

## REASONED OPINION

### Review of the existing maximum residue levels (MRLs) for diphenylamine according to Article 12 of Regulation (EC) No 396/2005<sup>1</sup>

European Food Safety Authority<sup>2,3</sup>

European Food Safety Authority (EFSA), Parma, Italy

#### SUMMARY

A decision not to include diphenylamine in Annex I to Directive 91/414/EEC entered into force on 21 December 2009. EFSA is therefore required to provide a reasoned opinion on the review of the existing MRLs for that active substance in compliance with Article 12(1) of Regulation (EC) No 396/2005. Considering that the use of diphenylamine is no longer authorised within the European Union and that no import tolerances were notified by designated rapporteur Member State Ireland, EFSA based its assessment mainly on the conclusions derived by EFSA in the framework of Directive 91/414/EEC and the MRLs established by the Codex Alimentarius Commission.

On 22 March 2011 EFSA issued a draft reasoned opinion that was circulated to Member State experts for consultation. Comments received by 27 May 2011 were considered for finalisation of this reasoned opinion. The following conclusions are derived.

The toxicological profile of diphenylamine was evaluated in the framework of Directive 91/414/EEC, which resulted in an ADI of 0.075 mg/kg bw/d. This toxicological reference value was established for parent compound diphenylamine and an ARfD was not deemed necessary.

Primary crop metabolism of diphenylamine was investigated following post harvest application on apple, hereby covering group of fruits and fruiting vegetables. Parent compound was always the major residue but identification of metabolites was considered insufficient by EFSA. In particular, the potential for presence or formation of nitrosamine in apple metabolism was not addressed. Consequently, the enforcement residue definition as derived by JMPR (parent compound) is considered appropriate by EFSA and validated analytical methods for enforcement of the proposed residue definition are available with a LOQ of 0.05 mg/kg. For risk assessment purposes, however, further investigation of the unidentified metabolites and the potential occurrence of nitrosamines in apples would be needed in order to confirm this residue definition at EU level.

Moreover, no study investigating potential breakdown or reaction products of diphenylamine residues in processed commodities was provided. In particular, the formation of nitrosamines in processed commodities was not investigated while hydrolysis studies investigating the physical and chemical properties of the active substances indicate that, under certain pH conditions, nitrosamine compounds

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<sup>2</sup> Correspondence: pesticides.mrl@efsa.europa.eu

<sup>3</sup> Acknowledgement: EFSA wishes to thank the rapporteur Member State Ireland for the preparatory work on this scientific output.

may be formed. The RMS highlights that studies investigating the occurrence of nitrosamines in processed commodities are currently ongoing. However, as long as these studies are not finalised, they can not be considered by EFSA.

CXLs are set on certain foods of animal origin. EFSA considers however that the residue definition in milk is disputable, while the residue definition for enforcement and risk assessment in other animal commodities can be limited to parent compound (provided that the residue is considered as fat soluble). EFSA also points out that occurrence of nitrosamines in commodities of animal origin was not investigated and that no analytical method is available for enforcement of diphenylamine in foods from animal origin.

Consequently, CXLs for apples pears and commodities of animal origin could not be considered for risk assessment because the potential occurrence of nitrosamines was not sufficiently investigated by the JMPR, in particular for processed commodities.

EFSA also assessed whether the proposed LOQ of 0.05 mg/kg provides a sufficient level of consumer protection and, assuming this LOQ in the consumer exposure calculation, the highest chronic exposure represented 4.8 % of the ADI (French toddler).

Based on the above assessment, EFSA does not recommend inclusion of this active substance in Annex IV to Regulation (EC) No 396/2005. EFSA also does not recommend inclusion of the existing CXLs for diphenylamine in Annex II to Regulation (EC) No 396/2005.

Considering that the enforcement of potential illegal uses falls under the remit of risk managers, EFSA is not in a position to recommend whether the default MRL of 0.01 mg/kg, as defined by regulation (EC) No 396/2005, should apply or whether the setting of a specific LOQ is necessary. EFSA notes, however, that parent diphenylamine is considered as a good indicator for enforcement of potential illegal uses and that a LOQ of 0.05\*mg/kg would provide a satisfactory level of protection for European consumers.

EFSA also highlighted that a resubmission procedure for approval of diphenylamine under Regulation (EC) No 1107/2009 is currently ongoing. This assessment is not yet taking into consideration the outcome of that resubmission procedure. However, if the resubmission procedure for diphenylamine would result in the approval of the active substance, EFSA will revise its position and MRLs will be revised in accordance with Article 12 of Regulation (EC) No 396/2005.

#### **KEY WORDS**

Diphenylamine, MRL review, Regulation (EC) No 396/2005, consumer risk assessment, bridged diphenyl fungicides, anti-oxidant, nitrosamines.

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## BACKGROUND

Regulation (EC) No 396/2005<sup>4</sup> establishes the rules governing the setting as well as the review of pesticide MRLs at Community level. Article 12(1) of that regulation lays down that 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/EEC<sup>5</sup> a reasoned opinion on the review of the existing MRLs for that active substance. As a decision not to include diphenylamine in Annex I to Directive 91/414/EEC entered into force on 21 December 2009, EFSA initiated the review of all existing MRLs for that diphenylamine and a task with the reference number EFSA-Q-2010-00188 was included in the EFSA Register of Questions.

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 the few representative uses evaluated in the framework of that directive might no longer be relevant because the use of active substances that are not included in Annex I is not allowed within the EU. Moreover, non-included substances might still be authorised in third countries requiring the establishment of import tolerances in Regulation (EC) No 396/2005.

In order to have an overview on the pesticide residues data that have been considered for the setting of import tolerances, EFSA developed the Pesticide Residue Overview File (PROFile). The PROFile is an electronic inventory of all pesticide residues data relevant to the risk assessment as well as the MRL setting for a given diphenylamine. 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 and;
- the analytical methods for enforcement of the proposed MRLs.

Ireland, the designated rapporteur Member State (RMS) in the framework of Directive 91/414/EEC, was asked to complete the PROFile for diphenylamine and to prepare a supporting evaluation report. Considering however that no import tolerances were notified to the RMS, submission of the requested information was not considered necessary.

A draft reasoned opinion was issued by EFSA on 22 March 2011 and submitted to Member States (MS) for commenting. All MS comments received by 27 May 2011 were considered by EFSA for finalization of the reasoned opinion.

