported by data (in particular potatoes, sugar beet and fodder beet) were not considered. It is therefore recommended to Member States to take this information into account and to reconsider or withdraw their uses on commodities that can be fed to livestock.

3. Consumer risk assessment

As two different residue definitions for risk assessment in plant commodities were derived in this review (see Section 1.1.6), two separate consumer exposure calculations should be performed: one for the main residue definition MITC and another one for the second residue definition DMTU. It is noted that different toxicological reference values were derived for these compounds.

3.1. Consumer risk assessment for MITC

The metabolite MITC, corresponding to the main residue definition for risk assessment in plant commodities, is released by dazomet as well as by metam. The MRL review of metam is carried out in parallel (EFSA, 2019). Hence, in order to perform a comprehensive consumer exposure calculation for this compound, MITC residues arising from both dazomet and metam should be taken into account.

Input values for the exposure calculations were derived in compliance with the decision tree reported in Appendix E. For those commodities where a (tentative) MRL could be derived by EFSA in the framework of this review or the one of metam (EFSA, 2019), input values were derived according to the internationally agreed methodologies (FAO, 2009). For each plant commodity, the input values for MITC is based on the highest residue level observed following the use of either dazomet or metam, assuming that the two active substances are not used together on the same crop. For a few commodities assessed in the present reasoned opinion as well as in the reasoned opinion of metam, data were not available to derive MRL and risk assessment values for MITC. For those commodities EFSA considered the existing EU MRL for an indicative calculation. All input values included in the exposure calculations are summarised in Appendix D.2.

Chronic and acute exposure calculations for all crops reported in the framework of this review were performed using revision 2 of the EFSA PRIMo (EFSA, 2007).

The exposures calculated were compared with the toxicological reference values for MITC, derived by EFSA (2010, 2011). The highest chronic exposure was calculated for British toddlers, representing 15.2% of the ADI, and the highest acute exposure was calculated for cucumbers (metam use; EFSA, 2019), representing 66.3% of the acute reference dose (ARfD). These calculations indicate that the uses assessed under this review result in a consumer exposure lower than the toxicological reference values of MITC, noting that major uncertainties remain due to the data gaps identified in the previous sections.

3.2. Consumer risk assessment for DMTU

In the present review, no residue data were reported to address the possible residue levels of DMTU in plant commodities following use of dazomet (see Section 1.2.1). Therefore, consumer exposure calculations considering the uses under review could not be performed.

Nevertheless, DMTU was found to be present in several plant commodities following the use of metam as a pesticide active substance. An indicative calculation of the consumer exposure resulting from these data was performed in the reasoned opinion on the review of the MRL for metam (EFSA, 2019). The details of these calculations are available in reasoned opinion on the review of the MRL for metam while the key figures of those calculations are reported in Appendix B.3.2 (results) and Appendix D.3 (input values) of the present opinion.

The indicative exposures calculated did not present exceedance of the toxicological reference values for DMTU (28% ADI and 14.6% of the ARfD). However, it is highlighted that these results are underestimated as additional intake possibly induced by dazomet uses as well as from commodities for which MRLs could not be derived in the review of metam (see details in EFSA, 2019) was not taken into account. An overall consumer exposure to DMTU could only be calculated if further data on DMTU

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10 The toxicological end points derived for metam were concluded to be applicable to DMTU: ADI of 0.001 mg/kg bw per day and ARfD of 0.1 mg/kg bw (EFSA, 2011).
in plant commodities would be available. In the meanwhile, no conclusion can be drawn regarding the consumer exposure to DMTU. Regarding the uses of dazomet on crops where data for DMTU were required (see Section 1.2.1) as well as on crops that can be fed to livestock (see Section 2.2), it is recommended to Member States to take this uncertainty into account and to eventually reconsider or withdraw these uses accordingly.

Conclusions

The metabolism of dazomet was investigated in primary plants in three different crops categories (fruit, root and leafy crops) following preplanting soil application. As these studies were performed with preplanting applications on soil, they were also deemed applicable to address the metabolism in rotational crops. Based on these studies and also considering the available data on the magnitude of residues in plant commodities, two separate residue definitions were proposed. The main one, MITC, is valid for enforcement and risk assessment purposes. Analytical methods for enforcement of MITC in the four main plant matrices are available. The second definition was proposed to consider the potential uptake of DMTU in plant commodities. DMTU is relevant for risk assessment (with specific toxicological reference values), and can optionally be considered for enforcement purpose, noting that methods for enforcement might be available for high water content and high acid content commodities. The proposed residue definitions are applicable to all commodities subject to soil preplanting applications, hereby covering all the GAPs reported in this review.

The nature of residues of MITC and DMTU in processed commodities was not addressed.

The available data on the magnitude of residues in plant commodities allowed EFSA to derive (tentative) MRL proposals as well as risk assessment values for MITC in all commodities under evaluation, except for onions, broccoli, cauliflower, head cabbages beans and peas (with and without pods), asparagus, leek, hops and turnips tops where no data were available. For tree nuts, potatoes and other roots and tuber vegetables, radishes, tomatoes, aubergines, peppers, okra/lady’s fingers, cucurbits (with edible and inedible peel), lettuces and similar, leafy brassica, spinach, purslanes and chards the MRL proposals were derived on a tentative basis since essential data were missing (ILV for the analytical methods for enforcement for tree nuts and additional trials for the other crops).

In the absence of residue data for DMTU supporting supposing the GAPs of dazomet, MRL and risk assessment values could not be derived for this compound.

The exposure of livestock to MITC and DMTU were separately assessed in two different DB calculations. These calculations took into consideration residue levels in plant commodities which result from the uses of dazomet and metam (another pesticide active substance precursor of MITC). While the calculated dietary burdens were found to be below the trigger value of 0.1 mg/kg DM for all groups of livestock for MITC, it was highlighted that these results were underestimated as they could not consider the input of many potential significant contributors to the DB due to the absence of data for these commodities. For DMTU, the calculated dietary burdens were found to be above the trigger value of 0.1 mg/kg DM for all groups of livestock. However, in the absence of finalised calculation of the DB and of any studies on nature and magnitude of residues in livestock commodities, MRL and risk assessment values were not derived for commodities of animal origin.

The consumer exposures to MITC and DMTU were separately assessed in two different calculations, both using revision 2 of EFSA PRIMo. For both compounds, chronic and acute exposure were assessed considering the authorised uses reported in the framework of this review as well as in the review of metam. For those commodities where data were insufficient to derive an MRL, EFSA considered the existing EU MRL for an indicative calculation. For MITC, the highest chronic exposure was calculated for British toddlers, representing 15.2% of the ADI, and the highest acute exposure was calculated for cucumbers (metam use), representing 66.3% of the ARfD.

For DMTU, the indicative calculated exposure also remains under the toxicological reference values of this compound (28% ADI and 14.6% of the ARfD). However, it is highlighted that these results are potentially underestimated as additional intake possibly induced by all commodities for which MRLs could not be derived for DMTU (all dazomet uses as well certain GAPs reported in the metam review) could not be taken into account due to lack of data.

Recommendations

MRL recommendations were derived for the main residue definition for enforcement: MITC. These MRL proposals were derived considering the GAPs authorised on metam and dazomet as these active
some active substances are both sources of MITC residues in plant commodities. For each plant commodity, the MRL proposal is based on the apparent most critical GAP between metam and dazomet, assuming that the two active substances are not used together on the same crop. The outcome of these comparisons is reported in the summary table below. For each commodity, it was explicitly reported from which substance the MRL proposal was derived.

All MRL values listed as ‘Recommended’ in the table are sufficiently supported by data and are therefore proposed for inclusion in Annex II to the Regulation. The remaining MRL values listed in the table are not recommended for inclusion in Annex II because they require further consideration by risk managers (see Table 2 footnotes for details). In particular, some tentative MRLs and existing EU MRLs reported for MITC need to be confirmed by the following data:

- Additional residue trials supporting GAPs of metam on the following crops: on strawberries, potatoes, sweet potatoes, yams, beetroot, carrots, celeriacs/turnips rooted celery, horseradishes, Jerusalem artichokes, parsnips, parsley roots/Hamburg roots parsley, radishes, salsifes, swedes, turnips, shallots, tomatoes, peppers, aubergines, okra/lady’s fingers, cucumbers, gherkins, courgettes, melons, pumpkins, watermelons, lamb’s lettuces, lettuces, escaroles/broad-leaved endives, cresses, land cresses, roman rocket/rucola, red mustards, baby leaf crops (including brassica species), spinach, purslances, chards/beet leaves, watercresses, witloofs/Belgian endives, herbal infusions from roots and sugar beet roots.
- Study investigating the nature of residues in processed commodities (standard hydrolysis conditions) for MITC (data gap relevant for the MRL on tomatoes, aubergines, cucumbers, gherkins and courgettes, derived from metam uses).
- ILV for the analytical methods for enforcement in high oil content and dry commodities (data gap relevant for the MRL on tree nuts, derived from dazomet uses).
- Fully validated analytical methods for the determination of MITC in herbal infusion from roots (data gap relevant for metam) and hops (data gap relevant for dazomet) are required.
- Additional residue trials supporting the GAPs of dazomet on potatoes, beetroot, carrots, celeriacs/turnips rooted celery, horseradishes, Jerusalem artichokes, parsnips, parsley roots/Hamburg roots parsley, radishes, salsifes, swedes, turnips, tomatoes, peppers, aubergines, okra/lady’s fingers, cucumbers, gherkins, courgettes, melons, pumpkins, watermelons, broccoli, cauliflower, head cabbages, Chinese cabbages, kales, lamb’s lettuces, lettuces, escaroles/broad-leaved endives, cresses, land cresses, roman rocket/rucola, red mustards, baby leaf crops (including Brassica species), spinach, purslances, chards/beet leaves, beans (with pods), beans (without pods), peas (with pods), peas (without pods), asparagus, leeks and hops.

It is also highlighted that the MRLs derived for onion and fresh herbs result from specific GAPs authorised for metam, whereas other GAPs reported for dazomet and metam were not fully supported by data. EFSA identified the following data gap which is not expected to impact on the validity of the MRLs derived but which might have an impact on national authorisations:

- Residue trials supporting GAPs of dazomet on onions;
- Residue trials supporting GAPs of metam on onions (NEU) and fresh herbs (NEU and indoor).

When generating the residue trials, it is recommended to perform the residue analysis of both compounds as soon as possible after harvest, avoiding unacceptable possible degradation of the residues.

If the above-reported data gaps are not addressed in the future, Member States are recommended to withdraw or modify the relevant authorisations at national level. It should also be noted that data are missing for numerous commodities that can be fed to livestock. Considering the only GAPs supported by data, there was no need to derive MRLs for MITC in livestock commodities. However, the calculated DBs do not reflect the situation arising from all authorised uses and is probably underestimated. Member States are therefore recommended to pay particular attention to the uses of dazomet and metam on feed items not supported by data. For dazomet, it concerns the GAPs authorised on head cabbage and turnips (tops) while for metam it concerns carrots, potatoes, swedes, turnips, sugar beet and fodder beet.

Considering that the occurrence of DMTU in plant commodities cannot be excluded and since this compound is toxicologically relevant, risk managers may also decide to set a second list of MRLs for this compound in the future. However, EFSA did not derive MRLs for DMTU because of the following concerns:
GAPs authorised on metam are partially supported by data for DMTU;
GAPs authorised on dazomet are not supported by data for DMTU;
Study investigating the nature of residues in processed commodities (standard hydrolysis conditions) for DMTU are not available;
Studies investigating the stability of DMTU during sample storage are not available;
The livestock exposure and the consumer risk assessment could not be finalised for DMTU (but the indicative calculations exceed the trigger value);
Studies on the nature and magnitude of residues of DMTU in livestock are not available;
Methods for enforcement of DMTU are only available for high water content and high acid content commodities; these methods were not yet assessed.

Table 2: Summary table

| Code number | Commodity              | Existing EU MRL (mg/kg) | Outcome of the review | MRL (mg/kg) | Comment                                      |
|-------------|------------------------|-------------------------|-----------------------|-------------|----------------------------------------------|
| Enforcement residue definition (existing): dazomet (methylisothiocyanate resulting from the use of dazomet and metam) |
| 110010      | Grapefruits            | 0.02*                   | Recommended (dazomet) | 0.01*       | (a)                                           |
| 110020      | Oranges                | 0.02*                   | Recommended (dazomet) | 0.01*       | (a)                                           |
| 110030      | Lemons                 | 0.02*                   | Recommended (dazomet) | 0.01*       | (a)                                           |
| 110040      | Limes                  | 0.02*                   | Recommended (dazomet) | 0.01*       | (a)                                           |
| 110050      | Mandarins              | 0.02*                   | Recommended (dazomet) | 0.01*       | (a)                                           |
| 120010      | Almonds                | 0.02*                   | Further considerations needed (dazomet) | 0.01*       | (b)                                           |
| 120020      | Brazil nuts            | 0.02*                   | Further considerations needed (dazomet) | 0.01*       | (b)                                           |
| 120030      | Cashew nuts            | 0.02*                   | Further considerations needed (dazomet) | 0.01*       | (b)                                           |
| 120040      | Chestnuts              | 0.02*                   | Further considerations needed (dazomet) | 0.01*       | (b)                                           |
| 120050      | Coconuts               | 0.02*                   | Further considerations needed (dazomet) | 0.01*       | (b)                                           |
| 120060      | Hazelnuts/cobnuts      | 0.02*                   | Further considerations needed (dazomet) | 0.01*       | (b)                                           |
| 120070      | Macadamias             | 0.02*                   | Further considerations needed (dazomet) | 0.01*       | (b)                                           |
| 120080      | Pecans                 | 0.02*                   | Further considerations needed (dazomet) | 0.01*       | (b)                                           |
| 120090      | Pine nut kernels       | 0.02*                   | Further considerations needed (dazomet) | 0.01*       | (b)                                           |
| 120100      | Pistachios             | 0.02*                   | Further considerations needed (dazomet) | 0.01*       | (b)                                           |
| 120110      | Walnuts                | 0.02*                   | Further considerations needed (dazomet) | 0.01*       | (b)                                           |
| 130010      | Apples                 | 0.02*                   | Recommended (metam/dazomet) | 0.01*       | (c)                                           |
| 130020      | Pears                  | 0.02*                   | Recommended (metam/dazomet) | 0.01*       | (c)                                           |
| 130030      | Quinces                | 0.02*                   | Recommended (dazomet) | 0.01*       | (a)                                           |
| 130040      | Medlars                | 0.02*                   | Recommended (dazomet) | 0.01*       | (a)                                           |
| 130050      | Loquats/Japanese medlars| 0.02*                  | Recommended (dazomet) | 0.01*       | (a)                                           |
| 140010      | Apricots               | 0.02*                   | Recommended (dazomet) | 0.01*       | (a)                                           |
| 140020      | Cherries (sweet)       | 0.02*                   | Recommended (metam/dazomet) | 0.01*       | (c)                                           |
| 140030      | Peaches                | 0.02*                   | Recommended (dazomet) | 0.01*       | (a)                                           |
| 140040      | Plums                  | 0.02*                   | Recommended (metam/dazomet) | 0.01*       | (c)                                           |
| 151010      | Table grapes           | 0.02*                   | Recommended (metam/dazomet) | 0.01*       | (c)                                           |
| 151020      | Wine grapes            | 0.02*                   | Recommended (metam/dazomet) | 0.01*       | (c)                                           |
| 152000      | Strawberries           | 0.02*                   | Further considerations needed (metam) | 0.03         | (d)                                           |
| 153010      | Blackberries           | 0.02*                   | Recommended (metam/dazomet) | 0.01*       | (c)                                           |
| 153020      | Dewberries             | 0.02*                   | Recommended (dazomet) | 0.01*       | (a)                                           |
| 153030      | Raspberries (red and yellow) | 0.02*             | Recommended (metam/dazomet) | 0.01*       | (c)                                           |
| 154010      | Blueberries            | 0.02*                   | Recommended (metam/dazomet) | 0.01*       | (c)                                           |
| 154020      | Cranberries            | 0.02*                   | Recommended (metam/dazomet) | 0.01*       | (c)                                           |
| 154030      | Currants (black, red and white) | 0.02*       | Recommended (metam/dazomet) | 0.01*       | (c)                                           |
| Code number | Commodity                                      | Existing EU MRL (mg/kg) | Outcome of the review MRL (mg/kg) | Comment                                |
|-------------|-----------------------------------------------|-------------------------|----------------------------------|----------------------------------------|
| 154040      | Gooseberries (green, red and yellow)          | 0.02*                   | 0.01*                            | Recommended (metam/dazomet)^(c)        |
| 154050      | Rose hips                                    | 0.02*                   | 0.01*                            | Recommended (dazomet)^(a)              |
| 154060      | Mulberries (black and white)                  | 0.02*                   | 0.01*                            | Recommended (dazomet)^(a)              |
| 154070      | Azaroles/Mediterranean medlars                | 0.02*                   | 0.01*                            | Recommended (dazomet)^(a)              |
| 154080      | Elderberries                                 | 0.02*                   | 0.01*                            | Recommended (dazomet)^(a)              |
| 161020      | Figs                                          | 0.02*                   | 0.01*                            | Recommended (dazomet)^(a)              |
| 161030      | Table olives                                  | 0.02*                   | 0.01*                            | Recommended (dazomet)^(a)              |
| 161040      | Kumquats                                      | 0.02*                   | 0.01*                            | Recommended (dazomet)^(a)              |
| 161060      | Kaki/Japanese persimmons                      | 0.02*                   | 0.01*                            | Recommended (dazomet)^(a)              |
| 162010      | Kiwi fruits (green, red, yellow)              | 0.02*                   | 0.01*                            | Recommended (dazomet)^(a)              |
| 162040      | Prickly pears/cactus fruits                   | 0.02*                   | 0.01*                            | Recommended (dazomet)^(a)              |
| 163010      | Avocados                                      | 0.02*                   | 0.01*                            | Recommended (dazomet)^(a)              |
| 163030      | Mangoes                                       | 0.02*                   | 0.01*                            | Recommended (dazomet)^(a)              |
| 163050      | Granate apples/pomegranates                   | 0.02*                   | 0.01*                            | Recommended (dazomet)^(a)              |
| 211000      | Potatoes                                      | 0.02*                   | 0.02                              | Further considerations needed (metam)^(e) |
| 212020      | Sweet potatoes                                | 0.02*                   | 0.02                              | Further considerations needed (metam)^(f) |
| 212030      | Yams                                          | 0.02*                   | 0.02                              | Further considerations needed (metam)^(f) |
| 213010      | Beetroots                                     | 0.02*                   | 0.02                              | Further considerations needed (dazomet)^(g) |
| 213020      | Carrots                                       | 0.02                    | 0.02                              | Further considerations needed (dazomet)^(g) |
| 213030      | Celeriacs/turnip rooted celeries              | 0.02*                   | 0.02                              | Further considerations needed (dazomet)^(g) |
| 213040      | Horseradishes                                 | 0.02*                   | 0.02                              | Further considerations needed (dazomet)^(g) |
| 213050      | Jerusalem artichokes                          | 0.02*                   | 0.02                              | Further considerations needed (dazomet)^(g) |
| 213060      | Parsnips                                      | 0.02*                   | 0.02                              | Further considerations needed (dazomet)^(g) |
| 213070      | Parsley roots/Hamburg roots parsley           | 0.02*                   | 0.02                              | Further considerations needed (dazomet)^(g) |
| 213080      | Radishes                                      | 0.05                    | 0.05                              | Further considerations needed (dazomet)^(g) |
| 213090      | Salsifies                                     | 0.02*                   | 0.02                              | Further considerations needed (dazomet)^(g) |
| 213100      | Swedes/rutabagas                              | 0.02*                   | 0.02                              | Further considerations needed (dazomet)^(g) |
| 213110      | Turnips                                       | 0.02*                   | 0.02                              | Further considerations needed (dazomet)^(g) |
| 220020      | Onions                                        | 0.02*                   | 0.15                              | Recommended (metam)^(i)                |
| 220030      | Shallots                                      | 0.02*                   | 0.02                              | Further considerations needed (metam)^(f) |
| 231010      | Tomatoes                                      | 0.1                     | 0.4                               | Further considerations needed (metam)^(f) |
| 231020      | Sweet peppers/bell peppers                    | 0.1                     | 0.1                               | Further considerations needed (dazomet)^(g) |
| 231030      | Aubergines/eggplants                          | 0.1                     | 0.4                               | Further considerations needed (metam)^(f) |
| 231040      | Okra/lady's fingers                           | 0.1                     | 0.1                               | Further considerations needed (dazomet)^(g) |
| 232010      | Cucumbers                                     | 0.1                     | 0.6                               | Further considerations needed (metam)^(f) |
| 232020      | Gherkins                                      | 0.1                     | 0.6                               | Further considerations needed (metam)^(f) |
| 232030      | Courgettes                                    | 0.1                     | 0.6                               | Further considerations needed (metam)^(f) |
| 233010      | Melons                                        | 0.1                     | 0.1                               | Further considerations needed (dazomet)^(g) |
| 233020      | Pumpkins                                      | 0.1                     | 0.1                               | Further considerations needed (dazomet)^(g) |
| 233030      | Watermelons                                   | 0.1                     | 0.1                               | Further considerations needed (dazomet)^(g) |
| 241010      | Broccoli                                      | 0.02*                   | 0.02                              | Further considerations needed (dazomet)^(j) |
| 241020      | Cauliflower                                   | 0.02*                   | 0.02                              | Further considerations needed (dazomet)^(j) |
| 242020      | Head cabbages                                 | 0.02*                   | 0.02                              | Further considerations needed (dazomet)^(j) |
| 243010      | Chinese cabbages/pe-tsai                      | 0.03                    | 0.03                              | Further considerations needed (dazomet)^(b) |
| Code number | Commodity                                      | Existing EU MRL (mg/kg) | Outcome of the review MRL (mg/kg) | Comment                                      |
|-------------|------------------------------------------------|-------------------------|-----------------------------------|----------------------------------------------|
| 243020      | Kales                                          | 0.03                    | 0.03                              | Further considerations needed (dazomet)<sup>(b)</sup> |
| 251010      | Lamb's lettuces/corn salads                    | 0.03                    | 0.03                              | Further considerations needed (dazomet)<sup>(k)</sup> |
| 251020      | Lettuces                                       | 0.03                    | 0.03                              | Further considerations needed (dazomet)<sup>(k)</sup> |
| 251030      | Escaroles/broad-leaved endives                 | 0.03                    | 0.03                              | Further considerations needed (dazomet)<sup>(k)</sup> |
| 251040      | Cresses and other sprouts and shoots           | 0.03                    | 0.03                              | Further considerations needed (dazomet)<sup>(k)</sup> |
| 251050      | Land cresses                                   | 0.03                    | 0.03                              | Further considerations needed (dazomet)<sup>(k)</sup> |
| 251060      | Roman rocket/rucolet                           | 0.03                    | 0.03                              | Further considerations needed (dazomet)<sup>(k)</sup> |
| 251070      | Red mustards                                   | 0.03                    | 0.03                              | Further considerations needed (dazomet)<sup>(k)</sup> |
| 251080      | Baby leaf crops (including brassica species)   | 0.03                    | 0.03                              | Further considerations needed (dazomet)<sup>(k)</sup> |
| 252010      | Spinaches                                      | 0.15                    | 0.15                              | Further considerations needed (dazomet)<sup>(g)</sup> |
| 252020      | Purslanes                                      | 0.15                    | 0.15                              | Further considerations needed (dazomet)<sup>(k)</sup> |
| 252030      | Chards/beet leaves                             | 0.15                    | 0.15                              | Further considerations needed (dazomet)<sup>(k)</sup> |
| 254000      | Watercresses                                   | 0.02                    | 0.02                              | Further considerations needed (metam)<sup>(f)</sup> |
| 255000      | Witloofs/Belgian endives                       | 0.02*                   | 0.02                              | Further considerations needed (metam)<sup>(f)</sup> |
| 256010      | Chervil                                        | 0.02*                   | 0.01*                             | Recommended (metam)<sup>(l)</sup> |
| 256020      | Chives                                         | 0.02*                   | 0.01*                             | Recommended (metam)<sup>(l)</sup> |
| 256030      | Celery leaves                                  | 0.02*                   | 0.01*                             | Recommended (metam)<sup>(l)</sup> |
| 256040      | Parsley                                        | 0.02*                   | 0.01*                             | Recommended (metam)<sup>(l)</sup> |
| 256050      | Sage                                           | 0.02*                   | 0.01*                             | Recommended (metam)<sup>(l)</sup> |
| 256060      | Rosemary                                       | 0.02*                   | 0.01*                             | Recommended (metam)<sup>(l)</sup> |
| 256070      | Thyme                                          | 0.02*                   | 0.01*                             | Recommended (metam)<sup>(l)</sup> |
| 256080      | Basil and edible flowers                       | 0.02*                   | 0.01*                             | Recommended (metam)<sup>(l)</sup> |
| 256090      | Laurel/bay leaf                                | 0.02*                   | 0.01*                             | Recommended (metam)<sup>(l)</sup> |
| 256100      | Tarragon                                       | 0.02*                   | 0.01*                             | Recommended (metam)<sup>(l)</sup> |
| 260010      | Beans (with pods)                              | 0.02*                   | 0.02                              | Further considerations needed (dazomet)<sup>(j)</sup> |
| 260020      | Beans (without pods)                           | 0.02*                   | 0.02                              | Further considerations needed (dazomet)<sup>(j)</sup> |
| 260030      | Peas (with pods)                               | 0.02*                   | 0.02                              | Further considerations needed (dazomet)<sup>(j)</sup> |
| 260040      | Peas (without pods)                            | 0.02*                   | 0.02                              | Further considerations needed (dazomet)<sup>(j)</sup> |
| 270010      | Asparagus                                      | 0.02*                   | 0.02                              | Further considerations needed (dazomet)<sup>(j)</sup> |
| 270060      | Leeks                                         | 0.02*                   | 0.02                              | Further considerations needed (dazomet)<sup>(j)</sup> |
| 633000      | Herbal infusions from roots                    | 0.02*                   | 0.02                              | Further considerations needed (metam)<sup>(f)</sup> |
| 700000      | Hops                                          | 0.02*                   | 0.02                              | Further considerations needed (dazomet)<sup>(j)</sup> |
| 900010      | Sugar beet roots                               | 0.02*                   | 0.02                              | Further considerations needed (metam)<sup>(f)</sup> |
| –           | Other commodities of plant and/or animal origin| See Reg. 2016/1         | –                                 | Further considerations needed<sup>(m)</sup> |

MRL: maximum residue level; GAP: Good Agricultural Practice.

