

## REASONED OPINION

### Modification of the existing MRL for bentazone in sweet corn<sup>1</sup>

#### European Food Safety Authority<sup>2</sup>

European Food Safety Authority (EFSA), Parma, Italy

#### SUMMARY

According to Article 6 of the Regulation (EC) No 396/2005, France received an application from BASF AGRO SAS to modify the existing MRL for bentazone in sweet corn. In order to accommodate the intended use of the active substance in France, the existing MRL for sweet corn which is currently set at the LOQ of 0.1 mg/kg should be raised. The EMS France drafted an evaluation report according to Article 8 of Regulation (EC) No 396/2005 which was submitted to the European Commission and forwarded to EFSA on 18 January 2010.

EFSA derives the following conclusions regarding the application, based on the above mentioned evaluation report as well as the Draft Assessment Report prepared by the rapporteur Member State Germany in the framework of Directive 91/414/EEC.

The toxicological profile of bentazone was investigated under the peer review of Directive 91/414/EEC and an ADI of 0.1 mg/kg bw/d and an ARfD of 0.25 mg/kg bw were derived.

The nature of bentazone residues in primary plants is elucidated in three crop categories: cereals, root and tuber vegetables and pulses and oilseeds. The peer review concluded that metabolism data are sufficient to propose a general risk assessment and enforcement residue definition in plant commodities as “*the sum of bentazone and the conjugates of 6-hydroxy and 8-hydroxy bentazone expressed as bentazone equivalent*”. EFSA concludes that the metabolic pattern of bentazone in maize (sweet corn) is sufficiently addressed and no further studies are required. Adequate analytical enforcement methods are available to control the compliance of the proposed MRL for bentazone in sweet corn.

The submitted residue trials data indicate that an MRL of 0.3 mg/kg would be required to accommodate the intended use of bentazone on sweet corn in France.

The nature of bentazone residues during processing has not been investigated. The applicant did not submit specific studies investigating the effect of processing on the magnitude of bentazone residues in processed sweet corn. Such studies, however, are not considered necessary taking into account the low contribution of sweet corn to the total dietary intake.

The possible occurrence of bentazone residues in rotational crops was also investigated. It is concluded that residue levels exceeding the current LOQ of 0.1 mg/kg will not occur in rotational

---

1 On request from the European Commission, Question No EFSA-Q-2010-00041, issued on 5 May 2010.

2 Correspondence: [praper.mrl@efsa.europa.eu](mailto:praper.mrl@efsa.europa.eu)

and/or succeeding crops planted after sweet corn provided that bentazone is applied according to the intended GAP.

Sweet corn is not a livestock feed and therefore the nature and magnitude of bentazone residues in livestock was not investigated under the current application.

The consumer exposure assessment was performed with revision 2 of the EFSA PRIMo. For the chronic exposure assessment the STMR value for sweet corn as derived from the residue trials as well as the existing MRLs established for other commodities in Annexes II and III of Regulation (EC) No 396/2005, were used as input values. The acute exposure assessment was performed only with regard to sweet corn and the HR value as derived from the supervised residue field trials was used as an input value. The calculated exposure was compared with the toxicological reference values as derived for bentazone.

No long-term consumer health concerns were identified for any of the European diets. The total calculated exposure values accounted for a maximum of 4.6% of the ADI. The contribution of residues in sweet corn to the total exposure is insignificant (maximum 0.007% of the ADI for IE adult diet).

No short-term consumer health concerns were identified in relation to the intake of sweet corn (6.2% of the ARfD).

EFSA concludes that the intended use of bentazone on sweet corn is acceptable with regard to consumer safety as no acute or chronic consumer health concerns were identified.

Food code <sup>a</sup>	Commodity	Existing EC MRL (mg/kg)	Proposed EC MRL (mg/kg)	Justification for the proposal
<b>Enforcement residue definition:</b> <i>the sum of bentazone and the conjugates of 6-hydroxy and 8-hydroxy bentazone expressed as bentazone</i>				
0234000	Sweet corn	0.1*	0.3	The MRL proposal is sufficiently supported by data and no consumer intake concerns were identified.

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

<sup>a</sup> – according to Regulation (EC) No 396/2005.