## TERMS OF REFERENCE

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

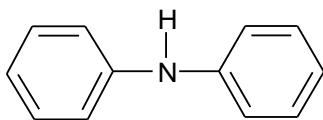
- the inclusion of the diphenylamine in Annex IV to the Regulation, when appropriate;
- the necessity of setting new MRLs for the diphenylamine or deleting/modifying existing MRLs set out in Annex II or III of the Regulation;
- the inclusion of the recommended MRLs in Annex II or III to the Regulation;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

<sup>4</sup>Commission Regulation (EC) No 396/2005 of 23 February 2005. OJ L 70, 16.3.2005, p. 1-16.

<sup>5</sup>Council Directive 91/414/EEC of 15 July 1991, OJ L 230, 19.8.1991, p. 1-32.

## THE ACTIVE SUBSTANCE AND ITS USE PATTERN

Diphenylamine is the ISO common name and IUPAC name of the active substance.



Diphenylamine belongs to the group of bridged diphenyl compounds which are used as fungicide. It is an anti-oxidant, which prevents oxidation of the naturally occurring terpenes, thereby controlling development of storage scald. Diphenylamine is not translocated in fruit, since the fruit is fully developed at the time of application and has already been harvested.

Diphenylamine was evaluated in the framework of Directive 91/414/EEC with Ireland being the designated rapporteur Member State (RMS). The representative use supported for the peer review process was a drench application on apples at a rate of 0.20 kg a.s./hL within 7 days of harvesting. Following the peer review, which was carried out by EFSA, a decision on non-inclusion of diphenylamine in Annex I to Directive 91/414/EEC was published by means of Commission Directive 2009/859/EC<sup>6</sup>, entering into force on 21 December 2009. Diphenylamine was not proposed for inclusion in Annex I to Directive 91/414/EEC as a number of data gaps were identified during the peer review. In particular, the occurrence of nitrosamines (carcinogens) was not sufficiently investigated in primary crops, in food of animal origin and in processed commodities.

EU MRLs for diphenylamine in products of plant origin have been set for the first time in 2008 by means of Commission Regulation (EC) No 149/2008<sup>7</sup> establishing Annexes II, III and IV of Regulation (EC) No 396/2005. These temporary MRLs were derived from the MRLs that have been set at national level before Regulation (EC) No 396/2005 entered into force. All existing EU MRLs, which are established for the parent compound only, are summarized in Appendix B.1 to this document. CXLs for diphenylamine were also established by the Codex Alimentarius Commission and are reported in Appendix B.2 to this reasoned opinion. These CXLs refer to parent compound only.

According to the decision of non-inclusion in the Annex I of Directive 91/414/EEC, plant protection products containing diphenylamine are not authorised in EU Member States. For the purpose of this MRL review, the RMS did not report any use authorised in third countries that might have a significant impact on international trade. A resubmission procedure for approval of diphenylamine under Regulation (EC) No 1107/2009<sup>8</sup> is currently ongoing. This assessment is not yet taking into consideration the outcome of that resubmission procedure.

<sup>6</sup> Commission Directive 2009/859/EC of 30 November 2009, OJ L 314 1.12.2009, p. 79-80

<sup>7</sup> Commission Regulation (EC) No 149/2008 of 29 January 2008. OJ L 58, 1.3.2008, p. 1-398

<sup>8</sup> Regulation (EC) No 1107/2009 of 21 October 2009, OJ 309, 24.11.2009, p. 1-50

## ASSESSMENT

Although no uses authorised in third countries were notified to the RMS, CXLs are available for this active substance. European consumers may therefore be exposed to residues of this active substance, in particular through imported products, and an assessment of the consumer exposure resulting from these CXLs is carried out by EFSA. EFSA mainly bases its assessment on the conclusion on the peer review of the pesticide risk assessment of the active substance diphenylamine (EFSA, 2008) and on the JMPR Evaluation report (FAO, 2001). The assessment is performed in accordance with the legal provisions of the Uniform Principles for the Evaluation of the Authorization of Plant Protection Products adopted by Commission Regulation (EU) No 546/2011<sup>9</sup> and the currently applicable guidance documents relevant for the consumer risk assessment of pesticide residues (EC, 1996, 1997a, 1997b, 1997c, 1997d, 1997e, 1997f, 1997g, 2000, 2004, 2008, 2010).

EFSA also highlights that a resubmission procedure for approval of diphenylamine under Regulation (EC) No 1107/2009 is currently ongoing. This assessment is not yet taking into consideration the outcome of that resubmission procedure. However, if the resubmission procedure for diphenylamine would result in the approval of the active substance, EFSA will revise its position and MRLs will be revised in accordance with Article 12 of Regulation (EC) No 396/2005.

### 1. Methods of analysis

#### 1.1. Methods for enforcement of residues in food of plant origin

The EFSA conclusion regarding diphenylamine mentions that the DFG S19 method using GC-NPD would be suitable for analysis of diphenylamine and validated with a LOQ of 0.05 mg/kg in high water content, high fat content, acidic and dry commodities (EFSA, 2008). In addition, the QuEChERS method (CEN, 2008) is mentioned as sufficiently validated for high water and high acid content commodities using GC-MS. In this case a LOQ of 0.02 mg/kg was achieved.

**Table 1-1:** Recovery data for the analysis of diphenylamine in different crop groups using the QuEChERS method in combination with GC-MS (EURL, 2011)

Commodity group	Spiking levels (mg/kg)		Recoveries			No of labs
	Min.	Max.	Mean (%)	RSD (%)	n	
Acidic	0.02	0.5	105	11	105	6
Watery	0.02	0.5	100	14	201	10

Hence, EFSA concludes that parent diphenylamine could be routinely enforced in all commodities of plant origin with an overall LOQ of 0.05 mg/kg.

#### 1.2. Methods for enforcement of residues in food of animal origin

No analytical methods for commodities of animal origin have been reported.

<sup>9</sup> Regulation (EU) No 546/2011 of 10 June 2011. OJ L 155, 11.06.2011, p. 127-175.

## 2. Mammalian toxicology

The toxicological assessment of diphenylamine was peer reviewed under Directive 91/414/EEC and toxicological reference values were established by EFSA (2008). These toxicological reference values are summarized in Table 2-1.