*: Indicate that the MRL is set at the limit of quantification

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

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

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

(d): Tentative MRL is derived from a GAP on metam evaluated at EU level, which is not fully supported by data but for which no risk to consumers was identified (the GAP authorised for dazomet is fully supported by data but leads to lower residue levels); no CXL is available (combination E-I in Appendix E).

(e): GAP on metam evaluated at EU level is not supported by data but no risk to consumers was identified for the existing EU MRL (the GAP authorised on dazomet is also not supported by data); no CXL is available (combination C-I in Appendix E).
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**Abbreviations**

- a.i.: active ingredient
- 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 residue definition to risk assessment residue definition
- CXL: codex maximum residue limit
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DAR draft assessment report
DAT days after treatment
DB dietary burden
DM dry matter
DMTU N,N’-dimethylthiourea
DT₉₀ period required for 90% dissipation (define method of estimation)
EMS evaluating Member State
eq residue expressed as a.s. equivalent
EURLs European Union Reference Laboratories for Pesticide Residues (former CRLs)
FAO Food and Agriculture Organization of the United Nations
GAP Good Agricultural Practice
GC–MS gas chromatography with mass spectrometry
GC–MS/MS gas chromatography with tandem mass spectrometry
GR granule
HR highest residue
IEDI international estimated daily intake
IESTI international estimated short-term intake
ILV independent laboratory validation
InChiKey International Chemical Identifier Key
ISO International Organisation for Standardization
IUPAC International Union of Pure and Applied Chemistry
LC–MS/MS liquid chromatography with tandem mass spectrometry
LOQ limit of quantification
MG microgranule
MITC methylisothiocyanate
MMTU 1-methylthiourea
Mo monitoring
MRL maximum residue level
MS Member States
NEU northern European Union
OECD Organisation for Economic Co-operation and Development
PBI plant-back interval
PF processing factor
PHI preharvest interval
PRIMo (EFSA) Pesticide Residues Intake Model
PROFile (EFSA) Pesticide Residues Overview File
QuEChERS Quick, Easy, Cheap, Effective, Rugged, and Safe (analytical method)
RA risk assessment
RD residue definition
RMS rapporteur Member State
SANCO Directorate-General for Health and Consumers
SEU southern European Union
SMILES simplified molecular-input line-entry system
STMR supervised trials median residue
TMTU 1,1,3-trimethylthiourea
TRR total radioactive residue
## Appendix A – Summary of authorised uses considered for the review of MRLs

### A.1. Authorised outdoor uses in northern EU

| Crop and/or situation | MS or country | F or G (a) | Pests or group of pests controlled | Preparation | Application | Application rate per treatment | Remarks |
|-----------------------|---------------|-----------|-----------------------------------|-------------|-------------|--------------------------------|---------|
|                       |               |           |                                   | Type(b) Conc. a.s. | Method kind | Range of growth stages & season(c) | Number min-max | Interval between application (min) | a.s./hL min-max | Water L/ha min-max | Rate and unit | PHI (days)(d) |         |
| Almonds               | AT            | F         | Nematodes, soil fungi, soil insects | MG 965 g/kg | Soil treatment – general (see also comment field) | 0 1 | – | – | – | 482.5 kg a.i./ha | n.a. | 30 days = minimum waiting period before planting or sowing; product is incorporated at 20 cm |
| Hazelnuts             | AT            | F         | Nematodes, soil fungi, soil insects | MG 965 g/kg | Soil treatment – general (see also comment field) | 0 1 | – | – | – | 482.5 kg a.i./ha | n.a. | 30 days = minimum waiting period before planting or sowing; product is incorporated at 20 cm |
| Walnuts               | AT            | F         | Nematodes, soil fungi, soil insects | MG 965 g/kg | Soil treatment – general (see also comment field) | 0 1 | – | – | – | 482.5 kg a.i./ha | n.a. | 30 days = minimum waiting period before planting or sowing; product is incorporated at 20 cm |
| Apples                | AT            | F         | Nematodes, soil fungi, soil insects | MG 965 g/kg | Soil treatment – general (see also comment field) | 0 1 | – | – | – | 482.5 kg a.i./ha | n.a. | 30 days = minimum waiting period before planting or sowing; product is incorporated at 20 cm |
## Crop and/or situation | MS or country | F, G or I | Pests or group of pests controlled | Preparation | Application | Application rate per treatment | PHI (days)| Remarks
--- | --- | --- | --- | --- | --- | --- | --- | ---

**Pears**<br>A T | F | Nematodes, soil fungi, soil insects | MG 965 g/kg | Soil treatment – general (see also comment field) | 0 | 1 | – | – | 482.5 kg a.i./ha | n.a. 30 days = minimum waiting period before planting or sowing; product is incorporated at 20 cm**

**Quinces**<br>A T | F | Nematodes, soil fungi, soil insects | MG 965 g/kg | Soil treatment – general (see also comment field) | 0 | 1 | – | – | 482.5 kg a.i./ha | n.a. 30 days = minimum waiting period before planting or sowing; product is incorporated at 20 cm**

**Medlars**<br>A T | F | Nematodes, soil fungi, soil insects | MG 965 g/kg | Soil treatment – general (see also comment field) | 0 | 1 | – | – | 482.5 kg a.i./ha | n.a. 30 days = minimum waiting period before planting or sowing; product is incorporated at 20 cm**

**Loquats**<br>A T | F | Nematodes, soil fungi, soil insects | MG 965 g/kg | Soil treatment – general (see also comment field) | 0 | 1 | – | – | 482.5 kg a.i./ha | n.a. 30 days = minimum waiting period before planting or sowing; product is incorporated at 20 cm**

**Apricots**<br>A T | F | Nematodes, soil fungi, soil insects | MG 965 g/kg | Soil treatment – general (see also comment field) | 0 | 1 | – | – | 482.5 kg a.i./ha | n.a. 30 days = minimum waiting period before planting or sowing; product is incorporated at 20 cm**
| Crop and/or situation | MS or country | Pests or group of pests controlled | Preparation | Application | Application rate per treatment | PHI (days) | Remarks |
|-----------------------|--------------|-----------------------------------|-------------|-------------|-------------------------------|------------|---------|
|                       |              |                                   | Type(b) Conc. a.s. Method kind Range of growth stages & season(c) Number min-max Interval between application (min) a.s./ hL min-max Water L/ha min-max Rate and unit |             |                  |                     |            |         |
| Cherries              | AT F         | Nematodes, soil fungi, soil insects MG 965 g/kg Soil treatment general (see also comment field) | 0 1 – – 482.5 kg a.i./ha | n.a. 30 days = minimum waiting period before planting or sowing; product is incorporated at 20 cm |
| Peaches               | AT F         | Nematodes, soil fungi, soil insects MG 965 g/kg Soil treatment general (see also comment field) | 0 1 – – 482.5 kg a.i./ha | n.a. 30 days = minimum waiting period before planting or sowing; product is incorporated at 20 cm |
| Plums                 | AT F         | Nematodes, soil fungi, soil insects MG 965 g/kg Soil treatment general (see also comment field) | 0 1 – – 482.5 kg a.i./ha | n.a. 30 days = minimum waiting period before planting or sowing; product is incorporated at 20 cm |
| Table grapes          | AT F         | Nematodes, soil fungi, soil insects MG 965 g/kg Soil treatment general (see also comment field) | 0 1 – – 482.5 kg a.i./ha | n.a. 30 days = minimum waiting period before planting or sowing; product is incorporated at 20 cm |
| Wine grapes           | AT F         | Nematodes, soil fungi, soil insects MG 965 g/kg Soil treatment general (see also comment field) | 0 1 – – 482.5 kg a.i./ha | n.a. 30 days = minimum waiting period before planting or sowing; product is incorporated at 20 cm |
| Crop and/or situation | MS or country | F G or I(a) | Pests or group of pests controlled | Preparation | Application | Application rate per treatment | PHI (days)(d) | Remarks |
|---------------------|--------------|-----------|-----------------------------------|-------------|-------------|-----------------------------|--------------|---------|
| Strawberries        | AT           | F         | Nematodes, soil fungi, soil insects | MG 965 g/kg | Soil treatment – general (see also comment field) | 0 1 | – | – | 482.5 kg a.i./ha | n.a. | 30 days = minimum waiting period before planting or sowing; product is incorporated at 20 cm |
| Blackberries        | AT           | F         | Nematodes, soil fungi, soil insects | MG 965 g/kg | Soil treatment – general (see also comment field) | 0 1 | – | – | 482.5 kg a.i./ha | n.a. | 30 days = minimum waiting period before planting or sowing; product is incorporated at 20 cm |
| Dewberries          | AT           | F         | Nematodes, soil fungi, soil insects | MG 965 g/kg | Soil treatment – general (see also comment field) | 0 1 | – | – | 482.5 kg a.i./ha | n.a. | 30 days = minimum waiting period before planting or sowing; product is incorporated at 20 cm |
| Raspberries         | AT           | F         | Nematodes, soil fungi, soil insects | MG 965 g/kg | Soil treatment – general (see also comment field) | 0 1 | – | – | 482.5 kg a.i./ha | n.a. | 30 days = minimum waiting period before planting or sowing; product is incorporated at 20 cm |
| Blueberries         | AT           | F         | Nematodes, soil fungi, soil insects | MG 965 g/kg | Soil treatment – general (see also comment field) | 0 1 | – | – | 482.5 kg a.i./ha | n.a. | 30 days = minimum waiting period before planting or sowing; product is incorporated at 20 cm |
| Crop and/or situation | MS or country | FG or I(a) | Pests or group of pests controlled | Preparation | Application | Application rate per treatment | PHI (days)(d) | Remarks |
|----------------------|---------------|------------|-----------------------------------|-------------|------------|--------------------------------|--------------|---------|
|                      |               |           |                                   |             | Method kind | Range of growth stages & season(c) | Number min-max | Interval between application (min) | a.s./hL min-max | Water L/ha min-max | Rate and unit |               |
| Cranberries          | AT            | F         | Nematodes, soil fungi, soil insects | MG 965 g/kg | Soil treatment – general (see also comment field) | 0 1 | – | – | – | 482.5 kg a.i./ha | n.a. | 30 days = minimum waiting period before planting or sowing; product is incorporated at 20 cm |
| Currants             | AT            | F         | Nematodes, soil fungi, soil insects | MG 965 g/kg | Soil treatment – general (see also comment field) | 0 1 | – | – | – | 482.5 kg a.i./ha | n.a. | 30 days = minimum waiting period before planting or sowing; product is incorporated at 20 cm |
| Gooseberries         | AT            | F         | Nematodes, soil fungi, soil insects | MG 965 g/kg | Soil treatment – general (see also comment field) | 0 1 | – | – | – | 482.5 kg a.i./ha | n.a. | 30 days = minimum waiting period before planting or sowing; product is incorporated at 20 cm |
| Rose hips            | AT            | F         | Nematodes, soil fungi, soil insects | MG 965 g/kg | Soil treatment – general (see also comment field) | 0 1 | – | – | – | 482.5 kg a.i./ha | n.a. | 30 days = minimum waiting period before planting or sowing; product is incorporated at 20 cm |
| Mulberries           | AT            | F         | Nematodes, soil fungi, soil insects | MG 965 g/kg | Soil treatment – general (see also comment field) | 0 1 | – | – | – | 482.5 kg a.i./ha | n.a. | 30 days = minimum waiting period before planting or sowing; product is incorporated at 20 cm |
| Crop and/or situation | MS or country | F G or I(a) | Pests or group of pests controlled | Preparation | Application | Application rate per treatment | PHI (days)(d) | Remarks |
|-----------------------|--------------|-------------|-----------------------------------|-------------|-------------|-------------------------------|--------------|---------|
| Azaroles              | AT           | F           | Nematodes, soil fungi, soil insects | MG 965 g/kg | Soil treatment – general (see also comment field) | 0 1 – – 482.5 kg a.i./ha | n.a. | 30 days = minimum waiting period before planting or sowing; product is incorporated at 20 cm |
| Elderberries         | AT           | F           | Nematodes, soil fungi, soil insects | MG 965 g/kg | Soil treatment – general (see also comment field) | 0 1 – – 482.5 kg a.i./ha | n.a. | 30 days = minimum waiting period before planting or sowing; product is incorporated at 20 cm |
| Potatoes              | BE           | F           | Nematodes, soil fungi              | MG 950 g/kg | Soil treatment – general (see also comment field) | 0 1 – – 475 kg a.i./ha | n.a. | 49 days = minimum waiting period before planting or sowing; Max 1 application every 3 years. Incorporated in 20 cm of soil. Potatoes for seed production only |
| Beetroots             | BE           | F           | Nematodes, soil fungi, soil insects | MG 965 g/kg | Soil treatment – general (see also comment field) | 0 1 – – 482.5 kg a.i./ha | n.a. | Incorporation to soil (20 cm depth) followed by 35 days soil coverage period. Preplanting treatment (at least 45 days before planting). Use assessed in on-going MRL application |
| Crop and/or situation | MS or country | F G or I(a) | Pests or group of pests controlled | Preparation | Application | Application rate per treatment | PHI (days)(d) | Remarks |
|-----------------------|--------------|-------------|-----------------------------------|-------------|-------------|---------------------------------|---------------|---------|
|                       |              |             |                                   | Type(b)     | Conc. a.s.  | Method kind                      | Rate and unit |         |
| Carrots               | AT, HU       | F           | Nematodes, soil fungi, soil insects | MG         | 965 g/kg   | Soil treatment – general (see also comment field) | 482.5 kg a.i./ha | n.a.  |
|                       |              |             |                                   |             |            | 0 1                              |               | 30 days = minimum waiting period before planting or sowing; product is incorporated at 20 cm |
| Celeriacs             | BE           | F           | Nematodes, soil fungi, soil insects | MG         | 965 g/kg   | Soil treatment – general (see also comment field) | 482.5 kg a.i./ha | n.a.  |
|                       |              |             |                                   |             |            | 0 1                              |               | Incorporation to soil (20 cm depth) followed by 35 days soil coverage period. Preplanting treatment (at least 45 days before planting). Use assessed in on-going MRL application |
| Horseradishes        | BE           | F           | Nematodes, soil fungi, soil insects | MG         | 965 g/kg   | Soil treatment – general (see also comment field) | 482.5 kg a.i./ha | n.a.  |
|                       |              |             |                                   |             |            | 0 1                              |               | Incorporation to soil (20 cm depth) followed by 35 days soil coverage period. Preplanting treatment (at least 45 days before planting). Use assessed in on-going MRL application |
| Crop and/or situation | MS or country | FG or I(a) | Pests or group of pests controlled | Preparation | Application | Application rate per treatment | PHI (days)(d) | Remarks |
|-----------------------|---------------|------------|-----------------------------------|-------------|-------------|--------------------------------|---------------|---------|
| Jerusalem artichokes  | BE            | F          | Nematodes, soil fungi, soil insects | MG 965 g/kg | Soil treatment – general (see also comment field) | 0 1 – – – | 482.5 kg a.i./ha | n.a. | Incorporation to soil (20 cm depth) followed by 35 days soil coverage period. Preplanting treatment (at least 45 days before planting). Use assessed in on-going MRL application. |
| Parsnips              | BE            | F          | Nematodes, soil fungi, soil insects | MG 965 g/kg | Soil treatment – general (see also comment field) | 0 1 – – – | 482.5 kg a.i./ha | n.a. | Incorporation to soil (20 cm depth) followed by 35 days soil coverage period. Preplanting treatment (at least 45 days before planting). Use assessed in on-going MRL application. |
| Crop and/or situation | MS or country | FGocumentary | Pests or group ofpests controlled | Preparation | Application | Application rate per treatment | PHI (days) | Remarks |
|-----------------------|---------------|--------------|-----------------------------------|-------------|-------------|-------------------------------|------------|---------|
|                       |               |              |                                   | Type(b)     | Conc. a.s.  | Range of growth stages & season(c) | Number min-max | Interval between application (min) | a.s./hl min-max | Water L/ha min-max | Rate and unit | |
| Parsley roots          | BE            | F            | Nematodes, soil fungi, soil insects | MG          | 965 g/kg   | Soil treatment – general (see also comment field) | 0           | 1                                  | –          | –                   | –             | – 482.5 kg a.i./ha | n.a.          | Incorporation to soil (20 cm depth) followed by 35 days soil coverage period. Preplanting treatment (at least 45 days before planting). Use assessed in on-going MRL application. |
| Radishes              | AT, HU        | F            | Nematodes, soil fungi, soil insects | MG          | 965 g/kg   | Soil treatment – general (see also comment field) | 0           | 1                                  | –          | –                   | –             | – 482.5 kg a.i./ha | n.a.          | 30 days = minimum waiting period before planting or sowing; product is incorporated at 20 cm |
| Salsifies             | BE            | F            | Nematodes, soil fungi, soil insects | MG          | 965 g/kg   | Soil treatment – general (see also comment field) | 0           | 1                                  | –          | –                   | –             | – 482.5 kg a.i./ha | n.a.          | Incorporation to soil (20 cm depth) followed by 35 days soil coverage period. Preplanting treatment (at least 45 days before planting). Use assessed in on-going MRL application.
| Crop and/or situation | MS or country | MS or group of pests controlled | Preparation | Application | Application rate per treatment | PHI (days) | Remarks |
|-----------------------|---------------|----------------------------------|-------------|-------------|-----------------------------|------------|---------|
|                       |               |                                  | Type(b) | Conc. a.s. | Method kind | Range of growth stages & season(c) | Number min-max | Interval between application (min) | a.s./ hL/min-max | Water L/ha min-max | Rate and unit ||
| **Swedes**            | BE F          | Nematodes, soil fungi, soil insects | MG       | 965 g/kg | Soil treatment – general (see also comment field) | 0 | 1 | – | – | – | n.a. | Incorporation to soil (20 cm depth) followed by 35 days soil coverage period. Preplanting treatment (at least 45 days before planting). Use assessed in on-going MRL application |
| **Turnips**           | BE F          | Nematodes, soil fungi, soil insects | MG       | 965 g/kg | Soil treatment – general (see also comment field) | 0 | 1 | – | – | – | n.a. | Incorporation to soil (20 cm depth) followed by 35 days soil coverage period. Preplanting treatment (at least 45 days before planting). Use assessed in on-going MRL application |
| Crop and/or situation | MS or country | FGI or | Pests or group of pests controlled | Preparation | Application | Application rate per treatment | PHI (days) | Remarks |
|-----------------------|--------------|--------|-----------------------------------|-------------|------------|-------------------------------|------------|---------|
| Tomatoes HU F         | Nematodes, insects, soil fungi weeds | GR 965 g/kg | Soil treatment – general (see also comment field) | 0 1 – – – | 579 kg a.i./ha | n.a. | 2-4 weeks (minimum waiting period before planting). After application and incorporation, the soil is covered by plastic foil. 1 application every 3 years. Before plantation the soil has to be checked whether it is contain any residue |
| Sweet peppers HU F    | Nematodes, insects, soil fungi weeds | GR 965 g/kg | Soil treatment – general (see also comment field) | 0 1 – – – | 579 kg a.i./ha | n.a. | See tomatoes |
| Cucumbers HU F        | Nematodes, insects, soil fungi weeds | GR 965 g/kg | Soil treatment – general (see also comment field) | 0 1 – – – | 579 kg a.i./ha | n.a. | |
| Gherkins HU F         | Nematodes, insects, soil fungi weeds | GR 965 g/kg | Soil treatment – general (see also comment field) | 0 1 – – – | 579 kg a.i./ha | n.a. | See tomatoes |
| Courgettes HU F       | Nematodes, insects, soil fungi weeds | GR 965 g/kg | Soil treatment – general (see also comment field) | 0 1 – – – | 579 kg a.i./ha | n.a. | See tomatoes |
| Crop and/or situation | MS or country | F G or I | Pests or group of pests controlled | Preparation | Application | Application rate per treatment | PHI (days)(d) | Remarks |
|------------------------|---------------|------------|---------------------------------|-------------|-------------|-------------------------------|---------------|---------|
|                        |               |            |                                 | Type(b)     | Conc. a.s.  | Method kind                    | Range of growth stages & season(c) | Number min-max | Interval between application (min) | a.s./hl min-max | Water L/ha min-max | Rate and unit | n.a. |
| Melons                 | HU            | F          | Nematodes, insects, soil fungi, weeds | GR          | 965 g/kg   | Soil treatment – general (see also comment field) | 0 | 1 | – | – | – | 579 kg a.i./ha | n.a. | See tomatoes |
| Pumpkins               | HU            | F          | Nematodes, insects, soil fungi, weeds | GR          | 965 g/kg   | Soil treatment – general (see also comment field) | 0 | 1 | – | – | – | 579 kg a.i./ha | n.a. | See tomatoes |
| Watermelons            | HU            | F          | Nematodes, insects, soil fungi, weeds | GR          | 965 g/kg   | Soil treatment – general (see also comment field) | 0 | 1 | – | – | – | 579 kg a.i./ha | n.a. | See tomatoes |
| Chinese cabbages       | AT, HU        | F          | Nematodes, soil fungi, soil insects | MG          | 965 g/kg   | Soil treatment – general (see also comment field) | 0 | 1 | – | – | – | 482.5 kg a.i./ha | n.a. | 30 days = minimum waiting period before planting or sowing; product is incorporated at 20 cm |
| Kales                  | AT, HU        | F          | Nematodes, soil fungi, soil insects | MG          | 965 g/kg   | Soil treatment – general (see also comment field) | 0 | 1 | – | – | – | 482.5 kg a.i./ha | n.a. | 30 days = minimum waiting period before planting or sowing; product is incorporated at 20 cm |
| Lamb’s lettuces        | AT, HU        | F          | Nematodes, soil fungi, soil insects | MG          | 965 g/kg   | Soil treatment – general (see also comment field) | 0 | 1 | – | – | – | 482.5 kg a.i./ha | n.a. | 30 days = minimum waiting period before planting or sowing; product is incorporated at 20 cm |
| Crop and/or situation | MS or country | Pests or group of pests controlled | Preparation | Method kind | Range of growth stages & season | Number min-max | Interval between application | a.s./hl min-max | Water L/ha min-max | PHI (days) | Remarks |
|-----------------------|---------------|----------------------------------|-------------|-------------|-------------------------------|----------------|-----------------------------|----------------|-------------------|------------|---------|
| Lettuces              | AT, HU        | Nematodes, soil fungi, soil insects | MG 965 g/kg | Soil treatment – general (see also comment field) | 0 1             | –                           | –              | –                 | n.a.       | 30 days = minimum waiting period before planting or sowing; product is incorporated at 20 cm |
| Escaroles             | AT            | Nematodes, soil fungi, soil insects | MG 965 g/kg | Soil treatment – general (see also comment field) | 0 1             | –                           | –              | –                 | n.a.       | 30 days = minimum waiting period before planting or sowing; product is incorporated at 20 cm |
| Cresses               | AT            | Nematodes, soil fungi, soil insects | MG 965 g/kg | Soil treatment – general (see also comment field) | 0 1             | –                           | –              | –                 | n.a.       | 30 days = minimum waiting period before planting or sowing; product is incorporated at 20 cm |
| Land cresses          | AT            | Nematodes, soil fungi, soil insects | MG 965 g/kg | Soil treatment – general (see also comment field) | 0 1             | –                           | –              | –                 | n.a.       | 30 days = minimum waiting period before planting or sowing; product is incorporated at 20 cm |
| Roman rocket          | AT            | Nematodes, soil fungi, soil insects | MG 965 g/kg | Soil treatment – general (see also comment field) | 0 1             | –                           | –              | –                 | n.a.       | 30 days = minimum waiting period before planting or sowing; product is incorporated at 20 cm |
| Crop and/or situation | MS or country | F G or I(a) | Pests or group of pests controlled | Preparation | Application | Application rate per treatment | PHI (days)(d) | Remarks |
|-----------------------|---------------|-------------|-----------------------------------|-------------|------------|--------------------------------|--------------|---------|
|                       |               |             |                                   | Type(b)     | Conc. a.s. | Method kind | Range of growth stages & season(c) | Number min-max | Interval between application (min) | a.s./ ha(min) | Water L/ha(min-max) | Rate and unit |               |
| Red mustards          | AT            | F           | Nematodes, soil fungi, soil insects | MG 965 g/kg | Soil treatment – general (see also comment field) | 0 1                | –                  | – | – | 482.5 kg a.i./ ha | n.a. | 30 days = minimum waiting period before planting or sowing; product is incorporated at 20 cm |
| Baby leaf crops       | AT            | F           | Nematodes, soil fungi, soil insects | MG 965 g/kg | Soil treatment – general (see also comment field) | 0 1                | –                  | – | – | 482.5 kg a.i./ ha | n.a. | 30 days = minimum waiting period before planting or sowing; product is incorporated at 20 cm |
| Spinaches             | AT, HU        | F           | Nematodes, soil fungi, soil insects | MG 965 g/kg | Soil treatment – general (see also comment field) | 0 1                | –                  | – | – | 482.5 kg a.i./ ha | n.a. | 30 days = minimum waiting period before planting or sowing; product is incorporated at 20 cm |
| Purslanes             | AT, HU        | F           | Nematodes, soil fungi, soil insects | MG 965 g/kg | Soil treatment – general (see also comment field) | 0 1                | –                  | – | – | 482.5 kg a.i./ ha | n.a. | 30 days = minimum waiting period before planting or sowing; product is incorporated at 20 cm |
| Chards                | AT            | F           | Nematodes, soil fungi, soil insects | MG 965 g/kg | Soil treatment – general (see also comment field) | 0 1                | –                  | – | – | 482.5 kg a.i./ ha | n.a. | 30 days = minimum waiting period before planting or sowing; product is incorporated at 20 cm |
| Crop and/or situation | MS or country | F G or I<sup>(a)</sup> | Pests or group of pests controlled | Preparation | Application | Application rate per treatment | PHI (days)<sup>(d)</sup> | Remarks |
|-----------------------|--------------|-------------------------|------------------------------------|-------------|-----------------|-----------------------------|------------------|---------|
| Hops                  | HU           | F                       | Nematodes, insects, soil fungi weeds | Soil treatment – general (see also comment field) | 0 – 1 | 965 kg a.i./ha | n.a. | After application and incorporation, the soil is covered by plastic foil for 2–4 weeks. After the removal of the foil, the soil has to be aerated and well ploughed. Before plantation, the soil has to be checked whether it is contain any residue. |