**Table 2-1:** Overview of the toxicological reference values

	Source	Year	Value	Study relied upon	Safety factor
<b>diphenylamine</b>					
ADI	EFSA	2008	0.075 mg/kg bw/d	2-year rat	100
ARfD	EFSA	2008	Not necessary	-	-

## 3. Residues

### 3.1. Nature and magnitude of residues in plant

#### 3.1.1. Primary crops

##### 3.1.1.1. Nature of residues

Metabolism of diphenylamine was investigated in apples having received a post-harvest treatment. Total residues declined only slowly over storage time. Upon analysis, parent compound was always the major residue and it is therefore considered as an appropriate indicator compound for enforcement purposes. However, identification of metabolites was considered insufficient by the meeting of experts and therefore further investigation is required. Also the potential for presence or formation of nitrosamine in apple metabolism should be addressed by further data. Thus, the plant residue definition for risk assessment and enforcement was provisionally proposed as the parent compound in the framework of the peer review (EFSA, 2008). This possible occurrence of nitrosamine linked to the use of diphenylamine in mixture with other pesticides or to processing was not evaluated by JMPR (FAO, 2001).

**Table 3-1:** Summary of available metabolism studies in plants

Group	Crop	Label position	Method, F or G <sup>(a)</sup>	Application and sampling details			
				Rate	No	Sampling	Remarks
Fruits and fruiting vegetable	Apple	[ <sup>14</sup> C] single ring labelled diphenylamine	G	2.5 kg/hl: 50 ml solution at a concentration of 28.1 mg/ml, diluted with a wash to a final volume of 56 ml	1	12, 24 and 40 weeks after application	

(a): Outdoor/field application (F) or glasshouse/protected/indoor application (G)

Consequently, the enforcement residue definition as derived by JMPR (parent compound) is considered appropriate by EFSA and validated analytical methods for enforcement of the proposed residue definition are available (see section 1.1). For risk assessment purposes, however, further investigation of the unidentified metabolites and the potential occurrence of nitrosamines in apples would be needed in order to confirm this residue definition at EU level.

#### 3.1.1.2. Magnitude of residues

The use of diphenylamine is no longer authorized in Europe but CXLs have been established (FAO, 2001). The existing CXLs for diphenylamine and their corresponding risk assessment values are summarised in Appendix B.2.

#### 3.1.1.3. Effect of industrial processing and/or household preparation

No study was provided that investigated potential breakdown or reaction products of diphenylamine residues in processed commodities. This point was already considered as a data gap in the framework of the peer review because apples can be transformed, not only at industrial level but also at household level (puree, juice, etc.). In particular, the formation of nitrosamines in processed commodities was not investigated while hydrolysis studies investigating the physical and chemical properties of the active substances indicate that, under certain pH conditions, nitrosamine compounds may be formed (EFSA, 2008). The RMS highlights that studies investigating the occurrence of nitrosamines in processed commodities are currently ongoing. However, as long as these studies are not finalised, they can not be considered by EFSA. The effect of processing on the nature and magnitude of residues was also not investigated by the JMPR (FAO, 2001).

### 3.1.2. Rotational crops

Considering however that diphenylamine is no longer authorised within the EU, investigation of residues in rotational crops is not deemed relevant.

## 3.2. Nature and magnitude of residues in livestock

CXLs have been established for apples and processed products thereof may be fed to livestock. Investigation of residues in commodities of animal origin is therefore relevant.

Metabolism studies carried out with lactating goat and laying hens have been assessed by JMPR (FAO, 2001) and during peer review under Directive 91/414/EEC. In the study in goats, diphenylamine was identified as the major residue in kidney (36 % of the TRR) and omental fat (36 % of the TRR), and was also present in milk (7.4 % of the TRR) and liver (5.9 % of the TRR). In addition, in milk, kidney and liver 86 %, 38 % and 11 % of the TRR, respectively, were identified as the glucuronic acid and sulphate conjugates of 4-hydroxy diphenylamine. As these conjugates were the predominant residue in milk it was concluded at EU level that they should be included in the residue definition for risk assessment if they were considered of toxicological significance. For other foods of animal origin, the conclusion at EU level is in compliance with those of the JMPR (FAO, 2001) where the residue definition for assessing compliance with MRLs and for estimating dietary intake was limited to the parent compound (diphenylamine).

Based on a livestock feeding study on dairy cows, JMPR proposed CXLs reported in Appendix B.2. The main concerns identified by EFSA regarding these CXLs are the following:

- The possible occurrence of nitrosamines in animal metabolism which was not investigated by JMPR,



- The necessity identified at EU level to assess toxicological significance of conjugates present in animal matrices (mainly in milk),
- The absence of analytical method for enforcement of diphenylamine in food of animal origin,
- The fact that as diphenylamine is considered as fat soluble, MRL should be set for fat at EU level, while it is not the case for CXLs.

#### 4. Consumer risk assessment

In the framework of this review, as diphenylamine is no longer registered in Europe, only the uses reported by the JMPR (FAO, 2001) should normally be considered for risk assessment. However, CXLs set on apple and pears and reported in Appendix B.2 to this document, cannot be considered for risk assessment because the potential occurrence of nitrosamines was not sufficiently investigated by the JMPR, in particular for processed commodities (see also sections 3.1.1.1 and 3.1.1.3).

In order to assess whether the reported LOQ is sufficiently protective for European consumers, chronic intake calculations assuming a LOQ of 0.05 mg/kg for all products of plant and animal origin, were performed using revision 2 of the EFSA Pesticide Residues Intake Model (PRIMo) (EFSA, 2007). Acute exposure calculations were not carried out because an ARfD was not deemed necessary for this active substance. EFSA highlights that this calculation does not reflect real exposure of consumers to diphenylamine residues; it is a theoretical calculation whether the reported LOQs provide a satisfactory level of protection for the European consumer.

The calculated exposures were compared with the toxicological reference value derived for diphenylamine (see Table 2-1); detailed results of the calculations are presented in Appendix A. The highest chronic exposure was calculated for French toddler, representing 4.8 % of the ADI.

Based on the above calculations, EFSA concludes that the LOQ of 0.05 mg/kg for diphenylamine provides a satisfactory level of consumer protection.

## CONCLUSIONS AND RECOMMENDATIONS

### CONCLUSIONS

The toxicological profile of diphenylamine was evaluated in the framework of Directive 91/414/EEC, which resulted in an ADI of 0.075 mg/kg bw/d. This toxicological reference value was established for parent compound diphenylamine and an ARfD was not deemed necessary.

Primary crop metabolism of diphenylamine was investigated following post harvest application on apple, hereby covering group of fruits and fruiting vegetables. Parent compound was always the major residue but identification of metabolites was considered insufficient by EFSA. In particular, the potential for presence or formation of nitrosamine in apple metabolism was not addressed. Consequently, the enforcement residue definition as derived by JMPR (parent compound) is considered appropriate by EFSA and validated analytical methods for enforcement of the proposed residue definition are available with a LOQ of 0.05 mg/kg. For risk assessment purposes, however, further investigation of the unidentified metabolites and the potential occurrence of nitrosamines in apples would be needed in order to confirm this residue definition at EU level.

Moreover, no study investigating potential breakdown or reaction products of diphenylamine residues in processed commodities was provided. In particular, the formation of nitrosamines in processed

commodities was not investigated while hydrolysis studies investigating the physical and chemical properties of the active substances indicate that, under certain pH conditions, nitrosamine compounds may be formed. The RMS highlights that studies investigating the occurrence of nitrosamines in processed commodities are currently ongoing. However, as long as these studies are not finalised, they can not be considered by EFSA.

CXLs are set on certain foods of animal origin. EFSA considers however that the residue definition in milk is disputable, while the residue definition for enforcement and risk assessment in other animal commodities can be limited to parent compound (provided that the residue is considered as fat soluble). EFSA also points out that occurrence of nitrosamines in commodities of animal origin was not investigated and that no analytical method is available for enforcement of diphenylamine in foods from animal origin.

Consequently, CXLs for apples pears and commodities of animal origin could not be considered for risk assessment because the potential occurrence of nitrosamines was not sufficiently investigated by the JMPR, in particular for processed commodities.

EFSA also assessed whether the proposed LOQ of 0.05 mg/kg provides a sufficient level of consumer protection and, assuming this LOQ in the consumer exposure calculation, the highest chronic exposure represented 4.8 % of the ADI (French toddler).

## RECOMMENDATIONS

Based on the above assessment, EFSA does not recommend inclusion of this active substance in Annex IV to Regulation (EC) No 396/2005. EFSA also does not recommend inclusion of the existing CXLs for diphenylamine in Annex II to Regulation (EC) No 396/2005.

Considering that the enforcement of potential illegal uses falls under the remit of risk managers, EFSA is not in a position to recommend whether the default MRL of 0.01 mg/kg, as defined by regulation (EC) No 396/2005, should apply or whether the setting of a specific LOQ is necessary. EFSA notes, however, that parent diphenylamine is considered as a good indicator for enforcement of potential illegal uses and that a LOQ of 0.05\*mg/kg would provide a satisfactory level of protection for European consumers.

EFSA also highlighted that a resubmission procedure for approval of diphenylamine under Regulation (EC) No 1107/2009 is currently ongoing. This assessment is not yet taking into consideration the outcome of that resubmission procedure. However, if the resubmission procedure for diphenylamine would result in the approval of the active substance, EFSA will revise its position and MRLs will be revised in accordance with Article 12 of Regulation (EC) No 396/2005.

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## APPENDIX A – PESTICIDE RESIDUES INTAKE MODEL (PRIMO)

<b>Diphenylamine</b>			
Status of the active substance:		Code no.	
LOQ (mg/kg bw):		proposed LOQ:	
<b>Toxicological end points</b>			
ADI (mg/kg bw/day):		ARfD (mg/kg bw):	
Source of ADI:		Source of ARfD:	
Year of evaluation:		Year of evaluation:	

Explain choice of toxicological reference values.

The risk assessment has been performed on the basis of the MRLs collected from Member States in April 2006. For each pesticide/commodity the highest national MRL was identified (proposed temporary MRL = pTMRL). The pTMRLs have been submitted to EFSA in September 2006.

### Chronic risk assessment

		TMDI (range) in % of ADI minimum - maximum							
		1                      5							
		No of diets exceeding ADI:		---					
Highest calculated TMDI values in % of ADI	MS Diet	Highest contributor to MS diet (in % of ADI)	Commodity / group of commodities	2nd contributor to MS diet (in % of ADI)	Commodity / group of commodities	3rd contributor to MS diet (in % of ADI)	Commodity / group of commodities	pTMRLs at LOQ (in % of ADI)	
4,8	FR toddler	2,9	PRODUCTS OF ANIMAL ORIGIN	1,2	VEGETABLES	0,2	CEREALS	4,8	
4,7	UK Infant	2,8	PRODUCTS OF ANIMAL ORIGIN	0,7	SUGAR PLANTS	0,4	VEGETABLES	4,7	
4,5	UK Toddler	1,6	PRODUCTS OF ANIMAL ORIGIN	1,5	SUGAR PLANTS	0,4	VEGETABLES	4,5	
4,4	NL child	2,2	PRODUCTS OF ANIMAL ORIGIN	0,8	VEGETABLES	0,4	Apples	4,4	
4,0	DE child	1,6	PRODUCTS OF ANIMAL ORIGIN	0,8	Apples	0,5	VEGETABLES	4,0	
3,7	FR infant	1,8	PRODUCTS OF ANIMAL ORIGIN	1,4	VEGETABLES	0,2	Apples	3,7	
3,2	WHO Cluster diet B	1,0	VEGETABLES	0,8	CEREALS	0,5	PRODUCTS OF ANIMAL ORIGIN	3,2	
3,0	DK child	1,5	PRODUCTS OF ANIMAL ORIGIN	0,7	CEREALS	0,5	VEGETABLES	3,0	
2,6	SE general population 90th percentile	1,2	PRODUCTS OF ANIMAL ORIGIN	0,7	VEGETABLES	0,3	CEREALS	2,6	
2,4	ES child	1,2	PRODUCTS OF ANIMAL ORIGIN	0,3	CEREALS	0,3	VEGETABLES	2,4	
2,2	IE adult	0,6	VEGETABLES	0,4	CEREALS	0,4	PRODUCTS OF ANIMAL ORIGIN	2,2	
2,0	WHO cluster diet E	0,6	VEGETABLES	0,4	PRODUCTS OF ANIMAL ORIGIN	0,4	CEREALS	2,0	
1,9	WHO cluster diet D	0,6	VEGETABLES	0,6	CEREALS	0,5	PRODUCTS OF ANIMAL ORIGIN	1,9	
1,8	WHO regional European diet	0,6	PRODUCTS OF ANIMAL ORIGIN	0,6	VEGETABLES	0,2	CEREALS	1,8	
1,7	WHO Cluster diet F	0,5	PRODUCTS OF ANIMAL ORIGIN	0,5	VEGETABLES	0,4	CEREALS	1,7	
1,5	NL general	0,5	PRODUCTS OF ANIMAL ORIGIN	0,4	VEGETABLES	0,2	CEREALS	1,5	
1,3	ES adult	0,5	PRODUCTS OF ANIMAL ORIGIN	0,3	VEGETABLES	0,2	CEREALS	1,3	
1,3	UK vegetarian	0,3	SUGAR PLANTS	0,3	VEGETABLES	0,2	PRODUCTS OF ANIMAL ORIGIN	1,3	
1,2	FR all population	0,3	PRODUCTS OF ANIMAL ORIGIN	0,3	Berries & small fruit	0,2	VEGETABLES	1,2	
1,2	PT General population	0,4	VEGETABLES	0,4	CEREALS	0,2	Berries & small fruit	1,2	
1,2	UK Adult	0,3	PRODUCTS OF ANIMAL ORIGIN	0,3	SUGAR PLANTS	0,2	VEGETABLES	1,2	
1,2	DK adult	0,5	PRODUCTS OF ANIMAL ORIGIN	0,2	VEGETABLES	0,2	CEREALS	1,2	
1,1	IT kids/toddler	0,6	CEREALS	0,3	VEGETABLES	0,1	Apples	1,1	
1,1	LT adult	0,4	PRODUCTS OF ANIMAL ORIGIN	0,3	VEGETABLES	0,2	CEREALS	1,1	
0,9	FI adult	0,5	PRODUCTS OF ANIMAL ORIGIN	0,2	VEGETABLES	0,1	CEREALS	0,9	
0,8	IT adult	0,3	CEREALS	0,3	VEGETABLES	0,1	Apples	0,8	
0,6	PL general population	0,4	VEGETABLES	0,1	Apples	0,0	Berries & small fruit	0,6	