MRL: maximum residue level; MS: Member State; GR: granule; MG: microgranule; a.s.: active substance; a.i., active ingredient.

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

<sup>(b)</sup>: CropLife International Technical Monograph no 2, 6th Edition. Revised May 2008. Catalogue of pesticide.

<sup>(c)</sup>: 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.

<sup>(d)</sup>: PHI: minimum preharvest interval.
### A.2. Authorised outdoor uses in southern EU

| Crop and/or situation | MS or country | F or I(a) | Pests or group of pests controlled | Preparation | Application | Application rate per treatment | PHI (days)(d) | Remarks |
|-----------------------|---------------|-----------|-----------------------------------|-------------|-------------|-------------------------------|---------------|---------|
|                       |               |           |                                   |             | Range of growth stages & season(c) | Method kind | Number min-max | Interval between application (min) | a.s./hl min-max | Water L/ha min-max | Rate and unit |               |
| Grapefruits           | EL            | F         | Nematodes, soil fungi, soil insects | MG 965 g/kg | Soil treatment – general (see also comment field) | 0 1 | – | – | 482.5 kg a.i./ha | n.a. | 30 days = minimum waiting period before planting or sowing; product is incorporated at 20 cm |
| Oranges               | EL            | F         | Nematodes, soil fungi, soil insects | MG 965 g/kg | Soil treatment – general (see also comment field) | 0 1 | – | – | 482.5 kg a.i./ha | n.a. | 30 days = minimum waiting period before planting or sowing; product is incorporated at 20 cm |
| Lemons                | EL            | F         | Nematodes, soil fungi, soil insects | MG 965 g/kg | Soil treatment – general (see also comment field) | 0 1 | – | – | 482.5 kg a.i./ha | n.a. | 30 days = minimum waiting period before planting or sowing; product is incorporated at 20 cm |
| Limes                 | EL            | F         | Nematodes, soil fungi, soil insects | MG 965 g/kg | Soil treatment – general (see also comment field) | 0 1 | – | – | 482.5 kg a.i./ha | n.a. | 30 days = minimum waiting period before planting or sowing; product is incorporated at 20 cm |
| Crop and/or situation | MS or country | F or I(a) | Pests or group of pests controlled | Preparation | Application | Application rate per treatment | PHI (days)(d) | Remarks |
|-----------------------|---------------|-----------|------------------------------------|-------------|------------|--------------------------------|-------------|---------|
|                       |               |           |                                    |             |            |                                |             |         |
| Mandarins             | EL            | F         | Nematodes, soil fungi, soil insects | MG 965 g/kg | 0 1        | 482.5 kg a.i./ha | 30 days = minimum waiting period before planting or sowing; product is incorporated at 20 cm |
| Almonds               | EL            | F         | Nematodes, soil fungi, soil insects | MG 965 g/kg | 0 1        | 482.5 kg a.i./ha | 30 days = minimum waiting period before planting or sowing; product is incorporated at 20 cm |
| Brazil nuts           | ES            | F         | Nematodes, soil fungi, soil insects | MG 965 g/kg | 0 1        | 482.5 kg a.i./ha | 30 days = minimum waiting period before planting or sowing; product is incorporated at 20 cm |
| Cashew nuts           | EL            | F         | Nematodes, soil fungi, soil insects | MG 965 g/kg | 0 1        | 482.5 kg a.i./ha | 30 days = minimum waiting period before planting or sowing; product is incorporated at 20 cm |
| Crop and/or situation | MS or country | FG or I(a) | Pests or group of pests controlled | Preparation | Application | Application rate per treatment | PHI (days)(d) | Remarks |
|-----------------------|---------------|------------|-----------------------------------|-------------|-------------|-------------------------------|---------------|---------|
| Chestnuts EL F Nematodes, soil fungi, soil insects | MG 965 g/kg | Soil treatment – general (see also comment field) | 0 | 1 | 482.5 kg a.i./ha | 30 days = minimum waiting period before planting or sowing; product is incorporated at 20 cm |
| Coconuts ES F Nematodes, soil fungi, soil insects | MG 965 g/kg | Soil treatment – general (see also comment field) | 0 | 1 | 482.5 kg a.i./ha | 30 days = minimum waiting period before planting or sowing; product is incorporated at 20 cm |
| Hazelnuts EL F Nematodes, soil fungi, soil insects | MG 965 g/kg | Soil treatment – general (see also comment field) | 0 | 1 | 482.5 kg a.i./ha | 30 days = minimum waiting period before planting or sowing; product is incorporated at 20 cm |
| Macadamias ES F Nematodes, soil fungi, soil insects | MG 965 g/kg | Soil treatment – general (see also comment field) | 0 | 1 | 482.5 kg a.i./ha | 30 days = minimum waiting period before planting or sowing; product is incorporated at 20 cm |
| Crop and/or situation | MS or country | FG or I(a) | Pests or group of pests controlled | Preparation | Application | Application rate per treatment | PHI (days)(d) | Remarks |
|-----------------------|---------------|------------|-----------------------------------|-------------|------------|-------------------------------|---------------|---------|
|                        |               |            |                                   | Type(b) Conc. a.s. Method kind | Range of growth stages & season(c) Number min–max Interval between application (min) a.s./hl min–max Water L/ha min–max Rate and unit |                |         |
| Pecans                | EL            | F          | Nematodes, soil fungi, soil insects | MG 965 g/kg Soil treatment – general (see also comment field) | 0 1 – – – 482.5 kg a.i./ha | n.a. 30 days = minimum waiting period before planting or sowing; product is incorporated at 20 cm |
| Pine nut kernels      | EL            | F          | Nematodes, soil fungi, soil insects | MG 965 g/kg Soil treatment – general (see also comment field) | 0 1 – – – 482.5 kg a.i./ha | n.a. 30 days = minimum waiting period before planting or sowing; product is incorporated at 20 cm |
| Pistachios            | EL            | F          | Nematodes, soil fungi, soil insects | MG 965 g/kg Soil treatment – general (see also comment field) | 0 1 – – – 482.5 kg a.i./ha | n.a. 30 days = minimum waiting period before planting or sowing; product is incorporated at 20 cm |
| Walnuts               | EL            | F          | Nematodes, soil fungi, soil insects | MG 965 g/kg Soil treatment – general (see also comment field) | 0 1 – – – 482.5 kg a.i./ha | n.a. 30 days = minimum waiting period before planting or sowing; product is incorporated at 20 cm |
| Crop and/or situation | MS or country | Pests or group of pests controlled | Preparation | Application | Application rate per treatment | PHI (days) | Remarks |
|-----------------------|---------------|----------------------------------|-------------|-------------|-----------------------------|-----------|---------|
|                       |               |                                  | Type(b) Conc. a.s. Method kind | Range of growth stages & season(c) | Number min– max | Water L/ha min– max | Rate and unit |          |
| Apples                | EL F          | Nematodes, soil fungi, soil insects | MG 965 g/kg Soil treatment – general (see also comment field) | 0 | 1 | – | – | 482.5 kg a.i./ha n.a. 30 days = minimum waiting period before planting or sowing; product is incorporated at 20 cm |
| Pears                 | EL F          | Nematodes, soil fungi, soil insects | MG 965 g/kg Soil treatment – general (see also comment field) | 0 | 1 | – | – | 482.5 kg a.i./ha n.a. 30 days = minimum waiting period before planting or sowing; product is incorporated at 20 cm |
| Quinces               | EL F          | Nematodes, soil fungi, soil insects | MG 965 g/kg Soil treatment – general (see also comment field) | 0 | 1 | – | – | 482.5 kg a.i./ha n.a. 30 days = minimum waiting period before planting or sowing; product is incorporated at 20 cm |
| Medlars               | ES F          | Nematodes, soil fungi, soil insects | MG 965 g/kg Soil treatment – general (see also comment field) | 0 | 1 | – | – | 482.5 kg a.i./ha n.a. 30 days = minimum waiting period before planting or sowing; product is incorporated at 20 cm |
| Crop and/or situation | MS or country | F G or I (a) | Pests or group of pests controlled | Preparation | Method kind | Application | Application rate per treatment | PHI (days) (d) | Remarks |
|-----------------------|---------------|--------------|------------------------------------|-------------|------------|-------------|---------------------------------|---------------|---------|
| Loquats               | EL            | F            | Nematodes, soil fungi, soil insects | MG 965 g/kg | Soil treatment – general (see also comment field) | 0 1          | 482.5 kg a.i./ha n.a. 30 days = minimum waiting period before planting or sowing; product is incorporated at 20 cm |
| Apricots              | EL            | F            | Nematodes, soil fungi, soil insects | MG 965 g/kg | Soil treatment – general (see also comment field) | 0 1          | 482.5 kg a.i./ha n.a. 30 days = minimum waiting period before planting or sowing; product is incorporated at 20 cm |
| Cherries              | EL            | F            | Nematodes, soil fungi, soil insects | MG 965 g/kg | Soil treatment – general (see also comment field) | 0 1          | 482.5 kg a.i./ha n.a. 30 days = minimum waiting period before planting or sowing; product is incorporated at 20 cm |
| Peaches               | EL            | F            | Nematodes, soil fungi, soil insects | MG 965 g/kg | Soil treatment – general (see also comment field) | 0 1          | 482.5 kg a.i./ha n.a. 30 days = minimum waiting period before planting or sowing; product is incorporated at 20 cm |
### Review of the existing MRLs for dazomet

| Crop and/or situation | MS or country | F G or I (a) | Pests or group of pests controlled | Preparation | Application | Application rate per treatment | PHI (days) (d) | Remarks |
|-----------------------|---------------|--------------|------------------------------------|-------------|-------------|-------------------------------|----------------|---------|
| Plums                 | EL F          | Nematodes, soil fungi, soil insects | MG 965 g/kg | Soil treatment – general (see also comment field) | 0 1 – – | – – | 482.5 kg a.i./ha | n.a. | 30 days = minimum waiting period before planting or sowing; product is incorporated at 20 cm |
| Table grapes          | EL F          | Nematodes, soil fungi, soil insects | MG 965 g/kg | Soil treatment – general (see also comment field) | 0 1 – – | – – | 482.5 kg a.i./ha | n.a. | 30 days = minimum waiting period before planting or sowing; product is incorporated at 20 cm |
| Wine grapes           | EL F          | Nematodes, soil fungi, soil insects | MG 965 g/kg | Soil treatment – general (see also comment field) | 0 1 – – | – – | 482.5 kg a.i./ha | n.a. | 30 days = minimum waiting period before planting or sowing; product is incorporated at 20 cm |
| Strawberries          | EL F          | Nematodes, soil fungi, soil insects | MG 965 g/kg | Soil treatment – general (see also comment field) | 0 1 – – | – – | 482.5 kg a.i./ha | n.a. | 30 days = minimum waiting period before planting or sowing; product is incorporated at 20 cm |

(a) For further information, please refer to the comment field.
| Crop and/or situation | MS or country | F or I(a) | Pests or group of pests controlled | Preparation | Application | Application rate per treatment | PHI (days)(d) | Remarks |
|-----------------------|---------------|-----------|-----------------------------------|-------------|------------|-------------------------------|---------------|---------|
|                       |               |           |                                   | Type(b) Conc. a.s. Method kind | Range of growth stages & season(e) | Number min–max | Interval between application (min) | a.s./hl min–max | Water L/ha min–max | Rate and unit |          |
| Blackberries          | EL F          |           | Nematodes, soil fungi, soil insects | MG 965 g/kg Soil treatment – general (see also comment field) | 0 1 | – | – | – | 482.5 kg a.i./ha | n.a. | 30 days = minimum waiting period before planting or sowing; product is incorporated at 20 cm |
| Dewberries            | EL F          |           | Nematodes, soil fungi, soil insects | MG 965 g/kg Soil treatment – general (see also comment field) | 0 1 | – | – | – | 482.5 kg a.i./ha | n.a. | 30 days = minimum waiting period before planting or sowing; product is incorporated at 20 cm |
| Raspberries           | EL F          |           | Nematodes, soil fungi, soil insects | MG 965 g/kg Soil treatment – general (see also comment field) | 0 1 | – | – | – | 482.5 kg a.i./ha | n.a. | 30 days = minimum waiting period before planting or sowing; product is incorporated at 20 cm |
| Blueberries           | EL F          |           | Nematodes, soil fungi, soil insects | MG 965 g/kg Soil treatment – general (see also comment field) | 0 1 | – | – | – | 482.5 kg a.i./ha | n.a. | 30 days = minimum waiting period before planting or sowing; product is incorporated at 20 cm |
| Crop and/or situation | MS or country | FG or I(a) | Pests or group of pests controlled | Preparation | Method kind | Range of growth stages & season(c) | Number min–max | Interval between application (min) | a.s./hL min–max | Water L/ha min–max | Rate and unit | PHI (days)(d) | Remarks |
|----------------------|---------------|-----------|-----------------------------------|-------------|------------|-------------------------------|----------------|---------------------------------|----------------|------------------|-------------|----------|---------|
| Cranberries          | EL F          | MG 965 g/kg | Nematodes, soil fungi, soil insects | Soil treatment – general (see also comment field) | 0           | 1                | –                    | –                  | 482.5 kg a.i./ha | n.a.          | 30 days = minimum waiting period before planting or sowing; product is incorporated at 20 cm |
| Currants             | EL F          | MG 965 g/kg | Nematodes, soil fungi, soil insects | Soil treatment – general (see also comment field) | 0           | 1                | –                    | –                  | 482.5 kg a.i./ha | n.a.          | 30 days = minimum waiting period before planting or sowing; product is incorporated at 20 cm |
| Gooseberries         | EL F          | MG 965 g/kg | Nematodes, soil fungi, soil insects | Soil treatment – general (see also comment field) | 0           | 1                | –                    | –                  | 482.5 kg a.i./ha | n.a.          | 30 days = minimum waiting period before planting or sowing; product is incorporated at 20 cm |
| Rose hips            | FR F          | MG 950 g/kg | Nematodes, soil fungi, soil insects | Soil treatment – general (see also comment field) | 0           | 1                | –                    | –                  | 475 kg a.i./ha | n.a.          | 30 days = minimum waiting period before planting or sowing; product is incorporated at 20 cm |
| Crop and/or situation | MS or country | F | G or I(a) | Pests or group of pests controlled | Preparation | Application | Application rate per treatment | PHI (days)(d) | Remarks |
|----------------------|--------------|---|-----------|-----------------------------------|-------------|------------|------------------------------|----------|--------|
| Mulberries           | EL           | F |          | Nematodes, soil fungi, soil insects | MG 965 g/kg | Soil treatment general (see also comment field) | 0 | 1 | - | 482.5 kg a.i./ha | n.a. |
| Azaroles             | FR           | F |          | Nematodes, soil fungi, soil insects | MG 950 g/kg | Soil treatment general (see also comment field) | 0 | 1 | - | 475 kg a.i./ha | n.a. |
| Elderberries         | FR           | F |          | Nematodes, soil fungi, soil insects | MG 950 g/kg | Soil treatment general (see also comment field) | 0 | 1 | - | 475 kg a.i./ha | n.a. |
| Figs                 | EL, FR       | F |          | Nematodes, soil fungi, soil insects | MG 965 g/kg | Soil treatment general (see also comment field) | 0 | 1 | - | 396-693 kg a.i./ha | n.a. |