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

**APPENDIX B – EXISTING EU MAXIMUM RESIDUE LIMITS (MRLs) AND CODEX LIMITS (CXLs)**

Appendix B.1 – Existing EU MRLs

Appendix B.2 – Existing CXLs

## APPENDIX B.1 – EXISTING EU MRLS

(Pesticides - Web Version - EU MRLs (File created on 14 January 2011 16h00mn))

Code number	Groups and examples of individual products to which the MRLs apply (a)	Diphenylamine
100000	1. FRUIT FRESH OR FROZEN; NUTS	
110000	(i) Citrus fruit	0,05*
110010	Grapefruit (Shaddocks, pomelos, sweeties, tangelo, ugli and other hybrids)	0,05*
110020	Oranges (Bergamot, bitter orange, chinotto and other hybrids)	0,05*
110030	Lemons (Citron, lemon)	0,05*
110040	Limes	0,05*
110050	Mandarins (Clementine, tangerine and other hybrids)	0,05*
110990	Others	0,05*
120000	(ii) Tree nuts (shelled or unshelled)	0,05*
120010	Almonds	0,05*
120020	Brazil nuts	0,05*
120030	Cashew nuts	0,05*
120040	Chestnuts	0,05*
120050	Coconuts	0,05*
120060	Hazelnuts (Filbert)	0,05*
120070	Macadamia	0,05*
120080	Pecans	0,05*
120090	Pine nuts	0,05*
120100	Pistachios	0,05*
120110	Walnuts	0,05*
120990	Others	0,05*
130000	(iii) Pome fruit	
130010	Apples (Crab apple)	5
130020	Pears (Oriental pear)	10
130030	Quinces	0,05*
130040	Medlar	0,05*
130050	Loquat	0,05*
130990	Others	0,05*
140000	(iv) Stone fruit	0,05*
140010	Apricots	0,05*
140020	Cherries (sweet cherries, sour cherries)	0,05*
140030	Peaches (Nectarines and similar hybrids)	0,05*
140040	Plums (Damson, greengage,	0,05*

Code number	Groups and examples of individual products to which the MRLs apply (a)	Diphenylamine
	mirabelle)	
140990	Others	0,05*
150000	(v) Berries & small fruit	0,05*
151000	(a) Table and wine grapes	0,05*
151010	Table grapes	0,05*
151020	Wine grapes	0,05*
152000	(b) Strawberries	0,05*
153000	(c) Cane fruit	0,05*
153010	Blackberries	0,05*
153020	Dewberries (Loganberries, Boysenberries, and cloudberries)	0,05*
153030	Raspberries (Wineberries)	0,05*
153990	Others	0,05*
154000	(d) Other small fruit & berries	0,05*
154010	Blueberries (Bilberries cawberries (red bilberries))	0,05*
154020	Cranberries	0,05*
154030	Currants (red, black and white)	0,05*
154040	Gooseberries (Including hybrids with other ribes species)	0,05*
154050	Rose hips	0,05*
154060	Mulberries (arbutus berry)	0,05*
154070	Azarole (mediterranean medlar)	0,05*
154080	Elderberries (Black chokeberry (appleberry), mountain ash, azarole, buckthorn (sea allowthorn), hawthorn, service berries, and other treeberries)	0,05*
154990	Others	0,05*
160000	(vi) Miscellaneous fruit	0,05*
161000	(a) Edible peel	0,05*
161010	Dates	0,05*
161020	Figs	0,05*
161030	Table olives	0,05*
161040	Kumquats (Marumi kumquats, naganini kumquats)	0,05*
161050	Carambola (Bilimbi)	0,05*
161060	Persimmon	0,05*