(a) Crop and/or situation

(b) Type

(c) Range of growth stages & season

(d) PHI (days)
| Crop and/or situation | MS or country | F G or I | Pests or group of pests controlled | Preparation | Method kind | Range of growth stages & season | Number min-max | Interval between application (min) | a.s./hl min-max | Water L/ha min-max | Rate and unit | PHI (days) | Remarks |
|----------------------|--------------|----------|-----------------------------------|-------------|------------|---------------------------------|----------------|----------------------------------|----------------|-------------------|--------------|-----------|---------|
| Table olives         | EL, FR       | F        | Nematodes, soil fungi, soil insects | MG          | Soil treatment - general (see also comment field) | 0               | 1                              | –               | –                 | –            | n.a.      | 30/45 days = minimum waiting period before planting or sowing; product is incorporated at 20 cm |
| Kumquats             | EL           | F        | Nematodes, soil fungi, soil insects | MG          | Soil treatment - general (see also comment field) | 0               | 1                              | –               | –                 | –            | n.a.      | 30/45 days = minimum waiting period before planting or sowing; product is incorporated at 20 cm |
| Kaki                 | EL           | F        | Nematodes, soil fungi, soil insects | MG          | Soil treatment - general (see also comment field) | 0               | 1                              | –               | –                 | –            | n.a.      | 30/45 days = minimum waiting period before planting or sowing; product is incorporated at 20 cm |
| Kiwi fruits          | EL, FR, PT   | F        | Nematodes, soil fungi, soil insects | MG          | Soil treatment - general (see also comment field) | 0               | 1                              | –               | –                 | –            | n.a.      | 30/45 days = minimum waiting period before planting or sowing; product is incorporated at 20 cm |
| Crop and/or situation | MS or country | F | G or I | Pests or group of pests controlled | Preparation Type(b) | Conc. a.s. | Method kind | Range of growth stages & season(c) | Number min–max | Interval between application (min) | Application rate per treatment a.s./hl min–max | Water L/ha min–max | PHI (days)(d) | Remarks |
|-----------------------|--------------|---|--------|-----------------------------------|---------------------|-----------|------------|----------------------------------|----------------|-------------------------------|--------------------------------------------|----------------|-------------|---------|
| Prickly pears         | EL           | F |        | Nematodes, soil fungi, soil insects | MG                  | 965 g/kg | Soil treatment – general (see also comment field) | 0                  | 1                           | –                           | 396–693 kg a.i./ha | n.a.        | 30/45 days = minimum waiting period before planting or sowing; product is incorporated at 20 cm |
| Avocados              | EL           | F |        | Nematodes, soil fungi, soil insects | MG                  | 965 g/kg | Soil treatment – general (see also comment field) | 0                  | 1                           | –                           | 396–693 kg a.i./ha | n.a.        | 30/45 days = minimum waiting period before planting or sowing; product is incorporated at 20 cm |
| Mangoes               | EL           | F |        | Nematodes, soil fungi, soil insects | MG                  | 965 g/kg | Soil treatment – general (see also comment field) | 0                  | 1                           | –                           | 396–693 kg a.i./ha | n.a.        | 30/45 days = minimum waiting period before planting or sowing; product is incorporated at 20 cm |
| Granate apples        | EL           | F |        | Nematodes, soil fungi, soil insects | MG                  | 965 g/kg | Soil treatment – general (see also comment field) | 0                  | 1                           | –                           | 396–693 kg a.i./ha | n.a.        | 30/45 days = minimum waiting period before planting or sowing; product is incorporated at 20 cm |
| Crop and/or situation | MS or country | F or G or I<sup>(a)</sup> | Pests or group of pests controlled | Preparation | Application | Application rate per treatment | PHI (days)<sup>(d)</sup> | Remarks |
|-----------------------|--------------|--------------------------|-----------------------------------|-------------|-----------------|------------------------------|----------------|---------|
| Potatoes              | PT           | F                        | Nematodes, soil fungi, soil insects | MG 965 g/kg | Soil treatment general (see also comment field) | 0 | 1 | – | – | 482.5 kg a.i./ha | n.a. | 30/45 days = minimum waiting period before planting or sowing; product is incorporated at 20 cm |
| Beetroot              | PT           | F                        | Nematodes, soil fungi, soil insects | MG 965 g/kg | Soil treatment general (see also comment field) | 0 | 1 | – | – | 482.5 kg a.i./ha | n.a. | 30/45 days = minimum waiting period before planting or sowing; product is incorporated at 20 cm |
| Carrots               | EL           | F                        | Nematodes, soil fungi, soil insects | MG 965 g/kg | Soil treatment general (see also comment field) | 0 | 1 | – | – | 482.5 kg a.i./ha | n.a. | 30 days = minimum waiting period before planting or sowing; product is incorporated at 20 cm |
| Crop and/or situation | MS or country | Pests or group of pests controlled | Preparation Type | Conc. a.s. | Method kind | Range of growth stages & season | Number min–max | Interval between application (min) | Application rate per treatment a.s./hlL/min–max | Water L/ha min–max | Rate and unit | PHI (days) | Remarks |
|----------------------|---------------|-----------------------------------|------------------|-----------|-------------|-----------------------------|---------------|-------------------------------|----------------------------------|----------------|---------------|-----------|---------|
| Celeriacs            | F             | Nematodes, soil fungi, soil insects | MG 965 g/kg      | Soil treatment general (see also comment field) | 0               | 1               | –                           | –                     | 482.5 kg a.i./ha | n.a.       | 48          |          | Incorporation to soil (20 cm depth) followed by 35 days soil coverage period. Preplanting treatment (at least 45 days before planting). Use assessed in on-going MRL application. |
| Horseradishes       | F             | Nematodes, soil fungi, soil insects | MG 965 g/kg      | Soil treatment general (see also comment field) | 0               | 1               | –                           | –                     | 482.5 kg a.i./ha | n.a.       | 48          |          | Incorporation to soil (20 cm depth) followed by 35 days soil coverage period. Preplanting treatment (at least 45 days before planting). Use assessed in on-going MRL application. |
| Crop and/or situation       | MS or country | Pests or group of pests controlled | Preparation | Application | Application rate per treatment | Remarks                                                                 |
|----------------------------|---------------|-----------------------------------|-------------|-------------|--------------------------------|-------------------------------------------------------------------------|
| Jerusalem artichokes       | F             | Nematodes, soil fungi, soil insects | MG 965 g/kg | Soil treatment general (see also comment field) | 0 | 1 | – | – | 482.5 kg a.i./ha | n.a. Incorporation to soil (20 cm depth) followed by 35 days soil coverage period. Preplanting treatment (at least 45 days before planting). Use assessed in on-going MRL application |
| Parsnips                   | F             | Nematodes, soil fungi, soil insects | MG 965 g/kg | Soil treatment general (see also comment field) | 0 | 1 | – | – | 482.5 kg a.i./ha | n.a. Incorporation to soil (20 cm depth) followed by 35 days soil coverage period. Preplanting treatment (at least 45 days before planting). Use assessed in on-going MRL application |
| Crop and/or situation | MS or country | Pests or group of pests controlled | Preparation | Application | Application rate per treatment | PHI (days) | Remarks |
|----------------------|---------------|-----------------------------------|-------------|-------------|-------------------------------|------------|---------|
|                      |               |                                   |             |             |                               |           |         |
| Parsley roots         | F             | Nematodes, soil fungi, soil insects | MG 965 g/kg | Soil treatment general (see also comment field) | 0 1 – – – | 482.5 kg a.i./ha | n.a. | Incorporation to soil (20 cm depth) followed by 35 days soil coverage period. Preplanting treatment (at least 45 days before planting). Use assessed in on-going MRL application |
| Radishes              | EL            | Nematodes, soil fungi, soil insects | MG 965 g/kg | Soil treatment general (see also comment field) | 0 1 – – – | 482.5 kg a.i./ha | n.a. | 30 days = minimum waiting period before planting or sowing; product is incorporated at 20 cm |
| Salsifies             | F             | Nematodes, soil fungi, soil insects | MG 965 g/kg | Soil treatment general (see also comment field) | 0 1 – – – | 482.5 kg a.i./ha | n.a. | Incorporation to soil (20 cm depth) followed by 35 days soil coverage period. Preplanting treatment (at least 45 days before planting). Use assessed in on-going MRL application |
| Crop and/or situation | MS or country | F G or I\(^{(a)}\) | Pests or group of pests controlled | Preparation | Application | Application rate per treatment | PHI (days)\(^{(d)}\) | Remarks |
|----------------------|--------------|------------------|-----------------------------------|-------------|-------------|-------------------------------|----------------|---------|
| Swedes               | F            | Nematodes, soil fungi, soil insects | MG | 965 g/kg | Soil treatment – general (see also comment field) | 0 | 1 | – | – | 482.5 kg a.i./ha | n.a. | Incorporation to soil (20 cm depth) followed by 35 days soil coverage period. Preplanting treatment (at least 45 days before planting). Use assessed in on-going MRL application |
| Turnips              | F            | Nematodes, soil fungi, soil insects | MG | 965 g/kg | Soil treatment – general (see also comment field) | 0 | 1 | – | – | 482.5 kg a.i./ha | n.a. | Incorporation to soil (20 cm depth) followed by 35 days soil coverage period. Preplanting treatment (at least 45 days before planting). Use assessed in on-going MRL application |
| Onions               | PT           | Nematodes, soil fungi, soil insects | MG | 965 g/kg | Soil treatment – general (see also comment field) | 0 | 1 | – | – | 482.5 kg a.i./ha | n.a. | 30/45 days = minimum waiting period before planting or sowing; product is incorporated at 20 cm |
| Crop and/or situation | MS or country | Pests or group of pests controlled | Preparation Type(b) | Conc. a.s. | Method kind | Range of growth stages & season(c) | Number min-max | Interval between application (min) | Application rate per treatment a.s./hl | Water L/ha | PHI (days)(d) | Remarks |
|-----------------------|---------------|-----------------------------------|---------------------|-----------|-------------|-----------------------------------|----------------|-----------------------------|-----------------------------------|-----------|--------------|---------|
| Tomatoes              | EL            | Nematodes, soil fungi, soil insects | MG                  | 965 g/kg  | Soil treatment general (see also comment field) | 0               | 1                            | –                    | –                      | 482.5 kg a.i./ha | n.a.      | 30 days = minimum waiting period before planting or sowing; product is incorporated at 20 cm |
| Sweet peppers         | EL            | Nematodes, soil fungi, soil insects | MG                  | 965 g/kg  | Soil treatment general (see also comment field) | 0               | 1                            | –                    | –                      | 482.5 kg a.i./ha | n.a.      | 30 days = minimum waiting period before planting or sowing; product is incorporated at 20 cm |
| Aubergines            | EL            | Nematodes, soil fungi, soil insects | MG                  | 965 g/kg  | Soil treatment general (see also comment field) | 0               | 1                            | –                    | –                      | 482.5 kg a.i./ha | n.a.      | 30 days = minimum waiting period before planting or sowing; product is incorporated at 20 cm |
| Okra                  | EL            | Nematodes, soil fungi, soil insects | MG                  | 965 g/kg  | Soil treatment general (see also comment field) | 0               | 1                            | –                    | –                      | 482.5 kg a.i./ha | n.a.      | 30 days = minimum waiting period before planting or sowing; product is incorporated at 20 cm |
| Crop and/or situation | MS or group of MS or country | Pests or group of pests controlled | Preparation | Application | Application rate per treatment | PHI (days) |
|-----------------------|-----------------------------|----------------------------------|-------------|-------------|-------------------------------|------------|
|                       |                             |                                  | Type(b) Conc. a.s. Method kind | Range of growth stages & season(c) | Number min-max | Interval between application (min) | a.s./hl L/ha min-max | Rate and unit | Remarks |
| Cucumbers             | EL                          | F                                | Nematodes, soil fungi, soil insects | MG 965 g/kg | Soil treatment – general (see also comment field) | 0 1 | – | – | 482.5 kg a.i./ha | n.a. | 30 days = minimum waiting period before planting or sowing; product is incorporated at 20 cm |
| Gherkins              | EL                          | F                                | Nematodes, soil fungi, soil insects | MG 965 g/kg | Soil treatment – general (see also comment field) | 0 1 | – | – | 482.5 kg a.i./ha | n.a. | 30 days = minimum waiting period before planting or sowing; product is incorporated at 20 cm |
| Courgettes            | EL                          | F                                | Nematodes, soil fungi, soil insects | MG 965 g/kg | Soil treatment – general (see also comment field) | 0 1 | – | – | 482.5 kg a.i./ha | n.a. | 30 days = minimum waiting period before planting or sowing; product is incorporated at 20 cm |
| Melons                | EL                          | F                                | Nematodes, soil fungi, soil insects | MG 965 g/kg | Soil treatment – general (see also comment field) | 0 1 | – | – | 482.5 kg a.i./ha | n.a. | 30 days = minimum waiting period before planting or sowing; product is incorporated at 20 cm |
| Crop and/or situation | MS or country | FG or I (a) | Pests or group of pests controlled | Preparation | Method kind | Range of growth stages & season (c) | Number min–max | Interval between application (min) | Application rate per treatment | PHI (days) (d) | Remarks |
|-----------------------|---------------|------------|-----------------------------------|-------------|------------|------------------------------------|----------------|-----------------------------------|-------------------------------|--------------|---------|
| Pumpkins              | PT            | F          | Nematodes, soil fungi, soil insects | MG          | Soil treatment general (see also comment field) | 0 | 1 | – | – | 482.5 kg a.i./ha | n.a. | 30 days = minimum waiting period before planting or sowing; product is incorporated at 20 cm |
| Watermelons           | EL            | F          | Nematodes, soil fungi, soil insects | MG          | Soil treatment general (see also comment field) | 0 | 1 | – | – | 482.5 kg a.i./ha | n.a. | 30 days = minimum waiting period before planting or sowing; product is incorporated at 20 cm |
| Broccoli              | PT            | F          | Nematodes, soil fungi, soil insects | MG          | Soil treatment general (see also comment field) | 0 | 1 | – | – | 482.5 kg a.i./ha | n.a. | 30 days = minimum waiting period before planting or sowing; product is incorporated at 20 cm |
| Cauliflowers          | PT            | F          | Nematodes, soil fungi, soil insects | MG          | Soil treatment general (see also comment field) | 0 | 1 | – | – | 482.5 kg a.i./ha | n.a. | 30 days = minimum waiting period before planting or sowing; product is incorporated at 20 cm |
| Crop and/or situation | MS or country | FG or I(A) | Pests or group of pests controlled | Preparation | Application | Application rate per treatment | PHI (days)(D) | Remarks |
|-----------------------|--------------|------------|------------------------------------|-------------|------------|-------------------------------|---------------|---------|
| Head cabbages         | PT           | F          | Nematodes, soil fungi, soil insects| MG 965 g/kg| Soil treatment general (see also comment field) | - | - | 482.5 kg a.i./ha | 30 days = minimum waiting period before planting or sowing; product is incorporated at 20 cm |
| Chinese cabbages      | EL           | F          | Nematodes, soil fungi, soil insects| MG 965 g/kg| Soil treatment general (see also comment field) | - | - | 482.5 kg a.i./ha | 30 days = minimum waiting period before planting or sowing; product is incorporated at 20 cm |
| Kales                 | PT, FR       | F          | Nematodes, soil fungi, soil insects| MG 950 g/kg| Soil treatment general (see also comment field) | - | - | 475 kg a.i./ha | 30 days = minimum waiting period before planting or sowing; product is incorporated at 20 cm |
| Lamb’s lettuces       | EL           | F          | Nematodes, soil fungi, soil insects| MG 965 g/kg| Soil treatment general (see also comment field) | - | - | 482.5 kg a.i./ha | 30 days = minimum waiting period before planting or sowing; product is incorporated at 20 cm |
| Crop and/or situation | MS or country | F G or I(a) | Pests or group of pests controlled | Preparation | Application | Application rate per treatment | PHI (days)(d) | Remarks |
|-----------------------|---------------|-------------|-----------------------------------|-------------|-------------|-----------------------------|---------------|---------|
| Lettuces              | EL F          | Nematodes, soil fungi, soil insects | MG 965 g/kg | Soil treatment general (see also comment field) | 0 1 | – | 482.5 kg a.i./ha | n.a. | 30 days = minimum waiting period before planting or sowing; product is incorporated at 20 cm |
| Escaroles             | EL F          | Nematodes, soil fungi, soil insects | MG 965 g/kg | Soil treatment general (see also comment field) | 0 1 | – | 482.5 kg a.i./ha | n.a. | 30 days = minimum waiting period before planting or sowing; product is incorporated at 20 cm |
| Cresses               | EL F          | Nematodes, soil fungi, soil insects | MG 965 g/kg | Soil treatment general (see also comment field) | 0 1 | – | 482.5 kg a.i./ha | n.a. | 30 days = minimum waiting period before planting or sowing; product is incorporated at 20 cm |
| Land cresses          | EL F          | Nematodes, soil fungi, soil insects | MG 965 g/kg | Soil treatment general (see also comment field) | 0 1 | – | 482.5 kg a.i./ha | n.a. | 30 days = minimum waiting period before planting or sowing; product is incorporated at 20 cm |
| Crop and/or situation | MS or country | FG or I(a) | Pests or group of pests controlled | Preparation | Application | Application rate per treatment | PHI (days)(d) | Remarks |
|----------------------|---------------|------------|-----------------------------------|-------------|------------|---------------------------------|--------------|---------|
| Roman rocket         | EL            | F          | Nematodes, soil fungi, soil insects | MG 965 g/kg | Soil treatment – general (see also comment field) | 0 1 –  –  –  –  –  –  – | 482.5 kg a.i./ha | n.a. 30 days = minimum waiting period before planting or sowing; product is incorporated at 20 cm |
| Red mustards         | EL            | F          | Nematodes, soil fungi, soil insects | MG 965 g/kg | Soil treatment – general (see also comment field) | 0 1 –  –  –  –  –  – | 482.5 kg a.i./ha | n.a. 30 days = minimum waiting period before planting or sowing; product is incorporated at 20 cm |
| Baby leaf crops      | EL            | F          | Nematodes, soil fungi, soil insects | MG 965 g/kg | Soil treatment – general (see also comment field) | 0 1 –  –  –  –  –  – | 482.5 kg a.i./ha | n.a. 30 days = minimum waiting period before planting or sowing; product is incorporated at 20 cm |
| Spinaches            | EL            | F          | Nematodes, soil fungi, soil insects | MG 965 g/kg | Soil treatment – general (see also comment field) | 0 1 –  –  –  –  –  – | 482.5 kg a.i./ha | n.a. 30 days = minimum waiting period before planting or sowing; product is incorporated at 20 cm |
| Crop and/or situation | MS or country | FG or I | Pests or group of pests controlled | Preparation Type(b) | Conc. a.s. | Method kind | Range of growth stages & season(c) | Number min-max | Interval between application (min) | a.s./hl min-max | Water L/ha min-max | PHI (days)(d) | Remarks |
|----------------------|---------------|---------|-----------------------------------|--------------------|----------|------------|---------------------------------|---------------|------------------------------|----------------|-----------------|-------------|---------|
| Purslanes            | EL            | F       | Nematodes, soil fungi, soil insects | MG 965 g/kg        | Soil treatment general (see also comment field) | 0          | 1          | –                              | –             | –              | –           | 30 days = minimum waiting period before planting or sowing; product is incorporated at 20 cm |
| Chards               | EL            | F       | Nematodes, soil fungi, soil insects | MG 965 g/kg        | Soil treatment general (see also comment field) | 0          | 1          | –                              | –             | –              | –           | 30 days = minimum waiting period before planting or sowing; product is incorporated at 20 cm |
| Beans (with pods)    | PT            | F       | Nematodes, soil fungi, soil insects | MG 965 g/kg        | Soil treatment general (see also comment field) | 0          | 1          | –                              | –             | –              | –           | 30/45 days = minimum waiting period before planting or sowing; product is incorporated at 20 cm |
| Beans (without pods) | PT            | F       | Nematodes, soil fungi, soil insects | MG 965 g/kg        | Soil treatment general (see also comment field) | 0          | 1          | –                              | –             | –              | –           | 30/45 days = minimum waiting period before planting or sowing; product is incorporated at 20 cm |
| Crop and/or situation | MS or country | F G I(a) | Pests or group of pests controlled | Preparation | Application | Application rate per treatment | PHI (days)(d) | Remarks |
|-----------------------|---------------|----------|-----------------------------------|-------------|-------------|-------------------------------|----------------|---------|
| Peas (with pods)      | PT F          | MG 965 g/kg | Nematodes, soil fungi, soil insects | Soil treatment general (see also comment field) | 0 1 – – – | 482.5 kg a.i./ha | n.a. | 30/45 days = minimum waiting period before planting or sowing; product is incorporated at 20 cm |
| Peas (without pods)   | PT F          | MG 965 g/kg | Nematodes, soil fungi, soil insects | Soil treatment general (see also comment field) | 0 1 – – – | 482.5 kg a.i./ha | n.a. | 30/45 days = minimum waiting period before planting or sowing; product is incorporated at 20 cm |
| Asparagus             | PT F          | MG 965 g/kg | Nematodes, soil fungi, soil insects | Soil treatment general (see also comment field) | 0 1 – – – | 482.5 kg a.i./ha | n.a. | 30/45 days = minimum waiting period before planting or sowing; product is incorporated at 20 cm |
| Leeks                 | PT F          | MG 965 g/kg | Nematodes, soil fungi, soil insects | Soil treatment general (see also comment field) | 0 1 – – – | 482.5 kg a.i./ha | n.a. | 30/45 days = minimum waiting period before planting or sowing; product is incorporated at 20 cm |

MS: Member State; MG: microgranule; MRL: maximum residue level; a.s.: active substance; a.i.: active ingredient.
(a): Outdoor or field use (F), greenhouse application (G) or indoor application (I).
(b): CropLife International Technical Monograph no 2, 6th Edition. Revised May 2008. Catalogue of pesticide.
(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.
## A.3. Authorised indoor uses in EU

| Crop and/or situation | MS or country | FG or I(a) | Pests or group of pests controlled | Preparation | Application | Application rate per treatment | PHI (days)(d) | Remarks |
|-----------------------|---------------|-----------|-----------------------------------|-------------|-------------|--------------------------------|--------------|---------|
| Peaches               | BE            | I         | Nematodes, soil fungi             | MG 950 g/kg | Soil treatment – general (see also comment field) | 0 1            | –   | –    | 475 kg a.i./ha | n.a. | 35 days = minimum waiting period before planting or sowing; Incorporated in 20 cm of soil |
| Plums                 | BE            | I         | Nematodes, soil fungi             | MG 950 g/kg | Soil treatment – general (see also comment field) | 0 1            | –   | –    | 475 kg a.i./ha | n.a. | 35 days = minimum waiting period before planting or sowing; Incorporated in 20 cm of soil |
| Table grapes          | AT            | I         | Nematodes, soil fungi, soil insects | MG 965 g/kg | Soil treatment – general (see also comment field) | 0 1            | –   | –    | 482.5 kg a.i./ha | n.a. | 30 days = minimum waiting period before planting or sowing; product is incorporated at 20 cm |
| Wine grapes           | AT            | I         | Nematodes, soil fungi, soil insects | MG 965 g/kg | Soil treatment – general (see also comment field) | 0 1            | –   | –    | 482.5 kg a.i./ha | n.a. | 30 days = minimum waiting period before planting or sowing; product is incorporated at 20 cm |
| Crop and/or situation | MS or country | Pests or group of pests controlled | Preparation | Application | Application rate per treatment |
|-----------------------|---------------|----------------------------------|-------------|-------------|---------------------------------|
|                       |               |                                  | Type(b)     | Conc. a.s.  | Method kind                     | Range of growth stages & season(c) | Number min-max | Interval between application (min) | Water L/ha min-max | Rate and unit | PHI (days)(d) | Remarks |
| Strawberries          | EL, AT        | Nematodes, soil fungi, soil insects | MG          | 965 g/kg    | Soil treatment – general (see also comment field) | 0 | 1 | – | – | 482.5 kg a.i./ha | n.a. | 30 days = minimum waiting period before planting or sowing; product is incorporated at 20 cm |
| Blackberries          | EL, AT        | Nematodes, soil fungi, soil insects | MG          | 965 g/kg    | Soil treatment – general (see also comment field) | 0 | 1 | – | – | 482.5 kg a.i./ha | n.a. | 30 days = minimum waiting period before planting or sowing; product is incorporated at 20 cm |
| Dewberries            | EL, AT        | Nematodes, soil fungi, soil insects | MG          | 965 g/kg    | Soil treatment – general (see also comment field) | 0 | 1 | – | – | 482.5 kg a.i./ha | n.a. | 30 days = minimum waiting period before planting or sowing; product is incorporated at 20 cm |
| Raspberries           | EL, AT        | Nematodes, soil fungi, soil insects | MG          | 965 g/kg    | Soil treatment – general (see also comment field) | 0 | 1 | – | – | 482.5 kg a.i./ha | n.a. | 30 days = minimum waiting period before planting or sowing; product is incorporated at 20 cm |
Review of the existing MRLs for dazomet

| Crop and/or situation | MS or country | F G or T(a) | Pests or group of pests controlled | Preparation | Application | Application rate per treatment | PHI (days)(d) | Remarks |
|-----------------------|---------------|-------------|-----------------------------------|-------------|------------|-------------------------------|--------------|---------|
| Blueberries EL, AT I | Nematodes, soil fungi, soil insects | MG 965 g/kg | Soil treatment – general (see also comment field) | 0 1 | – | – | 482.5 kg a.i./ha | n.a. | 30 days = minimum waiting period before planting or sowing; product is incorporated at 20 cm |
| Cranberries EL, AT I | Nematodes, soil fungi, soil insects | MG 965 g/kg | Soil treatment – general (see also comment field) | 0 1 | – | – | 482.5 kg a.i./ha | n.a. | 30 days = minimum waiting period before planting or sowing; product is incorporated at 20 cm |
| Currants EL, AT I | Nematodes, soil fungi, soil insects | MG 965 g/kg | Soil treatment – general (see also comment field) | 0 1 | – | – | 482.5 kg a.i./ha | n.a. | 30 days = minimum waiting period before planting or sowing; product is incorporated at 20 cm |
| Gooseberries EL, AT I | Nematodes, soil fungi, soil insects | MG 965 g/kg | Soil treatment – general (see also comment field) | 0 1 | – | – | 482.5 kg a.i./ha | n.a. | 30 days = minimum waiting period before planting or sowing; product is incorporated at 20 cm |
### Crop and/or situation | MS or country | FG or I | Pests or group of pests controlled | Preparation | Application | Application rate per treatment | PHI (days) | Remarks
--- | --- | --- | --- | --- | --- | --- | --- | ---
Rose hips | AT | I | Nematodes, soil fungi, soil insects | MG 965 g/kg | Soil treatment – general (see also comment field) | 0 | 1 | – | – | n.a. | 482.5 kg a.i./ha | 30 days = minimum waiting period before planting or sowing; product is incorporated at 20 cm
Mulberries | EL, AT | I | Nematodes, soil fungi, soil insects | MG 965 g/kg | Soil treatment – general (see also comment field) | 0 | 1 | – | – | n.a. | 482.5 kg a.i./ha | 30 days = minimum waiting period before planting or sowing; product is incorporated at 20 cm
Radishes | EL | I | Nematodes, soil fungi, soil insects | MG 965 g/kg | Soil treatment – general (see also comment field) | 0 | 1 | – | – | n.a. | 482.5 kg a.i./ha | 30 days = minimum waiting period before planting or sowing; product is incorporated at 20 cm
Tomatoes | EL, AT, HU | I | Nematodes, soil fungi, soil insects | MG 965 g/kg | Soil treatment – general (see also comment field) | 0 | 1 | – | – | n.a. | 482.5 kg a.i./ha | 30 days = minimum waiting period before planting or sowing; product is incorporated at 20 cm
| Crop and/or situation | MS or country |FG or IT<sup>(a)</sup>| Pests or group of pests controlled | Preparation | Application | Application rate per treatment | PHI (days)<sup>(d)</sup> | Remarks |
|-----------------------|---------------|-----------------|-----------------------------------|-------------|-----------------|-------------------------------|----------------|---------|
| Sweet peppers         | EL, AT, HU    | I               | Nematodes, soil fungi, soil insects | MG 965 g/kg | Soil treatment – general (see also comment field) | 0 | 1 | – | – | 482.5 kg a.i./ha | n.a. | 30 days = minimum waiting period before planting or sowing; product is incorporated at 20 cm |
| Aubergines            | EL, AT, HU    | I               | Nematodes, soil fungi, soil insects | MG 965 g/kg | Soil treatment – general (see also comment field) | 0 | 1 | – | – | 482.5 kg a.i./ha | n.a. | 30 days = minimum waiting period before planting or sowing; product is incorporated at 20 cm |
| Okra                  | EL, AT        | I               | Nematodes, soil fungi, soil insects | MG 965 g/kg | Soil treatment – general (see also comment field) | 0 | 1 | – | – | 482.5 kg a.i./ha | n.a. | 30 days = minimum waiting period before planting or sowing; product is incorporated at 20 cm |
| Cucumbers             | EL, AT, HU    | I               | Nematodes, soil fungi, soil insects | MG 965 g/kg | Soil treatment – general (see also comment field) | 0 | 1 | – | – | 482.5 kg a.i./ha | n.a. | 30 days = minimum waiting period before planting or sowing; product is incorporated at 20 cm |
| Crop and/or situation | MS or country | Pests or group of pests controlled | Preparation | Application | Application rate per treatment | PHI (days) | Remarks |
|-----------------------|---------------|-----------------------------------|-------------|-------------|-------------------------------|------------|---------|
| Gherkins              | EL, AT, HU    | Nematodes, soil fungi, soil insects | MG 965 g/kg | Soil treatment – general (see also comment field) | 0 1 | 482.5 kg a.i./ha | n.a. | 30 days = minimum waiting period before planting or sowing; product is incorporated at 20 cm |
| Courgettes            | EL, AT, HU    | Nematodes, soil fungi, soil insects | MG 965 g/kg | Soil treatment – general (see also comment field) | 0 1 | 482.5 kg a.i./ha | n.a. | 30 days = minimum waiting period before planting or sowing; product is incorporated at 20 cm |
| Melons                | EL, AT, HU    | Nematodes, soil fungi, soil insects | MG 965 g/kg | Soil treatment – general (see also comment field) | 0 1 | 482.5 kg a.i./ha | n.a. | 30 days = minimum waiting period before planting or sowing; product is incorporated at 20 cm |
| Pumpkins              | AT, HU        | Nematodes, soil fungi, soil insects | MG 965 g/kg | Soil treatment – general (see also comment field) | 0 1 | 482.5 kg a.i./ha | n.a. | 30 days = minimum waiting period before planting or sowing; product is incorporated at 20 cm |
| Crop and/or situation | MS or country | F G or I<sup>(a)</sup> | Pests or group of pests controlled | Preparation Type<sup>(b)</sup> | Conc. a.s. | Method kind | Range of growth stages & season<sup>(c)</sup> | Number min-max | Interval between application (min) | Application rate per treatment a.s./HL/L/ha/min- max | Rate and unit | PHI (days)<sup>(d)</sup> | Remarks |
|-----------------------|---------------|-------------------------|------------------------------------|-----------------------------|------------|-------------|---------------------------------|--------------|-------------------------------|---------------------------------|-------------|-----------------|---------|
| Watermelons           | EL, AT, HU    | I                       | Nematodes, soil fungi, soil insects | MG                         | 965 g/kg   | Soil treatment – general (see also comment field) | 0                       | 1                        | –                      | 482.5 kg a.i./ha | n.a.         | 30 days = minimum waiting period before planting or sowing; product is incorporated at 20 cm |
| Chinese cabbages      | EL, AT, HU    | I                       | Nematodes, soil fungi, soil insects | MG                         | 965 g/kg   | Soil treatment – general (see also comment field) | 0                       | 1                        | –                      | 482.5 kg a.i./ha | n.a.         | 30 days = minimum waiting period before planting or sowing; product is incorporated at 20 cm |
| Kales                 | AT, HU        | I                       | Nematodes, soil fungi, soil insects | MG                         | 965 g/kg   | Soil treatment – general (see also comment field) | 0                       | 1                        | –                      | 482.5 kg a.i./ha | n.a.         | 30 days = minimum waiting period before planting or sowing; product is incorporated at 20 cm |
| Lamb’s lettuces       | EL, AT, HU    | I                       | Nematodes, soil fungi, soil insects | MG                         | 965 g/kg   | Soil treatment – general (see also comment field) | 0                       | 1                        | –                      | 482.5 kg a.i./ha | n.a.         | 30 days = minimum waiting period before planting or sowing; product is incorporated at 20 cm |
| Crop and/or situation | MS or country | F G or I(a) | Pests or group of pests controlled | Preparation | Application | Application rate per treatment | PHI (days)(d) | Remarks |
|-----------------------|---------------|-------------|-------------------------------------|-------------|------------|-------------------------------|---------------|---------|
|                       |               |             |                                     | Type(b)     | Conc. a.s. | Method kind | Range of growth stages & season(c) | Number min-max | Interval between application (min) | Water L/ha min-max | Rate and unit |               |               |         |
| Lettuces              | EL, AT, HU    | I           | Nematodes, soil fungi, soil insects | MG 965 g/kg| Soil treatment - general (see also comment field) | 0 1 | – | – | – | 482.5 kg a.i./ha | n.a. | 30 days = minimum waiting period before planting or sowing; product is incorporated at 20 cm |
| Escaroles             | EL, AT        | I           | Nematodes, soil fungi, soil insects | MG 965 g/kg| Soil treatment - general (see also comment field) | 0 1 | – | – | – | 482.5 kg a.i./ha | n.a. | 30 days = minimum waiting period before planting or sowing; product is incorporated at 20 cm |
| Cresses               | EL, AT        | I           | Nematodes, soil fungi, soil insects | MG 965 g/kg| Soil treatment - general (see also comment field) | 0 1 | – | – | – | 482.5 kg a.i./ha | n.a. | 30 days = minimum waiting period before planting or sowing; product is incorporated at 20 cm |
| Land cresses          | EL, AT        | I           | Nematodes, soil fungi, soil insects | MG 965 g/kg| Soil treatment - general (see also comment field) | 0 1 | – | – | – | 482.5 kg a.i./ha | n.a. | 30 days = minimum waiting period before planting or sowing; product is incorporated at 20 cm |
| Crop and/or situation | MS or country | F G or I(a) | Pests or group of pests controlled | Preparation | Application | Application rate per treatment | Remarks |
|-----------------------|--------------|-------------|------------------------------------|-------------|------------|-------------------------------|---------|
|                       |              |             |                                    | Type(b) | Conc. a.s. | Method | Range of growth stages & season(c) | Number min-max | Interval between application (min) | a.s./hL/min-max | Water L/ha/min-max | Rate and unit | PHI (days)(d) | |
| Roman rocket          | EL, AT       | I           | Nematodes, soil fungi, soil insects | MG        | 965 g/kg | Soil treatment – general (see also comment field) | 0 | 1 | – | – | 482.5 kg a.i./ha | n.a. | 30 days = minimum waiting period before planting or sowing; product is incorporated at 20 cm |
| Red mustards          | EL, AT       | I           | Nematodes, soil fungi, soil insects | MG        | 965 g/kg | Soil treatment – general (see also comment field) | 0 | 1 | – | – | 482.5 kg a.i./ha | n.a. | 30 days = minimum waiting period before planting or sowing; product is incorporated at 20 cm |
| Baby leaf crops       | EL, AT       | I           | Nematodes, soil fungi, soil insects | MG        | 965 g/kg | Soil treatment – general (see also comment field) | 0 | 1 | – | – | 482.5 kg a.i./ha | n.a. | 30 days = minimum waiting period before planting or sowing; product is incorporated at 20 cm |
| Spinaches             | BE           | I           | Nematodes, soil fungi              | MG        | 950 g/kg | Soil treatment – general (see also comment field) | 0 | 1 | – | – | 475 kg a.i./ha | n.a. | 35 days = minimum waiting period before planting or sowing; Incorporated in 20 cm of soil. |
| Crop and/or situation | MS or country | F G or I (a) | Pests or group of pests controlled | Preparation | Application | Application rate per treatment | PHI (days) (d) | Remarks |
|-----------------------|--------------|-------------|------------------------------------|-------------|------------|-------------------------------|---------------|---------|
| Purslanes             | EL, BE       | I           | Nematodes, soil fungi              | MG          | Soil       | General (see also comment field) | n.a.          | 35 days = minimum waiting period before planting or sowing; Incorporated in 20 cm of soil. |
| Chards                | BE           | I           | Nematodes, soil fungi              | MG          | Soil       | General (see also comment field) | n.a.          | 35 days = minimum waiting period before planting or sowing; Incorporated in 20 cm of soil. |

(a): Outdoor or field use (F), greenhouse application (G) or indoor application (I).
(b): CropLife International Technical Monograph no 2, 6th Edition. Revised May 2008. Catalogue of pesticide.
(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.
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) |
|----------------------------------|-------------|---------|----------------|----------------|
| Fruit crops                      | Strawberries | Soil, preplanting: 560 kg a.s./ha | 120, 246, 249 (foliage), 168-272 (berries) |
|                                  | Tomatoes    | Soil, preplanting: 40 kg a.s./ha | 83, 90, 101 (fruit), 112 (fruit, plant, roots) |
| Root crops                       | Radishes    | Soil, preplanting: 40 kg a.s./ha | 30, 33 (roots, leaves) |
| Leafy crops                      | Chinese cabbage | Soil, preplanting: 40 kg a.s./ha | 35, 98 |

Crop planted 35 DAT (strawberries) or 15 DAT (all other crops). Shorter planting/sowing period is expected to compensate the reduced application rate in tomatoes, radish and Chinese cabbage. Radiolabelling at thiocarbonyl moiety (Belgium, 2007 considered in EFSA, 2010)

| Rotational crops (available studies) | Crop groups | Crop(s) | Application(s) | PBI (DAT) |
|--------------------------------------|-------------|---------|----------------|-----------|
|                                      |             |         |                |           |

No studies available. Considering that the studies on primary crops were performed with preplanting applications on soil with 13–35 days between treatment and planting, these studies are deemed sufficient to also elucidate the nature of residue in rotational crops

| Processed commodities (hydrolysis study) | Conditions                        | Investigated? |
|------------------------------------------|-----------------------------------|---------------|
|                                          | Pasteurisation (20 min, 90 °C, pH 4) | No            |
|                                          | Baking, brewing and boiling (60 min, 100 °C, pH 5) | No            |
|                                          | Sterilisation (20 min, 120 °C, pH 6) | No            |

No studies available but required (data gaps were identified in the MRL review of metam; EFSA, 2019)

Can a general residue definition be proposed for primary crops? Yes (for soil preplanting applications).

Rotational crop and primary crop metabolism similar? Yes, studies on primary crops are sufficient to depict metabolism in rotational crops.

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

Plant residue definition for monitoring (RD-Mo) RD-Mo 1: methylisothiocyanate (MITC) RD-Mo 2 (optional): N,N'-dimethylthiourea (DMTU)

Plant residue definition for risk assessment (RD-RA) RD-RA 1: methylisothiocyanate (MITC) RD-RA 2: N,N'-dimethylthiourea (DMTU)

Conversion factor (monitoring to risk assessment) Not applicable
Methods of analysis for monitoring of residues (analytical technique, crop groups, LOQs)

**RD-Mo 1 (methylisothiocyanate – MITC):**
Matrices with high water content and high acid content:
- GC-MS (BASF 234/2); LOQ: 0.01 mg/kg
- Fully validated in tomatoes, lettuce and strawberries (EFSA, 2010)
- Confirmation by comparisons of ions
- ILV available
Matrices with high oil content:
- GC-MS (BASF 234/2); LOQ: 0.01 mg/kg
- Validated on rapeseed (Belgium, 2014)
- No ILV available (data gap)
Dry commodities:
- GC-MS/MS (modified BASF 234/2); LOQ: 0.01 mg/kg
- Validated on wheat grain (Belgium, 2014)
- No ILV available (data gap)
Matrices difficult to analyse (hops):
- Data gap: No method available.

EURLs indicated that QuEChERS method using GC-MS/MS can be used to enforce MITC in matrices with high water, high acid, high oil and dry content.

**RD-Mo 2 (N,N’-dimethylthiourea – DMTU):**
Matrices with high water content and high acid content:
- LC-MS/MS, LOQ 0.01 mg/kg

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**B.1.1.2. Stability of residues in plants**

| Plant products (available studies) | Category | Commodity | T (°C) | Stability (months) |
|-----------------------------------|----------|-----------|--------|--------------------|
| High water content                | Tomato   | −20       | 2      |
| Pepper                            | −20      | ≤ 3       |
| High acid content                 | Strawberry | −20       | ≤ 3    |
| Storage stability demonstrated for MITC (EFSA, 2010) |
| No studies available for DMTU    |

MITC: methyl isothiocyanate; DMTU: N,N’-dimethylthiourea.
### B.1.2. Magnitude of residues in plants

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

| Crop | Region/indoor<sup>(a)</sup> | Residue levels observed in the supervised residue trials relevant to the supported GAPs (mg/kg) | Recommendations/comments (OECD calculations) | MRL proposals (mg/kg) | HR (mg/kg)<sup>(b)</sup> | STMR (mg/kg)<sup>(c)</sup> |
|------|-----------------------------|-----------------------------------------------------------------------------------------------|-----------------------------------------------|----------------------|----------------|----------------|
| **Residue definition for enforcement and risk assessment:** methylisothiocyanate (MITC) | | | | | | |
| Citrus fruits (grapefruits, oranges, lemons, limes, mandarins) | SEU – | At the time of fruit harvesting (more than 365 days after application), residues in the fruits can be assumed to be not relevant | 0.01* | < 0.01 | < 0.01 |
| Almonds Brazil nuts Cashew nuts Chestnuts Coconuts Hazelnuts/cobnuts Macadamias Pecans Pine nut kernels Pistachios Walnuts | NEU – | At the time of fruit harvesting (more than 365 days after application), residues in the nuts can be assumed to be not relevant. Northern use only authorised on almonds and hazelnuts | 0.01* (tentative)<sup>(d)</sup> | < 0.01 | < 0.01 |
| SEU – | At the time of fruit harvesting (more than 365 days after application), residues in the nuts can be assumed to be not relevant | 0.01* (tentative)<sup>(d)</sup> | < 0.01 | < 0.01 |
| Pome fruits (apples, pears, quinces, medlars, loquats) | NEU – | At the time of fruit harvesting (more than 365 days after application), residues in the fruits can be assumed to be not relevant | 0.01* | < 0.01 | < 0.01 |
| SEU – | At the time of fruit harvesting (more than 365 days after application), residues in the fruits can be assumed to be not relevant | 0.01* | < 0.01 | < 0.01 |
| Crop                                      | Region/ indoor(a) | Residue levels observed in the supervised residue trials relevant to the supported GAPs (mg/kg)                                                                                                                                                                                                 | Recommendations/comments (OECD calculations)                                                                 | MRL proposals (mg/kg) | HR (mg/kg)(b) | STMR (mg/kg)(c) |
|------------------------------------------|-------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|----------------------|----------------|-----------------|
| Stone fruits (apricots, cherries, peaches, plums) | NEU               | At the time of fruit harvesting (more than 365 days after application), residues in the fruits can be assumed to be not relevant                                                                                                                                                           | 0.01*< 0.01< 0.01                                                         |                     |                |                 |
|                                          | SEU               | At the time of fruit harvesting (more than 365 days after application), residues in the fruits can be assumed to be not relevant                                                                                                                                                           | 0.01*< 0.01< 0.01                                                         |                     |                |                 |
|                                          | Indoor            | At the time of fruit harvesting (more than 365 days after application), residues in the fruits can be assumed to be not relevant. Indoor use only authorised on peaches and plums                                                                                                        | 0.01*< 0.01< 0.01                                                         |                     |                |                 |
| Table and wine grapes                    | NEU               | At the time of fruit harvesting (more than 365 days after application), residues in the fruits can be assumed to be not relevant                                                                                                                                                           | 0.01*< 0.01< 0.01                                                         |                     |                |                 |
|                                          | SEU               | At the time of fruit harvesting (more than 365 days after application), residues in the fruits can be assumed to be not relevant                                                                                                                                                           | 0.01*< 0.01< 0.01                                                         |                     |                |                 |
|                                          | Indoor            | At the time of fruit harvesting (more than 365 days after application), residues in the fruits can be assumed to be not relevant                                                                                                                                                           | 0.01*< 0.01< 0.01                                                         |                     |                |                 |
| Strawberries                             | NEU               | 9 × < 0.01 Trials compliant with GAP (Belgium, 2007, 2009, 2014)                                                                                                                                                                                                              | 0.01*< 0.01< 0.01                                                         |                     |                |                 |
|                                          | SEU               | 8 × < 0.01 Trials compliant with GAP (Belgium, 2014)                                                                                                                                                                                                                       | 0.01*< 0.01< 0.01                                                         |                     |                |                 |
|                                          | Indoor            | 5 × < 0.01 Trials compliant with GAP (Belgium, 2014)                                                                                                                                                                                                                       | 0.01*< 0.01< 0.01                                                         |                     |                |                 |
| Blackberries Dolbberries Raspberries (red and yellow) | NEU               | At the time of fruit harvesting (more than 365 days after application), residues in the fruits can be assumed to be not relevant                                                                                                                                                           | 0.01*< 0.01< 0.01                                                         |                     |                |                 |
|                                          | SEU               | At the time of fruit harvesting (more than 365 days after application), residues in the fruits can be assumed to be not relevant                                                                                                                                                           | 0.01*< 0.01< 0.01                                                         |                     |                |                 |
|                                          | Indoor            | At the time of fruit harvesting (more than 365 days after application), residues in the fruits can be assumed to be not relevant                                                                                                                                                           | 0.01*< 0.01< 0.01                                                         |                     |                |                 |

(a) NEU: Nordic countries
SEU: Southern European countries
Indoor: Indoor use only