Code number	Groups and examples of individual products to which the MRLs apply (a)	Diphenylamine
161070	Jambolan (java plum) (Java apple (water apple), pomeac, rose apple, Brazlean cherry (grumichama), Surinam cherry)	0,05*
161990	Others	0,05*
162000	(b) Inedible peel, small	0,05*
162010	Kiwi	0,05*
162020	Lychee (Litchi) (Pulasan, rambutan (hairy litchi))	0,05*
162030	Passion fruit	0,05*
162040	Prickly pear (cactus fruit)	0,05*
162050	Star apple	0,05*
162060	American persimmon (Virginia kaki) (Black sapote, white sapote, green sapote, canistel (yellow sapote), and mammy sapote)	0,05*
162990	Others	0,05*
163000	(c) Inedible peel, large	0,05*
163010	Avocados	0,05*
163020	Bananas (Dwarf banana, plantain, apple banana)	0,05*
163030	Mangoes	0,05*
163040	Papaya	0,05*
163050	Pomegranate	0,05*
163060	Cherimoya (Custard apple, sugar apple (sweetsop), llama and other medium sized Annonaceae)	0,05*
163070	Guava	0,05*
163080	Pineapples	0,05*
163090	Bread fruit (Jackfruit)	0,05*
163100	Durian	0,05*
163110	Soursop (guanabana)	0,05*
163990	Others	0,05*
200000	2. VEGETABLES FRESH OR FROZEN	0,05*
210000	(i) Root and tuber vegetables	0,05*
211000	(a) Potatoes	0,05*
212000	(b) Tropical root and tuber vegetables	0,05*
212010	Cassava (Dasheen, eddoe	0,05*

Code number	Groups and examples of individual products to which the MRLs apply (a)	Diphenylamine
	(Japanese taro), tannia)	
212020	Sweet potatoes	0,05*
212030	Yams (Potato bean (yam bean), Mexican yam bean)	0,05*
212040	Arrowroot	0,05*
212990	Others	0,05*
213000	(c) Other root and tuber vegetables except sugar beet	0,05*
213010	Beetroot	0,05*
213020	Carrots	0,05*
213030	Celeriac	0,05*
213040	Horseradish	0,05*
213050	Jerusalem artichokes	0,05*
213060	Parsnips	0,05*
213070	Parsley root	0,05*
213080	Radishes (Black radish, Japanese radish, small radish and similar varieties)	0,05*
213090	Salsify (Scorzoneria, Spanish salsify (Spanish oysterplant))	0,05*
213100	Swedes	0,05*
213110	Turnips	0,05*
213990	Others	0,05*
220000	(ii) Bulb vegetables	0,05*
220010	Garlic	0,05*
220020	Onions (Silverskin onions)	0,05*
220030	Shallots	0,05*
220040	Spring onions (Welsh onion and similar varieties)	0,05*
220990	Others	0,05*
230000	(iii) Fruiting vegetables	0,05*
231000	(a) Solanacea	0,05*
231010	Tomatoes (Cherry tomatoes, )	0,05*
231020	Peppers (Chilli peppers)	0,05*
231030	Aubergines (egg plants) (Pepino)	0,05*
231040	Okra, lady's fingers	0,05*
231990	Others	0,05*
232000	(b) Cucurbits - edible peel	0,05*
232010	Cucumbers	0,05*
232020	Gherkins	0,05*
232030	Courgettes (Summer squash,	0,05*

Code number	Groups and examples of individual products to which the MRLs apply (a)	Diphenylamine
	marrow (patisson))	
232990	Others	0,05*
233000	(c) Cucurbits-inedible peel	0,05*
233010	Melons (Kiwano)	0,05*
233020	Pumpkins (Winter squash)	0,05*
233030	Watermelons	0,05*
233990	Others	0,05*
234000	(d) Sweet corn	0,05*
239000	(e) Other fruiting vegetables	0,05*
240000	(iv) Brassica vegetables	0,05*
241000	(a) Flowering brassica	0,05*
241010	Broccoli (Calabrese, Chinese broccoli, Broccoli raab)	0,05*
241020	Cauliflower	0,05*
241990	Others	0,05*
242000	(b) Head brassica	0,05*
242010	Brussels sprouts	0,05*
242020	Head cabbage (Pointed head cabbage, red cabbage, savoy cabbage, white cabbage)	0,05*
242990	Others	0,05*
243000	(c) Leafy brassica	0,05*
243010	Chinese cabbage (Indian (Chinese) mustard, pak choi, Chinese flat cabbage (tai goo choi), peking cabbage (pe-tsai), cow cabbage)	0,05*
243020	Kale (Borecole (curly kale), collards)	0,05*
243990	Others	0,05*
244000	(d) Kohlrabi	0,05*
250000	(v) Leaf vegetables & fresh herbs	0,05*
251000	(a) Lettuce and other salad plants including Brassicaceae	0,05*
251010	Lamb's lettuce (Italian comsalad)	0,05*
251020	Lettuce (Head lettuce, lollo rosso (cutting lettuce), iceberg lettuce, romaine (cos) lettuce)	0,05*
251030	Scarole (broad-leaf endive) (Wild chicory, red-leaved chicory, radicchio, curd leaf endive, sugar loaf)	0,05*
251040	Cress	0,05*
251050	Land cress	0,05*
251060	Rocket, Rucola (Wild rocket)	0,05*
251070	Red mustard	0,05*
251080	Leaves and sprouts of	0,05*

Code number	Groups and examples of individual products to which the MRLs apply (a)	Diphenylamine
	Brassica spp (Mizuna)	
251990	Others	0,05*
252000	(b) Spinach & similar (leaves)	0,05*
252010	Spinach (New Zealand spinach, tumip greens (tumip tops))	0,05*
252020	Purslane (Winter purslane (miner's lettuce), garden purslane, common purslane, sorrel, glasswort)	0,05*
252030	Beet leaves (chard) (Leaves of beetroot)	0,05*
252990	Others	0,05*
253000	(c) Vine leaves (grape leaves)	0,05*
254000	(d) Water cress	0,05*
255000	(e) Witloof	0,05*
256000	(f) Herbs	0,05*
256010	Chervil	0,05*
256020	Chives	0,05*
256030	Celery leaves (fennel leaves, Coriander leaves, dill leaves, Caraway leaves, lovage, angelica, sweet cicely and other Apiacea)	0,05*
256040	Parsley	0,05*
256050	Sage (Winter savory, summer savory, )	0,05*
256060	Rosemary	0,05*
256070	Thyme ( marjoram, oregano)	0,05*
256080	Basil (Balm leaves, mint, peppermint)	0,05*
256090	Bay leaves (laurel)	0,05*
256100	Tarragon (Hyssop)	0,05*
256990	Others	0,05*
260000	(vi) Legume vegetables (fresh)	0,05*
260010	Beans (with pods) (Green bean (french beans, snap beans), scarlet runner bean, slicing bean, yardlong beans)	0,05*
260020	Beans (without pods) (Broad beans, Flageolets, jack bean, lima bean, cowpea)	0,05*
260030	Peas (with pods) (Mangetout (sugar peas))	0,05*
260040	Peas (without pods) (Garden pea, green pea, chickpea)	0,05*
260050	Lentils	0,05*
260990	Others	0,05*
270000	(vii) Stem vegetables (fresh)	0,05*