(b) HR: Highest residue
(c) STMR: Short-term intake related to the maximum residue level (mg/kg)
### Crop Data

| Crop | Region/Indoor(a) | Residue levels observed in the supervised residue trials relevant to the supported GAPs (mg/kg) | Recommendations/comments (OECD calculations) | MRL proposals (mg/kg) | HR (mg/kg)(b) | STMR (mg/kg)(c) |
|------|-----------------|-----------------------------------------------------------------------------------------------|---------------------------------------------|----------------------|----------------|-----------------|
| Blueberries Cranberries Currant (black, red and white) Gooseberries (green, red and yellow) Rose hips Mulberries (black and white) Azaroles/ Mediterranean medlars Elderberries | NEU | – | At the time of fruit harvesting (more than 365 days after application), residues in the fruits can be assumed to be not relevant | 0.01* | < 0.01 | < 0.01 |
| | SEU | – | At the time of fruit harvesting (more than 365 days after application), residues in the fruits can be assumed to be not relevant | 0.01* | < 0.01 | < 0.01 |
| Indoors | – | At the time of fruit harvesting (more than 365 days after application), residues in the fruits can be assumed to be not relevant. Indoor use not authorised on azaroles and elderberries | 0.01* | < 0.01 | < 0.01 |
| Figs | SEU | – | At the time of fruit harvesting (more than 365 days after application), residues in the fruits can be assumed to be not relevant | 0.01* | < 0.01 | < 0.01 |
| Table olives | SEU | – | At the time of fruit harvesting (more than 365 days after application), residues in the fruits can be assumed to be not relevant | 0.01* | < 0.01 | < 0.01 |
| Kumquats | SEU | – | At the time of fruit harvesting (more than 365 days after application), residues in the fruits can be assumed to be not relevant | 0.01* | < 0.01 | < 0.01 |
| Kaki/Japanese persimmons | SEU | – | At the time of fruit harvesting (more than 365 days after application), residues in the fruits can be assumed to be not relevant | 0.01* | < 0.01 | < 0.01 |
| Kiwi fruits (green, red, yellow) | SEU | – | At the time of fruit harvesting (more than 365 days after application), residues in the fruits can be assumed to be not relevant | 0.01* | < 0.01 | < 0.01 |
| Prickly pears/ cactus fruits | SEU | – | At the time of fruit harvesting (more than 365 days after application), residues in the fruits can be assumed to be not relevant | 0.01* | < 0.01 | < 0.01 |
| Avocados | SEU | – | At the time of fruit harvesting (more than 365 days after application), residues in the fruits can be assumed to be not relevant | 0.01* | < 0.01 | < 0.01 |
### Crop Residue Levels and Recommendations

| Crop                      | Region/ Indoor(a) | Residue levels observed in the supervised residue trials relevant to the supported GAPs (mg/kg) | Recommendations/comments (OECD calculations) | MRL proposals (mg/kg) | HR (mg/kg)(b) | STMR (mg/kg)(c) |
|---------------------------|-------------------|-------------------------------------------------------------------------------------------------|---------------------------------------------|----------------------|-------------|----------------|
| Mangoes                   | SEU               | At the time of fruit harvesting (more than 365 days after application), residues in the fruits can be assumed to be not relevant | 0.01*                                                      | < 0.01              | < 0.01      |
| Granate apples/pomegranates | SEU               | At the time of fruit harvesting (more than 365 days after application), residues in the fruits can be assumed to be not relevant | 0.01*                                                      | < 0.01              | < 0.01      |
| Potatoes                  | NEU               | The GAP is authorised on potatoes plants for seed production. Therefore, a no residues situation is assumed (to be demonstrated by data) | 0.01* (tentative)                           | < 0.01              | < 0.01      |
| SEU                       |                   | 6 trials on carrots and compliant with GAP are available (Belgium, 2014) but not deemed sufficient to derive MRL and risk assessment values for potatoes | --                                                                 | --                   | --          |
| Carrots                   | NEU               | Trials performed on carrots compliant with GAP (Belgium, 2014, considered in EFSA, 2015). Extrapolation to other roots and tuber vegetables is applicable MRL\_OECD = 0.011 | 0.02 (tentative)                           | 0.01                 | < 0.01      |
| Beetroots                 |                   |                                                                                                 |                                             |                      |             |
| Celeriacs/turnip rooted celeries |                   |                                                                                                 |                                             |                      |             |
| Horseradishes             |                   |                                                                                                 |                                             |                      |             |
| Jerusalem artichokes      |                   |                                                                                                 |                                             |                      |             |
| Parsnips                  |                   |                                                                                                 |                                             |                      |             |
| Parsley roots/Hamburg rootsparsley |                   |                                                                                                 |                                             |                      |             |
| Salsifies                 |                   |                                                                                                 |                                             |                      |             |
| Swedes/rutabagas          |                   |                                                                                                 |                                             |                      |             |
| Turnips                   |                   |                                                                                                 |                                             |                      |             |

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*(a) Indoor: Residues observed in the supervised residue trials relevant to the supported GAPs. (b) HR: Highest residue. (c) STMR: Short-term intake risk management.
| Crop | Region/indoor<sup>(a)</sup> | Residue levels observed in the supervised residue trials relevant to the supported GAPs (mg/kg) | Recommendations/comments (OECD calculations) | MRL proposals (mg/kg) | HR (mg/kg)<sup>(b)</sup> | STMR (mg/kg)<sup>(c)</sup> |
|------|-----------------------------|-----------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------|----------------------|------------------|------------------|
| Radishes | NEU | <0.01; <0.01; <0.01; <0.01; 0.015 | Trials performed on radish compliant with GAP (Belgium, 2014). Northern (5) and southern (4) data were combined to derive MRL and risk assessment values MRL<sub>OECD</sub> = 0.04 | 0.05 (tentative)<sup>(f)</sup> | 0.03 < 0.01 | |
| | SEU | <0.01; <0.01; <0.01; 0.033 | Indoor 4 x <0.01 | Trials performed on radish compliant with GAP (Belgium, 2014) | 0.01* (tentative)<sup>(f)</sup> | <0.01 < 0.01 | |
| | | | | | | | |
| Onions | SEU | – | No data available. Northern use only authorised for tomatoes, peppers and all cucurbits (w/and w/o peel) | – | – | – |
| Tomatoes | NEU | – | No data available. Northern use only authorised for tomatoes, peppers and all cucurbits (w/and w/o peel) | – | – | – |
| Sweet peppers/ bell peppers | SEU | Tomatoes: <0.01; <0.01; <0.01; <0.01; <0.01; <0.01; <0.01; <0.01; <0.01 Cucumbers: <0.01; <0.01; <0.01; <0.01; <0.01; <0.01; <0.01; <0.01; <0.01 | Combined data set on tomatoes (8) and cucumbers (8) compliant with GAP (Belgium, 2014). Extrapolation to the whole group of fruiting vegetables (except sweet corn) is applicable MRL<sub>OECD</sub> = 0.014 | 0.02 (tentative)<sup>(f)</sup> | 0.01 < 0.01 |
| Aubergines | Indoor | Tomatoes: <0.01; <0.01; <0.01; <0.01; <0.01; <0.01; <0.01; <0.01; <0.01 Cucumbers: <0.01; <0.01; <0.01; <0.01; <0.01; <0.01; <0.01; <0.01; <0.01 | Combined data set on tomatoes (10) and cucumbers (7) compliant with GAP (Belgium, 2014). Extrapolation to the whole group of fruiting vegetables (except sweet corn) is applicable. MRL value of 0.1 mg/kg is derived in line with previous EFSA assessment (EFSA, 2015) MRL<sub>OECD</sub> = 0.08 | 0.1 (tentative)<sup>(f)</sup> | 0.08 < 0.01 |
| Okra/lady’s fingers | | | | | | |
| Cucurbits with edible peel (cucumbers, gherkins, courgettes) | | | | | | |
| Cucurbits with inedible peel (melons, pumpkins, watermelons) | | | | | | |
| Broccoli | SEU | – | No data available | – | – | – |
| Cauliflowers | SEU | – | No data available | – | – | – |
| Head cabbages | SEU | – | No data available | – | – | – |
| Crop | Region/indoor(a) | Residue levels observed in the supervised residue trials relevant to the supported GAPs (mg/kg) | Recommendations/comments (OECD calculations) | MRL proposals (mg/kg) | HR (mg/kg)(b) | STMR (mg/kg)(c) |
|------|-----------------|---------------------------------------------------------------------------------|---------------------------------------------|----------------------|--------------|---------------|
| Leafy brassica: Chinese cabbages/pe-tsai Kales | NEU | Baby leaves: 7 \times < 0.01; 0.019 Rocket: 3 \times < 0.01; 0.01 Lettuce: 12 \times < 0.01 | Combined data set on baby leaves, rocket and lettuce compliant with GAP (Belgium, 2014). Extrapolation to leafy brassica is proposed MRL<sub>OECD</sub> = 0.02 | 0.02 (tentative)(f) | 0.02 | < 0.01 |
| | SEU | Baby leaves: 7 \times < 0.01; 0.011 Rocket: 3 \times < 0.01; 0.02 Lettuce: 7 \times < 0.01; 0.011 | Combined data set on baby leaves, rocket and lettuce compliant with GAP (Belgium, 2014). MRL of 0.03 mg/kg is proposed considering the HR of 0.02 mg/kg in rocket. Extrapolation to leafy brassica is proposed MRL<sub>OECD</sub> = 0.02 | 0.03 (tentative)(f) | 0.02 | < 0.01 |
| Indoor | Baby leaves: 5 \times < 0.01; 0.011; 0.018 Rocket: 3 \times < 0.01; 0.01 Lettuce: 6 \times < 0.01; 0.01 | Combined data set on baby leaves, rocket and lettuce compliant with GAP (Belgium, 2014). Extrapolation to leafy brassica is proposed MRL<sub>OECD</sub> = 0.02 | 0.02 (tentative)(f) | 0.02 | < 0.01 |
| Lettuces and similar: Baby leaf crops (including brassica species) Roman rocket/ruco La Lamb's lettuces/corn salads Lettuces Escaroles/broad-leaved endives Cresses and other sprouts and shoots Land cresses Red mustards | NEU | Baby leaves: 7 \times < 0.01; 0.019 Rocket: 3 \times < 0.01; 0.01 Lettuce: 12 \times < 0.01 | Combined data set on baby leaves, rocket and lettuce compliant with GAP (Belgium, 2014). Extrapolation to the whole group of lettuce and similar MRL<sub>OECD</sub> = 0.02 | 0.02 (tentative)(f) | 0.02 | < 0.01 |
| | SEU | Baby leaves: 7 \times < 0.01; 0.011 Rocket: 3 \times < 0.01; 0.02 Lettuce: 7 \times < 0.01; 0.011 | Combined data set on baby leaves, rocket and lettuce compliant with GAP (Belgium, 2014). MRL of 0.03 mg/kg is proposed considering the HR of 0.02 mg/kg in rocket (EFSA, 2015). Extrapolation to the whole group of lettuce and similar MRL<sub>OECD</sub> = 0.02 | 0.03 (tentative)(f) | 0.02 | < 0.01 |
| Indoor | Baby leaves: 5 \times < 0.01; 0.011; 0.018 Rocket: 3 \times < 0.01; 0.01 Lettuce: 6 \times < 0.01; 0.01 | Combined data set on baby leaves, rocket and lettuce compliant with GAP (Belgium, 2014). Extrapolation to the whole group of lettuce and similar MRL<sub>OECD</sub> = 0.02 | 0.02 (tentative)(f) | 0.02 | < 0.01 |
| Crop                        | Region/indoor\(^{(a)}\) | Residue levels observed in the supervised residue trials relevant to the supported GAPs (mg/kg) | Recommendations/comments (OECD calculations) | MRL proposals (mg/kg) | HR (mg/kg)\(^{(b)}\) | STMR (mg/kg)\(^{(c)}\) |
|-----------------------------|-------------------------|-----------------------------------------------------------------------------------------------|---------------------------------------------|----------------------|----------------------|----------------------|
| Spinaches Purslanes Chards/beet leaves | NEU                     | < 0.01; < 0.01; 0.022; 0.038; 0.09                                                           | Trials on spinach compliant with GAP (Belgium, 2014). Northern (5) and southern (3) data were combined to derive MRL and risk assessment values. Extrapolation to purslane and chards is applicable MRL\(_{OECD} = 0.14\) | 0.15 (tentative)\(^{(f)}\) | 0.09                  | 0.02                  |
|                             | SEU                     | < 0.01; 0.013; 0.049                                                                         |                                             |                      |                      |                      |
| Indoor                      |                         | No data available                                                                            |                                             |                      |                      |                      |
| Beans (with pods)           | SEU                     | –                                                                                             | No data available                           |                      |                      |                      |
| Beans (without pods)        | SEU                     | –                                                                                             | No data available                           |                      |                      |                      |
| Peas (with pods)            | SEU                     | –                                                                                             | No data available                           |                      |                      |                      |
| Peas (without pods)         | SEU                     | –                                                                                             | No data available                           |                      |                      |                      |
| Asparagus                   | SEU                     | –                                                                                             | No data available                           |                      |                      |                      |
| Leeks                       | SEU                     | –                                                                                             | No data available                           |                      |                      |                      |
| Hops                        | NEU                     | –                                                                                             | No data available                           |                      |                      |                      |
| Turnip tops                 | NEU                     | –                                                                                             | No data available                           |                      |                      |                      |
|                             | SEU                     | –                                                                                             | No data available                           |                      |                      |                      |

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

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

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

(b): Highest residue.

(c): Supervised trials median residue.

(d): MRL is tentative because a ILV for the analytical method for enforcement in high oil content and dry commodities is missing.

(e): MRL is tentative because residue trials are missing.

(f): MRL is tentative because residue trials analysing DMTU should be required.
### B.1.2.2. Residues in succeeding crops

| Study Type                                      | Description                                                                 |
|-----------------------------------------------|------------------------------------------------------------------------------|
| Confined rotational crop study (quantitative aspect) | Studies not required when considering the DT\textsubscript{90 lab} for dazomet (4.6 days) and MITC (25.5 days) Furthermore, the primary crops can be regarded as rotational crops according to the GAP (EFSA, 2010) |
| Field rotational crop study                   | Not available and not required                                               |

DT\textsubscript{90}: period required for 90% dissipation; MITC: methyl isothiocyanate; GAP: Good Agricultural Practice.

### B.1.2.3. Processing factors

No studies available and not required.

### B.2. Residues in livestock

| Relevant groups | Dietary burden expressed in | Most critical diet\textsuperscript{(a)} | Most critical commodity\textsuperscript{(a)} | Trigger exceeded (Y/N) |
|-----------------|-----------------------------|------------------------------------------|---------------------------------------------|------------------------|
|                 | mg/kg bw per day            | mg/kg DM                                 |                                              |                        |
|                 | Med. | Max. | Med. | Max. |                                              |                          |

**Residue definition for risk assessment:** methyl isothiocyanate (MITC)

| Cattle (all diets) | 0.002 | 0.003 | 0.09 | 0.10 | Dairy cattle | Kale, leaves | N |
|-------------------|-------|-------|------|------|--------------|--------------|---|
| Cattle (dairy only) | 0.002 | 0.003 | 0.06 | 0.07 | Dairy cattle | Kale, leaves | N |
| Sheep (all diets) | 0.002 | 0.003 | 0.07 | 0.09 | Lamb         | Swede, roots | N |
| Sheep (ewe only) | 0.002 | 0.003 | 0.07 | 0.09 | Ram/Ewe      | Swede, roots | N |
| Swine (all diets) | 0.001 | 0.002 | 0.06 | 0.07 | Swine (breeding) | Kale, leaves | N |
| Poultry (all diets) | 0.001 | 0.001 | 0.01 | 0.01 | Poultry broiler | Swede, roots | N |
| Poultry (layer only) | 0.001 | 0.001 | 0.01 | 0.01 | Poultry layer | Swede, roots | N |

**Residue definition for risk assessment:** N\textsubscript{1},N\textsubscript{1}-dimethylthiourea (DMTU)

| Cattle (all diets) | 0.0046 | 0.0116 | 0.13 | 0.31 | Cattle (dairy) | Carrot, culls | Y |
|-------------------|--------|--------|------|------|---------------|---------------|---|
| Cattle (dairy only) | 0.0046 | 0.0116 | 0.12 | 0.30 | Cattle (dairy) | Carrot, culls | Y |
| Sheep (all diets) | 0.0053 | 0.0134 | 0.16 | 0.40 | Sheep (lamb) | Carrot, culls | Y |
| Sheep (ewe only) | 0.0055 | 0.0144 | 0.18 | 0.48 | Sheep (ram/ewe) | Carrot, culls | Y |
| Swine (all diets) | 0.0052 | 0.0137 | 0.07 | 0.19 | Swine (finishing) | Carrot, culls | Y |
| Poultry (all diets) | 0.0050 | 0.0131 | 0.07 | 0.19 | Poultry (turkey) | Carrot, culls | Y |
| Poultry (layer only) | 0.0050 | 0.0131 | 0.07 | 0.19 | Poultry (layer) | Carrot, culls | Y |

bw: body weight; DM: dry matter.
(a): Calculated for the maximum dietary burden.
B.2.1. Nature of residues and methods of analysis in livestock

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

| Livestock (available studies) | Animal | Dose (mg/kg bw per day) | Duration (days) | N rate/comment |
|------------------------------|--------|-------------------------|-----------------|---------------|
|                              | –      | –                       | –               | –             |

No studies available and not required considering the calculated dietary burdens for MITC. Studies should be required for DMTU.

MITC: methyl isothiocyanate; DMTU: \(N,N'\)-dimethylthiourea.

| Time needed to reach a plateau concentration in milk and eggs (days) | Inconclusive |
|---------------------------------------------------------------------|--------------|
| Metabolism in rat and ruminant similar (Yes/No)                    | Inconclusive |
| Animal residue definition for monitoring (RD-Mo)                   | Inconclusive |
| Animal residue definition for risk assessment (RD-RA)              | Inconclusive |
| Conversion factor (monitoring to risk assessment)                  | Inconclusive |
| Fat soluble residues (Yes/No)                                      | Inconclusive |
| Methods of analysis for monitoring of residues (analytical technique, crop groups, LOQs) | Not available |

B.2.1.2. Stability of residues in livestock

| Animal products (available studies) | Animal | Commodity | T (°C) | Stability (months/years) |
|------------------------------------|--------|-----------|--------|--------------------------|
|                                    | –      | –         | –      | –                        |

Not available and not required for MITC. Studies might be required for DMTU.

MITC: methyl isothiocyanate; DMTU: \(N,N'\)-dimethylthiourea.

B.2.2. Magnitude of residues in livestock

No studies available and not required for MITC. Studies might be required for DMTU.

B.3. Consumer risk assessment

B.3.1. Consumer risk assessment for MITC

| ADI | 0.004 mg/kg bw per day (EFSA, 2010, 2011) |
|-----|-----------------------------------------|
| Highest IEDI, according to EFSA PRimo | 15.2% ADI (UK toddler) |
| Assumptions made for the calculations | The calculation is based on the median residue levels of MITC arising from metam and dazomet. For plant commodities, the highest residue level resulting from the use of metam and dazomet was considered, assuming that the two active substances are not used together on the same crop. For those commodities where data were not available to derive MRLs and risk assessment values, the current EU MRLs were used for an indicative calculation. For animal commodities, no input values were considered, assuming that the uses on feed commodities which are not supported by data would be withdrawn. The contributions of commodities where no GAP was reported, neither in the framework of this review nor in the review of MRLs for metam (EFSA, 2019) were not included in the calculation. |
### Consumer risk assessment for DMTU

| ARfD | 0.03 mg/kg bw (EFSA, 2010, 2011) |
|------|----------------------------------|
| Highest IESTI, according to EFSA PRIMo | 66.3% ARfD (cucumbers, metam use) |

**Assumptions made for the calculations**

The calculation is based on the highest residue levels of MITC arising from metam and dazomet. For plant commodities, the highest residue level resulting from the use of metam and dazomet was considered, assuming that the two active substances are not used together on the same crop. For those commodities where data were not available to derive MRLs and risk assessment values, the current EU MRLs were used for an indicative calculation. For animal commodities, no input values were considered, assuming that the uses on feed commodities which are not supported by data would be withdrawn.

The contributions of commodities where no GAP was reported, neither in the framework of this review nor in the review of MRLs for metam (EFSA, 2019) were not included in the calculation.

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### B.3.2. Consumer risk assessment for DMTU

| ADI | 0.001 mg/kg bw per day (assuming ADI derived from metam is the same; EFSA, 2011) |
|-----|---------------------------------------------------------------------------------|
| Highest IEDI, according to EFSA PRIMo | 28% ADI (FR, infant) |

**Assumptions made for the calculations**

It is noted that data on DMTU were not available for the uses authorised on dazomet. The calculation is solely based on the median residue levels of DMTU arising from metam (EFSA, 2019). The plant commodities where data were not available to derive MRLs and risk assessment values for DMTU were not considered because there are no MRLs currently defined for this compound. This applies also to animal commodities, for which risk assessment values could not be derived due to the lack of data.

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

The calculated consumer exposure is indicative only.

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| ARfD | 0.1 mg/kg bw (assuming ARfD derived from metam is the same; EFSA, 2011) |
|------|--------------------------------------------------------------------------|
| Highest IESTI, according to EFSA PRIMo | 14.6% ARfD (carrots) |

**Assumptions made for the calculations**

It is noted that data on DMTU were not available for the uses authorised on dazomet. The calculation is solely based on the highest residue levels of DMTU arising from metam (EFSA, 2019). The plant commodities where data were not available to derive MRLs and risk assessment values for DMTU were not considered because there are no MRLs currently defined for this compound.

This applies also to animal commodities, for which risk assessment values could not be derived due to the lack of data.

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

The calculated consumer exposure is indicative only.

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**Notes:**

- **ADI:** acceptable daily intake; **bw:** body weight; **IEDI:** international estimated daily intake; **PRIMo:** (EFSA) Pesticide Residues Intake Model; **MITC:** methyl isothiocyanate; **GAP:** Good Agricultural Practice; **MRL:** maximum residue level; **ARfD:** acute reference dose; **IESTI:** international estimated short-term intake.