Code number	Groups and examples of individual products to which the MRLs apply (a)	Diphenylamine
270010	Asparagus	0,05*
270020	Cardoons	0,05*
270030	Celery	0,05*
270040	Fennel	0,05*
270050	Globe artichokes	0,05*
270060	Leek	0,05*
270070	Rhubarb	0,05*
270080	Bamboo shoots	0,05*
270090	Palm hearts	0,05*
270990	Others	0,05*
280000	(viii) Fungi	0,05*
280010	Cultivated (Common mushroom, Oyster mushroom, Shi-take)	0,05*
280020	Wild (Chanterelle, Truffle, Morel, )	0,05*
280990	Others	0,05*
290000	(ix) Sea weeds	0,05*
300000	3. PULSES, DRY	0,05*
300010	Beans (Broad beans, navy beans, flageolets, jack beans, lima beans, field beans, cowpeas)	0,05*
300020	Lentils	0,05*
300030	Peas (Chickpeas, field peas, chickling vetch)	0,05*
300040	Lupins	0,05*
300990	Others	0,05*
400000	4. OILSEEDS AND OILFRUITS	0,05*
401000	(i) Oilseeds	0,05*
401010	Linseed	0,05*
401020	Peanuts	0,05*
401030	Poppy seed	0,05*
401040	Sesame seed	0,05*
401050	Sunflower seed	0,05*
401060	Rape seed (Bird rapeseed, tumip rape)	0,05*
401070	Soya bean	0,05*
401080	Mustard seed	0,05*
401090	Cotton seed	0,05*
401100	Pumpkin seeds	0,05*
401110	Safflower	0,05*
401120	Borage	0,05*
401130	Gold of pleasure	0,05*
401140	Hempseed	0,05*
401150	Castor bean	0,05*
401990	Others	0,05*

Code number	Groups and examples of individual products to which the MRLs apply (a)	Diphenylamine
402000	(ii) Oilfruits	0,05*
402010	Olives for oil production	0,05*
402020	Palm nuts (palmoil kernels)	0,05*
402030	Palmfruit	0,05*
402040	Kapok	0,05*
402990	Others	0,05*
500000	5. CEREALS	0,05*
500010	Barley	0,05*
500020	Buckwheat	0,05*
500030	Maize	0,05*
500040	Millet (Foxtail millet, teff)	0,05*
500050	Oats	0,05*
500060	Rice	0,05*
500070	Rye	0,05*
500080	Sorghum	0,05*
500090	Wheat (Spelt Triticale)	0,05*
500990	Others	0,05*
600000	6. TEA, COFFEE, HERBAL INFUSIONS AND COCOA	0,05*
610000	(i) Tea (dried leaves and stalks, fermented or otherwise of Camellia sinensis)	0,05*
620000	(ii) Coffee beans	0,05*
630000	(iii) Herbal infusions (dried)	0,05*
631000	(a) Flowers	0,05*
631010	Camomille flowers	0,05*
631020	Hybiscus flowers	0,05*
631030	Rose petals	0,05*
631040	Jasmine flowers	0,05*
631050	Lime (linden)	0,05*
631990	Others	0,05*
632000	(b) Leaves	0,05*
632010	Strawberry leaves	0,05*
632020	Rooibos leaves	0,05*
632030	Maté	0,05*
632990	Others	0,05*
633000	(c) Roots	0,05*
633010	Valerian root	0,05*
633020	Ginseng root	0,05*
633990	Others	0,05*
639000	(d) Other herbal infusions	0,05*
640000	(iv) Cocoa (fermented beans)	0,05*
650000	(v) Carob (st johns bread)	0,05*
700000	7. HOPS (dried), including hop pellets and unconcentrated powder	0,05*
800000	8. SPICES	0,05*
810000	(i) Seeds	0,05*



Code number	Groups and examples of individual products to which the MRLs apply (a)	Diphenylamine
810010	Anise	0,05*
810020	Black caraway	0,05*
810030	Celery seed (Lovage seed)	0,05*
810040	Coriander seed	0,05*
810050	Cumin seed	0,05*
810060	Dill seed	0,05*
810070	Fennel seed	0,05*
810080	Fenugreek	0,05*
810090	Nutmeg	0,05*
810990	Others	0,05*
820000	(ii) Fruits and berries	0,05*
820010	Allspice	0,05*
820020	Anise pepper (Japan pepper)	0,05*
820030	Caraway	0,05*
820040	Cardamom	0,05*
820050	Juniper berries	0,05*
820060	Pepper, black and white (Long pepper, pink pepper)	0,05*
820070	Vanilla pods	0,05*
820080	Tamarind	0,05*
820990	Others	0,05*
830000	(iii) Bark	0,05*
830010	Cinnamon (Cassia)	0,05*
830990	Others	0,05*
840000	(iv) Roots or rhizome	0,05*
840010	Liquorice	0,05*
840020	Ginger	0,05*
840030	Turmeric (Curcuma)	0,05*
840040	Horseradish	0,05*
840990	Others	0,05*
850000	(v) Buds	0,05*
850010	Cloves	0,05*
850020	Capers	0,05*
850990	Others	0,05*
860000	(vi) Flower stigma	0,05*

Code number	Groups and examples of individual products to which the MRLs apply (a)	Diphenylamine
860010	Saffron	0,05*
860990	Others	0,05*
870000	(vii) Aril	0,05*
870010	Mace	0,05*
870990	Others	0,05*
900000	9. SUGAR PLANTS	0,05*
900010	Sugar beet (root)	0,05*
900020	Sugar cane	0,05*
900030	Chicory roots	0,05*
900990	Others	0,05*
1000000	10. PRODUCTS OF ANIMAL ORIGIN- TERRESTRIAL ANIMALS	
1010000	(i) Meat, preparations of meat, offals, blood, animal fats fresh chilled or frozen, salted, in brine, dried or smoked or processed as flours or meals other processed products such as sausages and food preparations based on these	
1011000	(a) Swine	
1011010	Meat	
1011020	Fat free of lean meat	
1011030	Liver	
1011040	Kidney	
1011050	Edible offal	
1011990	Others	
1012000	(b) Bovine	
1012010	Meat	
1012020	Fat	
1012030	Liver	
1012040	Kidney	
1012050	Edible offal	
1012990	Others	
1013000	(c) Sheep	