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**Review of the existing MRLs for dazomet**

[www.efsa.europa.eu/efsajournal](http://www.efsa.europa.eu/efsajournal) 84 EFSA Journal 2019;17(1):5562
### B.4. MRLs derived from dazomet uses (indicative only)

| Code number | Commodity                  | Existing EU MRL (mg/kg) | MRL (mg/kg) | Comment                                |
|-------------|----------------------------|-------------------------|-------------|----------------------------------------|
| 110010      | Grapefruits                | 0.02*                   | 0.01*       | MRL can be derived from GAP            |
| 110020      | Oranges                    | 0.02*                   | 0.01*       | MRL can be derived from GAP            |
| 110030      | Lemons                     | 0.02*                   | 0.01*       | MRL can be derived from GAP            |
| 110040      | Limes                      | 0.02*                   | 0.01*       | MRL can be derived from GAP            |
| 110050      | Mandarins                  | 0.02*                   | 0.01*       | MRL can be derived from GAP            |
| 120010      | Almonds                    | 0.02*                   | 0.01*       | MRL can be derived from GAP, tentative |
| 120020      | Brazil nuts                | 0.02*                   | 0.01*       | MRL can be derived from GAP, tentative |
| 120030      | Cashew nuts                | 0.02*                   | 0.01*       | MRL can be derived from GAP, tentative |
| 120040      | Chestnuts                  | 0.02*                   | 0.01*       | MRL can be derived from GAP, tentative |
| 120050      | Coconuts                   | 0.02*                   | 0.01*       | MRL can be derived from GAP, tentative |
| 120060      | Hazelnuts/cobnuts          | 0.02*                   | 0.01*       | MRL can be derived from GAP, tentative |
| 120070      | Macadamias                 | 0.02*                   | 0.01*       | MRL can be derived from GAP, tentative |
| 120080      | Pecans                     | 0.02*                   | 0.01*       | MRL can be derived from GAP, tentative |
| 120090      | Pine nut kernels           | 0.02*                   | 0.01*       | MRL can be derived from GAP, tentative |
| 120100      | Pistachios                 | 0.02*                   | 0.01*       | MRL can be derived from GAP, tentative |
| 120110      | Walnuts                    | 0.02*                   | 0.01*       | MRL can be derived from GAP, tentative |
| 130010      | Apples                     | 0.02*                   | 0.01*       | MRL can be derived from GAP            |
| 130020      | Pears                      | 0.02*                   | 0.01*       | MRL can be derived from GAP            |
| 130030      | Quinces                    | 0.02*                   | 0.01*       | MRL can be derived from GAP            |
| 130040      | Medlars                    | 0.02*                   | 0.01*       | MRL can be derived from GAP            |
| 130050      | Loquats/Japanese medlars   | 0.02*                   | 0.01*       | MRL can be derived from GAP            |
| 140010      | Apricots                   | 0.02*                   | 0.01*       | MRL can be derived from GAP            |
| 140020      | Cherries (sweet)           | 0.02*                   | 0.01*       | MRL can be derived from GAP            |
| 140030      | Peaches                    | 0.02*                   | 0.01*       | MRL can be derived from GAP            |
| 140040      | Plums                      | 0.02*                   | 0.01*       | MRL can be derived from GAP            |
| 151010      | Table grapes               | 0.02*                   | 0.01*       | MRL can be derived from GAP            |
| 151020      | Wine grapes                | 0.02*                   | 0.01*       | MRL can be derived from GAP            |
| 152000      | Strawberries               | 0.02*                   | 0.01*       | MRL can be derived from GAP            |
| 153010      | Blackberries               | 0.02*                   | 0.01*       | MRL can be derived from GAP            |
| 153020      | Dewberries                 | 0.02*                   | 0.01*       | MRL can be derived from GAP            |
| 153030      | Raspberries (red and yellow)| 0.02*                   | 0.01*       | MRL can be derived from GAP            |
| 154010      | Blueberries                | 0.02*                   | 0.01*       | MRL can be derived from GAP            |
| 154020      | Cranberries                | 0.02*                   | 0.01*       | MRL can be derived from GAP            |
| 154030      | Currants (black, red and white) | 0.02*                   | 0.01*       | MRL can be derived from GAP            |
| 154040      | Gooseberries (green, red and yellow) | 0.02*                   | 0.01*       | MRL can be derived from GAP            |
| 154050      | Rose hips                  | 0.02*                   | 0.01*       | MRL can be derived from GAP            |
| 154060      | Mulberries (black and white)| 0.02*                   | 0.01*       | MRL can be derived from GAP            |

**Enforcement residue definition (existing):** dazomet (Methylisothiocyanate resulting from the use of dazomet and metam)

**Enforcement residue definition (proposed):** methylisothiocyanate (MITC)
| Code number | Commodity | Existing EU MRL (mg/kg) | MRL (mg/kg) | Comment                          |
|-------------|-----------|-------------------------|-------------|----------------------------------|
| 154070      | Azaroles/Mediterranean medlars | 0.02* 0.01* | MRL can be derived from GAP |
| 154080      | Elderberries | 0.02* 0.01* | MRL can be derived from GAP |
| 161020      | Figs | 0.02* 0.01* | MRL can be derived from GAP |
| 161030      | Table olives | 0.02* 0.01* | MRL can be derived from GAP |
| 161040      | Kumquats | 0.02* 0.01* | MRL can be derived from GAP |
| 161060      | Kaki/Japanese persimmons | 0.02* 0.01* | MRL can be derived from GAP |
| 162010      | Kiwi fruits (green, red, yellow) | 0.02* 0.01* | MRL can be derived from GAP |
| 162040      | Prickly pears/cactus fruits | 0.02* 0.01* | MRL can be derived from GAP |
| 163010      | Avocados | 0.02* 0.01* | MRL can be derived from GAP |
| 163030      | Mangoes | 0.02* 0.01* | MRL can be derived from GAP |
| 163050      | Granate apples/pomegranates | 0.02* 0.01* | MRL can be derived from GAP |
| 211000      | Potatoes | 0.02* 0.01* | MRL can be derived from GAP, tentative |
| 213010      | Beetroots | 0.02* 0.02 | MRL can be derived from GAP, tentative |
| 213020      | Carrots | 0.02* 0.02 | MRL can be derived from GAP, tentative |
| 213030      | Celerics/turpin rooted celeries | 0.02* 0.02 | MRL can be derived from GAP, tentative |
| 213040      | Horseradishes | 0.02* 0.02 | MRL can be derived from GAP, tentative |
| 213050      | Jerusalem artichokes | 0.02* 0.02 | MRL can be derived from GAP, tentative |
| 213060      | Parsnips | 0.02* 0.02 | MRL can be derived from GAP, tentative |
| 213070      | Parsley roots/Hamburg roots parsley | 0.02* 0.02 | MRL can be derived from GAP, tentative |
| 213080      | Radishes | 0.05 0.05 | MRL can be derived from GAP, tentative |
| 213090      | Salsifies | 0.02* 0.02 | MRL can be derived from GAP, tentative |
| 213100      | Swedes/rutabagas | 0.02* 0.02 | MRL can be derived from GAP, tentative |
| 213110      | Turnips | 0.02* 0.02 | MRL can be derived from GAP, tentative |
| 220020      | Onions | 0.02* 0.02 | GAP is not supported by data (EU MRL reported) |
| 231010      | Tomatoes | 0.1 0.1 | MRL can be derived from GAP, tentative |
| 231020      | Sweet peppers/bell peppers | 0.1 0.1 | MRL can be derived from GAP, tentative |
| 231030      | Aubergines/eggplants | 0.1 0.1 | MRL can be derived from GAP, tentative |
| 231040      | Okra/lady’s fingers | 0.1 0.1 | MRL can be derived from GAP, tentative |
| 232010      | Cucumbers | 0.1 0.1 | MRL can be derived from GAP, tentative |
| 232020      | Gherkins | 0.1 0.1 | MRL can be derived from GAP, tentative |
| 232030      | Courgettes | 0.1 0.1 | MRL can be derived from GAP, tentative |
| 233010      | Melons | 0.1 0.1 | MRL can be derived from GAP, tentative |
| 233020      | Pumpkins | 0.1 0.1 | MRL can be derived from GAP, tentative |
| 233030      | Watermelons | 0.1 0.1 | MRL can be derived from GAP, tentative |
| 241010      | Broccoli | 0.02* 0.02 | GAP is not supported by data (EU MRL reported) |
| 241020      | Cauliflowers | 0.02* 0.02 | GAP is not supported by data (EU MRL reported) |
| 242020      | Head cabbages | 0.02* 0.02 | GAP is not supported by data (EU MRL reported) |
| Code number | Commodity | Existing EU MRL (mg/kg) | MRL (mg/kg) | Comment |
|-------------|-----------|-------------------------|-------------|---------|
| 243010      | Chinese cabbages/pe-tsai | 0.03 | 0.03 | MRL can be derived from GAP, tentative |
| 243020      | Kales     | 0.03 | 0.03 | MRL can be derived from GAP, tentative |
| 251010      | Lamb’s lettuces/corn salads | 0.03 | 0.03 | MRL can be derived from GAP, tentative |
| 251020      | Lettuces  | 0.03 | 0.03 | MRL can be derived from GAP, tentative |
| 251030      | Escaroles/broad-leaved endives | 0.03 | 0.03 | MRL can be derived from GAP, tentative |
| 251040      | Cresses and other sprouts and shoots | 0.03 | 0.03 | MRL can be derived from GAP, tentative |
| 251050      | Land cresses | 0.03 | 0.03 | MRL can be derived from GAP, tentative |
| 251060      | Roman rocket/rucola | 0.03 | 0.03 | MRL can be derived from GAP, tentative |
| 251070      | Red mustards | 0.03 | 0.03 | MRL can be derived from GAP, tentative |
| 251080      | Baby leaf crops (including brassica species) | 0.03 | 0.03 | MRL can be derived from GAP, tentative |
| 252010      | Spinaches | 0.15 | 0.15 | MRL can be derived from GAP, tentative |
| 252020      | Purslanes | 0.15 | 0.15 | MRL can be derived from GAP, tentative |
| 252030      | Chards/beet leaves | 0.15 | 0.15 | MRL can be derived from GAP, tentative |
| 260010      | Beans (with pods) | 0.02* | 0.02 | GAP is not supported by data (EU MRL reported) |
| 260020      | Beans (without pods) | 0.02* | 0.02 | GAP is not supported by data (EU MRL reported) |
| 260030      | Peas (with pods) | 0.02* | 0.02 | GAP is not supported by data (EU MRL reported) |
| 260040      | Peas (without pods) | 0.02* | 0.02 | GAP is not supported by data (EU MRL reported) |
| 270010      | Asparagus | 0.02* | 0.02 | GAP is not supported by data (EU MRL reported) |
| 270060      | Leeks     | 0.02* | 0.02 | GAP is not supported by data (EU MRL reported) |
| 700000      | Hops      | 0.02* | 0.02 | GAP is not supported by data (EU MRL reported) |
| –           | Other commodities of plant and/or animal origin | See Reg. 2016/1 | – | No GAP is authorised |

MRL: maximum residue level; GAP: Good Agricultural Practice.
*: Indicate that the MRL is set at the limit of quantification.
## Appendix C – Pesticide Residue Intake Model (PRIMo)

- **PRIMo total MITC (from metam and dazomet)**

### Toxicological end points

| ADI (mg/kg bw per day) | ARfD (mg/kg bw) | Source of ADI | Source of ARfD | Year of evaluation | Year of evaluation |
|------------------------|-----------------|---------------|---------------|-------------------|-------------------|
| 0.004                  | 0.03            | EFSA          | EFSA          | 2010              | 2010              |

### Methylisothiocyanate (MITC)

| LOQ (mg/kg bw) | Proposed LOQ | Code no. |
|----------------|-------------|----------|
|                |             |          |

### Chronic risk assessment – refined calculations

| Commodity/group of commodities | MS Diet | TMDI values in % of ADI | 1st contributor to MS diet | 2nd contributor to MS diet | 3rd contributor to MS diet | 3MRLs at LOQ (in % of ADI) |
|-------------------------------|---------|-------------------------|----------------------------|----------------------------|----------------------------|----------------------------|
| Oranges                       | 12.0    | 15.2                    | 0.5                        | 0.3                        | 0.2                        | 0.3                        |
| Potatoes                      | 10.5    | 8.7                     | 0.4                        | 0.3                        | 0.2                        | 0.3                        |
| Apples                        | 10.0    | 6.0                     | 0.3                        | 0.2                        | 0.1                        | 0.2                        |
| Wine grapes                   | 8.2     | 6.0                     | 0.2                        | 0.1                        | 0.0                        | 0.1                        |
| Carrots                       | 6.5     | 7.1                     | 0.1                        | 0.0                        | 0.0                        | 0.0                        |
| Oranges                       | 6.0     | 5.2                     | 0.0                        | 0.0                        | 0.0                        | 0.0                        |
| Apples                        | 5.5     | 3.6                     | 0.0                        | 0.0                        | 0.0                        | 0.0                        |
| Tomatoes                      | 5.0     | 3.1                     | 0.0                        | 0.0                        | 0.0                        | 0.0                        |
| Oranges                       | 4.5     | 2.4                     | 0.0                        | 0.0                        | 0.0                        | 0.0                        |
| Apples                        | 4.0     | 2.0                     | 0.0                        | 0.0                        | 0.0                        | 0.0                        |
| Wine grapes                   | 3.5     | 1.4                     | 0.0                        | 0.0                        | 0.0                        | 0.0                        |
| Carrots                       | 3.0     | 1.2                     | 0.0                        | 0.0                        | 0.0                        | 0.0                        |
| Oranges                       | 2.5     | 1.0                     | 0.0                        | 0.0                        | 0.0                        | 0.0                        |
| Apples                        | 2.0     | 0.5                     | 0.0                        | 0.0                        | 0.0                        | 0.0                        |
| Sugar beet (root)             | 1.5     | 0.5                     | 0.0                        | 0.0                        | 0.0                        | 0.0                        |

### Conclusion:

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

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

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

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

### Unprocessed commodities

| No of commodities for which ARfD/ADI is exceeded (UESTI 1): | No of commodities for which ARfD/ADI is exceeded (UESTI 2): | No of commodities for which ARfD/ADI is exceeded (UESTI 1): | No of commodities for which ARfD/ADI is exceeded (UESTI 2): |
|-------------------------------------------------------------|-------------------------------------------------------------|-------------------------------------------------------------|-------------------------------------------------------------|
| Highest % of ARfD/ADI Commodity | pTMRL/ threshold MRL (mg/kg) | Highest % of ARfD/ADI Commodity | pTMRL/ threshold MRL (mg/kg) | Highest % of ARfD/ADI Commodity | pTMRL/ threshold MRL (mg/kg) | Highest % of ARfD/ADI Commodity | pTMRL/ threshold MRL (mg/kg) |
| 66.3 Cucumbers 0.34/- | | 66.3 Cucumbers 0.34/- | | 30.6 Courgettes 0.34/- | | 23.0 Cucumbers 0.34/- | |
| 52.7 Courgettes 0.34/- | | 37.9 Tomatoes 0.22/- | | 22.3 Courgettes 0.34/- | | 22.3 Cucumbers 0.34/- | |
| 42.6 Tomatoes 0.22/- | | 37.6 Courgettes 0.34/- | | 19.2 Aubergines (egg plants) 0.22/- | | 18.2 Aubergines (egg plants) 0.22/- | |
| 37.9 Melons 0.075/- | | 30.9 Tomatoes 0.22/- | | 13.2 Pumpkins 0.075/- | | 13.2 Pumpkins 0.075/- | |
| 30.6 Watermelons 0.075/- | | 30.6 Watermelons 0.075/- | | 11.2 Tomatoes 0.22/- | | 10.2 Watermelons 0.075/- | |

### Processed commodities

| No of commodities for which ARfD/ADI is exceeded: | No of commodities for which ARfD/ADI is exceeded: |
|----------------------------------------------------|----------------------------------------------------|
| Highest % of ARfD/ADI Processed commodities | pTMRL/ threshold MRL (mg/kg) | Highest % of ARfD/ADI Processed commodities | pTMRL/ threshold MRL (mg/kg) |
| 12.8 Tomato juice 0.22/- | | 1.4 Tomato (preserved) 0.22/- | |
| 1.7 Apple juice 0.01/- | | 0.3 Orange juice 0.01/- | |
| 1.7 Orange Juice 0.01/- | | 0.2 Apple juice 0.01/- | |
| 1.6 Carrot juice 0.01/- | | 0.1 Wine 0.01/- | |
| 1.1 Grape juice 0.01/- | | 0.1 Peach preserved with 0.01/- | |

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

(**) pTMRL: provisional temporary MRL.

Conclusion:

For methylisothiocyanate (MITC), IESTI 1 and IESTI 2 were calculated for food commodities for which pTMRLs were submitted and for which consumption data are available. No exceedance of the ARfD/ADI was identified for any unprocessed commodity.

For processed commodities, no exceedance of the ARfD/ADI was identified.
### Toxicological end points

| LOQ (mg/kg bw) | ADI (mg/kg bw per day) | ARfD (mg/kg bw) | Source of ADI | Source of ARfD | Year of evaluation | Year of evaluation |
|----------------|------------------------|-----------------|---------------|----------------|-------------------|-------------------|
| Code no.       | Code no.               | 0.001           | EFSA          | EFSA           | 2011              | 2011              |

### N,N'-dimethylthiourea (DTMU)

**Chronic risk assessment – refined calculations**

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

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

**Conclusion:** The estimated Theoretical Maximum Daily Intakes (TMDI), based on pTMRLs were below the ADI. A long-term intake of residues of N,N'-dimethylthiourea (DTMU) is unlikely to present a public health concern.

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**PRImo DMTU**
### Acute risk assessment/children – refined calculations

The acute risk assessment is based on the ARfD.

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

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

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

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

#### No of commodities for which ARfD/ADI is exceeded (IESTI 1):

| Highest % of ARfD/ADI | Commodities | pTMRL (mg/kg) |
|-----------------------|-------------|---------------|
| 14.6                  | Carrots     | 0.23/-        |
| 12.1                  | Scarole (broad-leaf) | 0.138/-     |
| 8.3                   | Parsnips    | 0.23/-        |
| 5.0                   | Radishes    | 0.23/-        |

#### No of critical MRLs (IESTI 1):

| Highest % of ARfD/ADI | Commodities | pTMRL (mg/kg) |
|-----------------------|-------------|---------------|
| 9.9                   | Carrot, juice | 0.23/-       |
| 0.5                   | Apple juice  | 0.01/-       |
| 0.3                   | Grape juice  | 0.01/-       |
| 0.2                   | Pear juice   | 0.01/-       |
| 0.2                   | Tomato juice | 0.01/-       |
| 0.1                   | Apple juice  | 0.01/-       |
| 0.0                   | Wine         | 0.01/-       |
| 0.0                   | Tomato (preserved) | 0.01/-     |
| 0.0                   | Raisins      | 0.01/-       |

#### No of commodities for which ARfD/ADI is exceeded (IESTI 2):

| Highest % of ARfD/ADI | Commodities | pTMRL (mg/kg) |
|-----------------------|-------------|---------------|
| 9.9                   | Carrot, juice | 0.23/-       |
| 0.5                   | Apple juice  | 0.01/-       |
| 0.3                   | Grape juice  | 0.01/-       |
| 0.2                   | Pear juice   | 0.01/-       |
| 0.2                   | Tomato juice | 0.01/-       |

#### No of critical MRLs (IESTI 2):

| Highest % of ARfD/ADI | Commodities | pTMRL (mg/kg) |
|-----------------------|-------------|---------------|
| 9.9                   | Carrot, juice | 0.23/-       |
| 0.5                   | Apple juice  | 0.01/-       |
| 0.3                   | Grape juice  | 0.01/-       |
| 0.2                   | Pear juice   | 0.01/-       |
| 0.2                   | Tomato juice | 0.01/-       |

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

#### No of commodities for which ARfD/ADI is exceeded (IESTI 1):

| Highest % of ARfD/ADI | Commodities | pTMRL (mg/kg) |
|-----------------------|-------------|---------------|
| 14.6                  | Carrots     | 0.23/-        |
| 10.4                  | Carrots     | 0.23/-        |
| 7.0                   | Parsnips    | 0.23/-        |
| 4.0                   | Cucumbers   | 0.069/-       |

#### No of critical MRLs (IESTI 1):

| Highest % of ARfD/ADI | Commodities | pTMRL (mg/kg) |
|-----------------------|-------------|---------------|
| 9.9                   | Carrot, juice | 0.23/-       |
| 0.5                   | Apple juice  | 0.01/-       |
| 0.3                   | Grape juice  | 0.01/-       |
| 0.2                   | Pear juice   | 0.01/-       |
| 0.2                   | Tomato juice | 0.01/-       |
| 0.1                   | Apple juice  | 0.01/-       |
| 0.0                   | Wine         | 0.01/-       |
| 0.0                   | Tomato (preserved) | 0.01/-     |
| 0.0                   | Raisins      | 0.01/-       |

#### No of commodities for which ARfD/ADI is exceeded (IESTI 2):

| Highest % of ARfD/ADI | Commodities | pTMRL (mg/kg) |
|-----------------------|-------------|---------------|
| 13.9                  | Scarole (broad-leaf) | 0.138/-     |
| 6.8                   | Parsnips    | 0.23/-        |
| 5.2                   | Radishes    | 0.23/-        |
| 2.7                   | Cucumbers   | 0.069/-       |

#### No of critical MRLs (IESTI 2):

| Highest % of ARfD/ADI | Commodities | pTMRL (mg/kg) |
|-----------------------|-------------|---------------|
| 13.9                  | Scarole (broad-leaf) | 0.138/-     |
| 6.8                   | Parsnips    | 0.23/-        |
| 5.2                   | Radishes    | 0.23/-        |
| 2.7                   | Cucumbers   | 0.069/-       |

### Conclusion:

For N,N-dimethylthiourea (DTMU), IESTI 1 and IESTI 2 were calculated for food commodities for which pTMRLs were submitted and for which consumption data are available.

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

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

#### D.1. Livestock dietary burden calculations

| Feed commodity | Median dietary burden | Maximum dietary burden |
|----------------|-----------------------|------------------------|
|                | Input value (mg/kg)   | Comment                | Input value (mg/kg) | Comment                |
| **Risk assessment residue definition 1:** methyl isothiocyanate (MITC) | | | |
| Kales, leaves  | 0.01 STMR (dazomet)   | 0.02 HR (dazomet)      | | |
| Turnips, tops (leaves) | 0.01 STMR (metam) | 0.03 HR (metam) | | |
| Potatoes, culls | 0.01* STMR (dazomet) (a) | 0.01* HR (dazomet) (a) | | |
| Carrots, culls | 0.01* STMR (dazomet) (a) | 0.01 HR (dazomet) (a) | | |
| Swedes, roots  | 0.01* STMR (dazomet) (a) | 0.01 HR (dazomet) (a) | | |
| Turnips, roots | 0.01* STMR (dazomet) (a) | 0.01 HR (dazomet) (a) | | |
| Apples, wet pomace | 0.01* STMR (dazomet/metam) (g) | 0.01* STMR (dazomet/metam) (g) | | |
| Citrus, dried pulp | 0.01* STMR (c) (dazomet) (a) | 0.01* STMR (c) (dazomet) (a) | | |
| Coconuts, meal | 0.01* STMR (c) (dazomet) (a) | 0.01* STMR (c) (dazomet) (a) | | |
| Potatoes, process waste | 0.01* STMR (c) (dazomet) (a) | 0.01* STMR (c) (dazomet) (a) | | |
| Potatoes, dried pulp | 0.01* STMR (c) (dazomet) (a) | 0.01* STMR (c) (dazomet) (a) | | |

**Risk assessment residue definition 2:** N,N’-dimethylthiourea (DMTU)

| Turnips, tops (leaves) | 0.01* STMR (dazomet/metam) (g) | 0.02 HR (metam) (e) | | |
| Carrots, culls | 0.09 STMR (dazomet) (a) | 0.02 HR (metam) (e) | | |
| Apples, wet pomace | 0.01* STMR (c) (metam) (e) | 0.01* STMR (c) (metam) (e) | | |

STM: supervised trials median residue; HR: highest residue; PF: processing factor.
*: Indicates that the input value is proposed at the limit of quantification.
(a): The input values are derived from dazomet uses. The GAP on metam is either not supported by data, either less critical or there is no GAP authorised on metam.
(b): The input values are derived from metam uses (EFSA, 2019). The GAP on dazomet is not supported by data.
(c): For fruit pomace, coconut meal and potatoes by-products, no default processing factor was applied because residues are expected to be below the LOQ. Concentration of residues in these commodities is therefore not expected.
(d): The input values derived from metam and dazomet uses are the same.
(e): The input values for DMTU are derived from metam uses only (limited data; EFSA, 2019). There is no data on DMTU supporting the GAPs on dazomet. The calculated dietary burden is indicative only.