Code number	Groups and examples of individual products to which the MRLs apply (a)	Diphenylamine
1013010	Meat	
1013020	Fat	
1013030	Liver	
1013040	Kidney	
1013050	Edible offal	
1013990	Others	
1014000	(d) Goat	
1014010	Meat	
1014020	Fat	
1014030	Liver	
1014040	Kidney	
1014050	Edible offal	
1014990	Others	
1015000	(e) Horses, asses, mules or hinnies	
1015010	Meat	
1015020	Fat	
1015030	Liver	
1015040	Kidney	
1015050	Edible offal	
1015990	Others	
1016000	(f) Poultry -chicken, geese, duck, turkey and Guinea fowl-, ostrich, pigeon	
1016010	Meat	
1016020	Fat	
1016030	Liver	
1016040	Kidney	
1016050	Edible offal	
1016990	Others	
1017000	(g) Other farm animals (Rabbit, Kangaroo)	
1017010	Meat	
1017020	Fat	
1017030	Liver	
1017040	Kidney	

Code number	Groups and examples of individual products to which the MRLs apply (a)	Diphenylamine
1017050	Edible offal	
1017990	Others	
1020000	(ii) Milk and cream, not concentrated, nor containing added sugar or sweetening matter, butter and other fats derived from milk, cheese and curd	
1020010	Cattle	
1020020	Sheep	
1020030	Goat	
1020040	Horse	
1020990	Others	
1030000	(iii) Birds' eggs, fresh preserved or cooked. Shelled eggs and egg yolks fresh, dried, cooked by steaming or boiling in water, moulded, frozen or otherwise preserved whether or not containing added sugar or sweetening matter	
1030010	Chicken	
1030020	Duck	
1030030	Goose	
1030040	Quail	
1030990	Others	
1040000	(iv) Honey (Royal jelly, pollen)	
1050000	(v) Amphibians and reptiles (Frog legs, crocodiles)	
1060000	(vi) Snails	
1070000	(vi) Other terrestrial animal products	

(\*) Indicates lower limit of analytical determination

## APPENDIX B.2 – EXISTING CXLS

Summary of CXLs for diphenylamine in plant commodities															
Commodity code	Commodity name	Values adopted by the CCPR		Critical values of the JMPR evaluation				Risk assessment values as calculated by EFSA				Comments on the JMPR evaluation			
		Residue definition	CXL (mg/kg)	Residue definition	STMR (P) (mg/kg)	HR (P) (mg/kg)	Default variability factor	Reduced variability factor	STMR (mg/kg)	HR (mg/kg)	Median peeling factor	Median conversion factor	Year	Based on EU GAP only?	Other comments
130010	Apples	Diphenylamine	10	Diphenylamine	4,45	n.c.	1	n.c.	4,45	6,3	n.a.	1	2001	no	Post harvest use according to US GAP.
130020	Pears	Diphenylamine	5	Diphenylamine	2,2	n.c.	1	n.c.	2,2	2,9	n.a.	1	2001	no	Post harvest use according to Australian GAP.

(\*) Indicates the lower limit of analytical quantification.

Summary of CXLs for diphenylamine in livestock commodities										
Commodity code	Commodity name	Values adopted by the CCPR			Critical values of the JMPR evaluation			Comment on the JMPR evaluation		
		Residue definition	Expressed as fat?	CXL (mg/kg)	Residue definition	STMR (mg/kg)	HR (mg/kg)	Year	Based on EU GAP only?	Other comments
1012010	Bovine meat	Diphenylamine	yes	0,01 *	Diphenylamine	0,0005	n.c.	2001	no	Based on a maximum dietary burden for beef cattle of 21 mg/kg.
1012020	Bovine fat	Diphenylamine	yes	0,01 *	Diphenylamine	0,0005	n.c.	2001	no	
1012030	Bovine liver	Diphenylamine	n.a.	0,05	Diphenylamine	0,024	n.c.	2001	no	
1012040	Bovine kidney	Diphenylamine	n.a.	0,01 *	Diphenylamine	0,0007	n.c.	2001	no	
1020010	Cattle milk	Diphenylamine	no	0,01 *	Diphenylamine	0,0019	n.c.	2008	no	Separate CXL of 0.01 for milk fats with STMR of 0.0075 mg/kg. Based on a dietary burden of 11.2 ppm for dairy cattle.
1020020	Sheep milk	Diphenylamine	no	0,01 *	Diphenylamine	0,0019	n.c.	2008	no	
1020030	Goat milk	Diphenylamine	no	0,01 *	Diphenylamine	0,0019	n.c.	2008	no	
1020040	Horse milk	Diphenylamine	no	0,01 *	Diphenylamine	0,0019	n.c.	2008	no	

(\*) Indicates the lower limit of analytical quantification.

n.a.: not applicable  
n.c.: not considered  
n.k.: not known

## ABBREVIATIONS

a.s.	active substance
ADI	acceptable daily intake
ARfD	acute reference dose
bw	body weight
CXL	codex maximum residue limit
d	day
DAR	Draft Assessment Report (prepared under Council Directive 91/414/EEC)
DFG	Deutsche Forschungsgemeinschaft German
EC	European Commission
EFSA	European Food Safety Authority
EU	European Union
FAO	Food and Agriculture Organisation of the United Nations
GAP	good agricultural practice
GC-MS	gas chromatography with mass spectrometry
GC-NPD	gas chromatography coupled with nitrogen/phosphorous detection
hL	hectolitre
ISO	International Organization for Standardization
IUPAC	International Union of Pure and Applied Chemistry
JMPR	Joint FAO/WHO Meeting on Pesticide Residues
L	litre
LOQ	limit of quantification
MRL	maximum residue limit
MS	Member States
OECD	Organization for Economic Co-operation and Development
PRIMo	(EFSA) Pesticide Residues Intake Model

PROFile	(EFSA) Pesticide Residue Overview File
RMS	rappporteur Member State
TRR	total radioactive residue
WHO	World Health Organisation