#### D.2. Consumer risk assessment for MITC

| Commodity   | Chronic risk assessment | Acute risk assessment |
|-------------|-------------------------|-----------------------|
|             | Input value (mg/kg)     | Comment               | Input value (mg/kg) | Comment               |
| **Risk assessment residue definition 1:** methylisothiocyanate (MITC) | | | |
| Grapefruits | 0.01* STMR (dazomet) | 0.01* HR (dazomet) | | |
| Oranges     | 0.01* STMR (dazomet) | 0.01* HR (dazomet) | | |
| Lemons      | 0.01* STMR (dazomet) | 0.01* HR (dazomet) | | |
| Limes       | 0.01* STMR (dazomet) | 0.01* HR (dazomet) | | |
| Mandarins   | 0.01* STMR (dazomet) | 0.01* HR (dazomet) | | |
| Almonds     | 0.01* STMR (dazomet, tentative) | 0.01* HR (dazomet, tentative) | | |
| Brazil nuts | 0.01* STMR (dazomet, tentative) | 0.01* HR (dazomet, tentative) | | |
| Cashew nuts | 0.01* STMR (dazomet, tentative) | 0.01* HR (dazomet, tentative) | | |
| Chestnuts   | 0.01* STMR (dazomet, tentative) | 0.01* HR (dazomet, tentative) | | |
| Coconuts    | 0.01* STMR (dazomet, tentative) | 0.01* HR (dazomet, tentative) | | |
| Hazelnuts/cobnuts | 0.01* STMR (dazomet, tentative) | 0.01* HR (dazomet, tentative) | | |
| Macadamias  | 0.01* STMR (dazomet, tentative) | 0.01* HR (dazomet, tentative) | | |
| Pecans      | 0.01* STMR (dazomet, tentative) | 0.01* HR (dazomet, tentative) | | |

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| Commodity                        | Chronic risk assessment | Acute risk assessment |
|---------------------------------|-------------------------|-----------------------|
|                                 | Input value            | Comment               | Input value | Comment               |
|                                 | (mg/kg)                |                       | (mg/kg)    |                       |
| Pine nut kernels                | 0.01*                  | STMR (dazomet, tentative) | 0.01*      | HR (dazomet, tentative) |
| Pistachios                      | 0.01*                  | STMR (dazomet, tentative) | 0.01*      | HR (dazomet, tentative) |
| Walnuts                         | 0.01*                  | STMR (dazomet, tentative) | 0.01*      | HR (dazomet, tentative) |
| Apples                          | 0.01*                  | STMR (metam/dazomet)   | 0.01*      | HR (metam/dazomet)    |
| Pears                           | 0.01*                  | STMR (metam/dazomet)   | 0.01*      | HR (metam/dazomet)    |
| Quinces                         | 0.01*                  | STMR (dazomet)         | 0.01*      | HR (dazomet)          |
| Medlars                         | 0.01*                  | STMR (dazomet)         | 0.01*      | HR (dazomet)          |
| Loquats/Japanese medlars        | 0.01*                  | STMR (dazomet)         | 0.01*      | HR (dazomet)          |
| Apricots                        | 0.01*                  | STMR (dazomet)         | 0.01*      | HR (dazomet)          |
| Cherries (sweet)                | 0.01*                  | STMR (metam/dazomet)   | 0.01*      | HR (metam/dazomet)    |
| Peaches                         | 0.01*                  | STMR (dazomet)         | 0.01*      | HR (dazomet)          |
| Plums                           | 0.01*                  | STMR (metam/dazomet)   | 0.01*      | HR (metam/dazomet)    |
| Table grapes                    | 0.01*                  | STMR (metam/dazomet)   | 0.01*      | HR (metam/dazomet)    |
| Wine grapes                     | 0.01*                  | STMR (metam/dazomet)   | 0.01*      | HR (metam/dazomet)    |
| Strawberries                    | 0.01*                  | STMR (metam, tentative) | 0.02       | HR (metam, tentative) |
| Blackberries                    | 0.01*                  | STMR (metam/dazomet)   | 0.01*      | HR (metam/dazomet)    |
| Dewberries                      | 0.01*                  | STMR (dazomet)         | 0.01*      | HR (dazomet)          |
| Raspberries (red and yellow)    | 0.01*                  | STMR (metam/dazomet)   | 0.01*      | HR (metam/dazomet)    |
| Blueberries                     | 0.01*                  | STMR (metam/dazomet)   | 0.01*      | HR (metam/dazomet)    |
| Cranberries                     | 0.01*                  | STMR (metam/dazomet)   | 0.01*      | HR (metam/dazomet)    |
| Currants (black, red and white)| 0.01*                  | STMR (metam/dazomet)   | 0.01*      | HR (metam/dazomet)    |
| Gooseberries (green, red and yellow) | 0.01* | STMR (metam/dazomet) | 0.01*      | HR (metam/dazomet)    |
| Rose hips                       | 0.01*                  | STMR (dazomet)         | 0.01*      | HR (dazomet)          |
| Mulberries (black and white)    | 0.01*                  | STMR (dazomet)         | 0.01*      | HR (dazomet)          |
| Azaroles/Mediterranean medlars  | 0.01*                  | STMR (dazomet)         | 0.01*      | HR (dazomet)          |
| Elderberries                    | 0.01*                  | STMR (dazomet)         | 0.01*      | HR (dazomet)          |
| Figs                            | 0.01*                  | STMR (dazomet)         | 0.01*      | HR (dazomet)          |
| Table olives                    | 0.01*                  | STMR (dazomet)         | 0.01*      | HR (dazomet)          |
| Kumquats                        | 0.01*                  | STMR (dazomet)         | 0.01*      | HR (dazomet)          |
| Kaki/Japanese persimmons        | 0.01*                  | STMR (dazomet)         | 0.01*      | HR (dazomet)          |
| Kiwi fruits (green, red, yellow)| 0.01*                  | STMR (dazomet)         | 0.01*      | HR (dazomet)          |
| Prickly pears/cactus fruits     | 0.01*                  | STMR (dazomet)         | 0.01*      | HR (dazomet)          |
| Avocados                        | 0.01*                  | STMR (dazomet)         | 0.01*      | HR (dazomet)          |
| Mangoes                         | 0.01*                  | STMR (dazomet)         | 0.01*      | HR (dazomet)          |
| Granate apples/pomegranates     | 0.01*                  | STMR (dazomet)         | 0.01*      | HR (dazomet)          |
| Potatoes                        | 0.02                   | EU MRL (metam)         | 0.02       | EU MRL (metam)        |
| Sweet potatoes                  | 0.02                   | EU MRL (metam)         | 0.02       | EU MRL (metam)        |
| Yams                            | 0.02                   | EU MRL (metam)         | 0.02       | EU MRL (metam)        |
| Beetroots                       | 0.01*                  | STMR (dazomet, tentative) | 0.011    | HR (dazomet, tentative) |
| Commodity                        | Chronic risk assessment | Acute risk assessment |
|---------------------------------|-------------------------|-----------------------|
|                                 | Input value (mg/kg)     | Comment               |
|                                 |                         | Input value (mg/kg)   | Comment               |
| Carrots                         | 0.01*                   | STMR (dazomet, tentative) | 0.011 | HR (dazomet, tentative) |
| Celeriacs/turpin rooted celeries| 0.01*                   | STMR (dazomet, tentative) | 0.011 | HR (dazomet, tentative) |
| Horseradishes                   | 0.01*                   | STMR (dazomet, tentative) | 0.011 | HR (dazomet, tentative) |
| Jerusalem artichokes            | 0.01*                   | STMR (dazomet, tentative) | 0.011 | HR (dazomet, tentative) |
| Parsnips                        | 0.01*                   | STMR (dazomet, tentative) | 0.011 | HR (dazomet, tentative) |
| Parsley roots/Hamburg roots parsley | 0.01*                   | STMR (dazomet, tentative) | 0.011 | HR (dazomet, tentative) |
| Radishes                        | 0.01*                   | STMR (dazomet, tentative) | 0.03  | HR (dazomet, tentative) |
| Salsifies                       | 0.01*                   | STMR (dazomet, tentative) | 0.011 | HR (dazomet, tentative) |
| Swedes/rutabagas                | 0.01*                   | STMR (dazomet, tentative) | 0.011 | HR (dazomet, tentative) |
| Turnips                         | 0.01*                   | STMR (dazomet, tentative) | 0.011 | HR (dazomet, tentative) |
| Onions                          | 0.012                   | STMR (metam)          | 0.09  | HR (metam)              |
| Shallots                        | 0.02                    | EU MRL (metam)        | 0.02  | EU MRL (metam)          |
| Tomatoes                        | 0.01*                   | STMR (metam, tentative) | 0.22  | HR (metam, tentative)   |
| Sweet peppers/bell peppers      | 0.01*                   | STMR (dazomet, tentative) | 0.08  | HR (dazomet, tentative) |
| Aubergines/eggplants            | 0.01*                   | STMR (metam, tentative) | 0.22  | HR (metam, tentative)   |
| Okra/lady's fingers             | 0.01*                   | STMR (dazomet, tentative) | 0.08  | HR (dazomet, tentative) |
| Cucumbers                       | 0.01*                   | STMR (metam, tentative) | 0.34  | HR (metam, tentative)   |
| Gherkins                        | 0.01*                   | STMR (metam, tentative) | 0.34  | HR (metam, tentative)   |
| Courgettes                      | 0.01*                   | STMR (metam, tentative) | 0.34  | HR (metam, tentative)   |
| Melons                          | 0.01*                   | STMR (dazomet, tentative) | 0.08  | HR (dazomet, tentative) |
| Pumpkins                        | 0.01*                   | STMR (dazomet, tentative) | 0.08  | HR (dazomet, tentative) |
| Watermelons                     | 0.01*                   | STMR (dazomet, tentative) | 0.08  | HR (dazomet, tentative) |
| Broccoli                        | 0.02                    | EU MRL (dazomet)      | 0.02  | EU MRL (dazomet)        |
| Cauliflowers                    | 0.02                    | EU MRL (dazomet)      | 0.02  | EU MRL (dazomet)        |
| Head cabbages                   | 0.02                    | EU MRL (dazomet)      | 0.02  | EU MRL (dazomet)        |
| Chinese cabbages/pe-tsai        | 0.01*                   | STMR (dazomet, tentative) | 0.02  | HR (dazomet, tentative) |
| Kales                           | 0.01*                   | STMR (dazomet, tentative) | 0.02  | HR (dazomet, tentative) |
| Lamb's lettuces/corn salads     | 0.01*                   | STMR (dazomet, tentative) | 0.02  | HR (dazomet, tentative) |
| Lettuces                        | 0.01*                   | STMR (dazomet, tentative) | 0.02  | HR (dazomet, tentative) |
| Escaroles/broad-leaved endives  | 0.01*                   | STMR (dazomet, tentative) | 0.02  | HR (dazomet, tentative) |
| Cresses and other sprouts and shoots | 0.01*                   | STMR (dazomet, tentative) | 0.02  | HR (dazomet, tentative) |
| Land cresses                     | 0.01*                   | STMR (dazomet, tentative) | 0.02  | HR (dazomet, tentative) |
| Roman rocket/ruco/a             | 0.01*                   | STMR (dazomet, tentative) | 0.02  | HR (dazomet, tentative) |
| Red mustards                    | 0.01*                   | STMR (dazomet, tentative) | 0.02  | HR (dazomet, tentative) |
| Baby leaf crops (including brassica species) | 0.01*                   | STMR (dazomet, tentative) | 0.02  | HR (dazomet, tentative) |
| Spinaches                       | 0.02                    | STMR (dazomet, tentative) | 0.09  | HR (dazomet, tentative) |
| Purslanes                       | 0.02                    | STMR (dazomet, tentative) | 0.09  | HR (dazomet, tentative) |
| Chards/beet leaves              | 0.02                    | STMR (dazomet, tentative) | 0.09  | HR (dazomet, tentative) |
| Watercresses                    | 0.02                    | EU MRL (metam)        | 0.02  | EU MRL (metam)          |
| Witloofs/Belgian endives        | 0.02                    | EU MRL (metam)        | 0.02  | EU MRL (metam)          |
### Consumer risk assessment for DMTU

| Commodity                      | Chronic risk assessment | Acute risk assessment |
|--------------------------------|-------------------------|-----------------------|
|                                | Input value (mg/kg)     | Comment               | Input value (mg/kg) | Comment               |
| Apples                         | 0.01*                   | STMR (metam)          | 0.01*               | HR (metam)            |
| Pears                          | 0.01*                   | STMR (metam)          | 0.01*               | HR (metam)            |
| Cherries (sweet)               | 0.01*                   | STMR (metam)          | 0.01*               | HR (metam)            |
| Plums                          | 0.01*                   | STMR (metam)          | 0.01*               | HR (metam)            |
| Table grapes                   | 0.01*                   | STMR (metam)          | 0.01*               | HR (metam)            |
| Wine grapes                    | 0.01*                   | STMR (metam)          | 0.01*               | HR (metam)            |
| Strawberries                   | 0.01*                   | STMR (metam, tentative)| 0.03                | HR (metam, tentative)|
| Blackberries                  | 0.01*                   | STMR (metam)          | 0.01*               | HR (metam)            |
| Raspberries (red and yellow)   | 0.01*                   | STMR (metam)          | 0.01*               | HR (metam)            |
| Blueberries                   | 0.01*                   | STMR (metam)          | 0.01*               | HR (metam)            |
| Cranberries                   | 0.01*                   | STMR (metam)          | 0.01*               | HR (metam)            |

**Risk assessment residue definition 2: N,N'-dimethylthiourea (DMTU)**

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

**STMR/HR (dazomet):** The risk assessment values are derived from a dazomet use (EFSA, 2019). The GAP on dazomet is less critical or there is no GAP authorised on dazomet.

**STMR/HR (metam):** The risk assessment values are derived from a metam use. The GAP on dazomet is less critical or there is no GAP authorised on dazomet.

**STMR/HR (dazomet/metam):** Same risk assessment values are derived from metam or dazomet uses.
| Commodity                              | Chronic risk assessment | Acute risk assessment |
|---------------------------------------|------------------------|-----------------------|
|                                       | Input value (mg/kg)    | Comment               | Input value (mg/kg) | Comment               |
| **Currants (black, red and white)**   | 0.01*                  | STMR (metam)          | 0.01*               | HR (metam)            |
| **Gooseberries (green, red and yellow)** | 0.01*                  | STMR (metam)          | 0.01*               | HR (metam)            |
| **Potatoes**                          | –                      | No data available     | –                   | No data available     |
| **Sweet potatoes**                    | –                      | No data available     | –                   | No data available     |
| **Yams**                              | –                      | No data available     | –                   | No data available     |
| **Beetroots**                         | –                      | No data available     | –                   | No data available     |
| **Carrots**                           | 0.09                   | STMR (metam, tentative)| 0.23                | HR (metam, tentative) |
| **Celeriacs/turnip rooted celeries**  | –                      | No data available     | –                   | No data available     |
| **Horseradishes**                     | –                      | No data available     | –                   | No data available     |
| **Jerusalem artichokes**              | 0.09                   | STMR (metam, tentative)| 0.23                | HR (metam, tentative) |
| **Parsnips**                          | 0.09                   | STMR (metam, tentative)| 0.23                | HR (metam, tentative) |
| **Parsley roots/Hamburg roots parsley** | 0.09                   | STMR (metam, tentative)| 0.23                | HR (metam, tentative) |
| **Radishes**                          | 0.09                   | STMR (metam, tentative)| 0.23                | HR (metam, tentative) |
| **Salsifis**                          | –                      | No data available     | –                   | No data available     |
| **Sweeds/rutabagas**                  | –                      | No data available     | –                   | No data available     |
| **Turnips**                           | –                      | No data available     | –                   | No data available     |
| **Onions**                            | 0.01                   | STMR (metam, tentative)| 0.35                | HR (metam, tentative) |
| ** Shallots**                         | –                      | No data available     | –                   | No data available     |
| **Tomatoes**                          | 0.01*                  | STMR (metam, tentative)| 0.01*               | HR (metam, tentative) |
| **Sweet peppers/bell peppers**       | –                      | No data available     | –                   | No data available     |
| **Aubergines/eggplants**              | 0.01*                  | STMR (metam, tentative)| 0.01*               | HR (metam, tentative) |
| **Okra/lady's fingers**               | –                      | No data available     | –                   | No data available     |
| **Cucumbers**                         | 0.01*                  | STMR (metam)          | 0.07                | HR (metam)            |
| **Gherkins**                          | 0.01*                  | STMR (metam)          | 0.07                | HR (metam)            |
| **Courgettes**                        | 0.01*                  | STMR (metam)          | 0.07                | HR (metam)            |
| **Melons**                            | –                      | No data available     | –                   | No data available     |
| **Pumpkins**                          | –                      | No data available     | –                   | No data available     |
| **Watermelons**                       | –                      | No data available     | –                   | No data available     |
| **Lamb's lettuces/com salads**        | 0.01                   | STMR (metam, tentative)| 0.14                | HR (metam, tentative) |
| **Lettuces**                          | 0.01                   | STMR (metam, tentative)| 0.14                | HR (metam, tentative) |
| **Escaroles/broad-leaved endives**    | 0.01                   | STMR (metam, tentative)| 0.14                | HR (metam, tentative) |
| **Cresses and other sprouts and shoots** | 0.01                   | STMR (metam, tentative)| 0.14                | HR (metam, tentative) |
| **Land cresses**                      | 0.01                   | STMR (metam, tentative)| 0.14                | HR (metam, tentative) |
| **Roman rocket/rucola**               | 0.01                   | STMR (metam, tentative)| 0.14                | HR (metam, tentative) |
| **Red mustards**                      | 0.01                   | STMR (metam, tentative)| 0.14                | HR (metam, tentative) |
| **Baby leaf crops (including brassica species)** | 0.01                   | STMR (metam, tentative)| 0.14                | HR (metam, tentative) |
| **Spinaches**                         | 0.01*                  | STMR (metam, tentative)| 0.01*               | HR (metam, tentative) |
| **Purslaines**                        | 0.01                   | STMR (metam, tentative)| 0.14                | HR (metam, tentative) |
| **Chards/beet leaves**                | 0.01                   | STMR (metam, tentative)| 0.14                | HR (metam, tentative) |
| **Watercresses**                      | –                      | No data available     | –                   | No data available     |
| Commodity                        | Chronic risk assessment | Acute risk assessment |
|---------------------------------|-------------------------|-----------------------|
|                                 | Input value (mg/kg)     | Comment               | Input value (mg/kg) | Comment               |
| Witloofs/Belgian endives        | –                       | No data available     | –                   | No data available     |
| Chervil                         | 0.01                    | STMR (metam, tentative)| 0.14                | HR (metam, tentative) |
| Chives                          | 0.01                    | STMR (metam, tentative)| 0.14                | HR (metam, tentative) |
| Celery leaves                   | 0.01                    | STMR (metam, tentative)| 0.14                | HR (metam, tentative) |
| Parsley                         | 0.01                    | STMR (metam, tentative)| 0.14                | HR (metam, tentative) |
| Sage                            | 0.01                    | STMR (metam, tentative)| 0.14                | HR (metam, tentative) |
| Rosemary                        | 0.01                    | STMR (metam, tentative)| 0.14                | HR (metam, tentative) |
| Thyme                           | 0.01                    | STMR (metam, tentative)| 0.14                | HR (metam, tentative) |
| Basil and edible flowers        | 0.01                    | STMR (metam, tentative)| 0.14                | HR (metam, tentative) |
| Laurel/bay leave                | 0.01                    | STMR (metam, tentative)| 0.14                | HR (metam, tentative) |
| Tarragon                        | 0.01                    | STMR (metam, tentative)| 0.14                | HR (metam, tentative) |
| Herbal infusions from roots     | –                       | No data available     | –                   | No data available     |
| Sugar beet roots                | –                       | No data available     | –                   | No data available     |

STMR: supervised trials median residue; HR: highest residue; MRL: maximum residue level.
*
*: Indicates that the input value is proposed at the limit of quantification.
(a): The input values for DMTU are derived from metam uses only (limited data). There is no data on DMTU for supporting the GAPs on dazomet (EFSA, 2019).
Appendix E – Decision tree for deriving MRL recommendations

Evaluation of the GAPs and available residues data at EU level

- GAP or DB > 0.1 mg/kg DM in EU?
  - No
  - Yes

- MRL derived in Section 3?
  - No
  - Yes

- MRL fully supported by data?
  - No
  - Yes

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

- Not considered for the RA.
- Current EU MRL is included in the RA.
  - Risk identified?
  - Yes
  - No

- Median/highest values are included in the RA.
  - Yes
  - No

- Tentative median/highest values are included in the RA.
  - Risk identified?
  - Yes
  - No

- Tentative median/highest values are included in the RA.
  - Yes
  - No

- Tentative median/highest values are included in the RA.
  - Yes
  - No

- Tentative median/highest values are included in the RA.
  - Yes
  - No

- Tentative median/highest values are included in the RA.
  - Yes
  - No

Recommendations resulting from EU authorisations and import tolerances

(A) Specific LOQ or default MRL?
- Specific LOQ or default MRL?
- Specific LOQ or default MRL?
- Specific LOQ or default MRL?
- Specific LOQ or default MRL?
- MRL is recommended.

Comparison with CXLs
**Comparison of the EU recommendation with the existing CXL**

- **CXL available?**
  - Yes
    - RD comparable?
      - Yes
        - CXL higher?
          - Yes
        - No
          - No
      - No
      - No
  - No
  - No

- **Maintain EU recommendation indicating that no CXL is available.**

- **Maintain EU recommendation indicating CXL is not compatible.**

- **Maintain EU recommendation indicating that CXL is covered.**

- **Maintain EU recommendation; higher CXL is not safe for consumer.**

- **Maintain current CXL or EU recommendation?**

- **Maintain EU recommendation; higher CXL is not safe for consumer.**

- **CXL is recommended; EU recommendation is covered as well.**

**Consumer risk assessment with consideration of the existing CXL**

- **Input values for the RA remain unchanged.**

- **Input values for the RA remain unchanged.**

- **Input values for the RA remain unchanged.**

- **CXL is included in the RA.**

- **Codex median/ highest residues are included in the RA.**

- **Risk identified?**
  - Yes
  - No

**Recommendations with consideration of the existing CXL**

- **Maintain EU recommendation indicating that no CXL is available.**

- **Maintain EU recommendation indicating CXL is not compatible.**

- **Maintain EU recommendation indicating that CXL is covered.**

- **Maintain current CXL or EU recommendation?**

- **Maintain EU recommendation; higher CXL is not safe for consumer.**

- **CXL is recommended; EU recommendation is covered as well.**
## Appendix F – Used compound codes

| Code/trivial name<sup>(a)</sup> | IUPAC name/SMILES notation/InChiKey<sup>(b)</sup> | Structural formula<sup>(c)</sup> |
|--------------------------------|-----------------------------------------------|-------------------------------|
| **Dazomet**                   | 3,5-dimethyl-1,3,5-thiadiazinane-2-thione S=CSC(N(C)CN1C QAYICIQNSGETAS-UHFFFAOYSA-N | ![](image) |
| **Metam**                     | methylcarbamodithioic acid SC(NC)=S HYVJHGFQGFXBRZ-UHFFFAOYSA-N | ![](image) |
| methylisothiocyanate (MITC)   | methyl isothiocyanate or isothiocyanatomethane CN=C=S LGDHSYDSCRFA-UHFFFAOYSA-N | ![](image) |
| *N,N*-dimethylthiourea (DMTU) | *N,N*-dimethylthiourea or 1,3-dimethylthiourea S=C(NC)NC VLCDUOXHFNUCK-UHFFFAOYSA-N | ![](image) |
| methylamine                   | Methanamine CN BAVYZALUXFZLV-UHFFFAOYSA-N | ![](image) |
| 1-methylthiourea (MMTU)       | 1-methylthiourea S=C(N)NC KQJQICVXLJTQW-Q-UHFFFAOYSA-N | ![](image) |
| 1,1,3-trimethylthiourea (TMTU)| 1,1,3-trimethylthiourea S=C(NC)N(C)C JAEZSIYWDWMNN-UHFFFAOYSA-N | ![](image) |

<sup>(a)</sup> The metabolite name in bold is the name used in the conclusion.

<sup>(b)</sup> ACD/Name 2015 ACD/Labs 2015 Release (File version N20E41, Build 75170, 19 December 2014).

<sup>(c)</sup> ACD/ChemSketch 2015 ACD/Labs 2015 Release (File version C10H41, Build 75059, 17 December 2014).