#### KEY WORDS

Bentazone, sweet corn, MRL application, Regulation (EC) No 396/2005, consumer risk assessment, herbicide, 6-hydroxy-bentazone, 8-hydroxy-bentazone

## TABLE OF CONTENTS

Summary .....	1
Table of contents .....	3
Background .....	4
Terms of reference.....	4
The active substance and its use pattern.....	5
Assessment .....	6
1. Methods of analysis.....	6
1.1. Methods for enforcement of residues in food of plant origin .....	6
1.2. Methods for enforcement of residues in food of animal origin .....	6
2. Mammalian toxicology.....	6
3. Residues.....	7
3.1. Nature and magnitude of residues in plant.....	7
3.1.1. Primary crops.....	7
3.1.2. Rotational crops.....	10
3.2. Nature and magnitude of residues in livestock .....	11
4. Consumer risk assessment .....	11
Conclusions and recommendations .....	12
References .....	13
Appendix A – Good Agricultural Practices (GAPs) .....	14
Appendix B – Pesticide Residues Intake Model (PRIMo).....	15
Appendix C – Existing EC MRLs.....	17
Abbreviations .....	20

## BACKGROUND

Regulation (EC) No 396/2005 establishes the rules governing the setting of pesticide MRLs at Community level. Article 6 of that regulation lays down that a party requesting an authorisation for the use of a plant protection product in accordance with Directive 91/414/EEC, shall submit to a Member State, when appropriate, an application to set or modify an MRL in accordance with the provisions of Article 7 of that regulation.

France, hereafter referred to as the evaluating Member State (EMS), received an application from BASF AGRO SAS<sup>3</sup> to modify the existing MRL for the active substance bentazone in sweet corn. This application was notified to the European Commission and EFSA and subsequently evaluated by the EMS in accordance with Article 8 of the Regulation.

After completion, the evaluation report of the EMS was submitted to the European Commission who forwarded the application, the evaluation report and the supporting dossier to EFSA on 18 January 2010. The application was included in the EFSA Register of Question with the reference number EFSA-Q-2010-00041 and the following subject:

*Bentazone - Application to modify the existing MRL in sweet corn.*

The proposed MRL for bentazone in sweet corn is 0.3 mg/kg.

EFSA then proceeded with the assessment of the application as required by Article 10 of the Regulation.

## TERMS OF REFERENCE

According to Article 10 of Regulation (EC) No 396/2005, EFSA shall, based on the evaluation report provided by the evaluating Member State, provide a reasoned opinion on the risks to the consumer associated with the application.

According to Article 11 of that Regulation, the reasoned opinion shall be provided as soon as possible and at the latest within 3 months from the date of receipt of the application. Where EFSA requests supplementary information, the time limit laid down shall be suspended until that information has been provided.

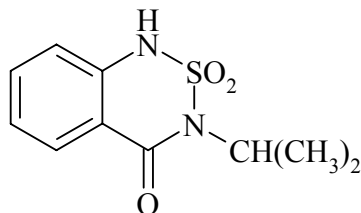
In this particular case the calculated deadline for providing the reasoned opinion is 18 April 2010.

---

<sup>3</sup> BASF AGRO SAS, 21 Chemin de la Sauvegarde, 69134, Ecully cedex, France

## THE ACTIVE SUBSTANCE AND ITS USE PATTERN

Bentazone is the ISO common name for 3-isopropyl-(1H)-2,1,3-benzothiadiazin-4-(3H)-one-2,2-dioxide (IUPAC) and the structure of the active substance is the following:



Molecular weight: 240.3 g/mol

Bentazone is a selective contact herbicide which is used at post emergence applications to control dicotyledonous weeds in agriculture, horticulture, ornamentals and amenity grasslands. The active substance is mainly taken up by leaves. Translocation is via the xylem. The herbicidal action is the inhibition of the photosynthetic electron transport in chloroplasts which ultimately causes growth inhibition.

The peer review of bentazone under Directive 91/414/EEC with the designated rapporteur Member State Germany has been finalized and the active substance is included in Annex I to this Directive as from 1 August 2001 by Commission Directive 2000/68/EC for the uses as herbicide only. EFSA has not been involved in the peer review therefore no EFSA conclusion is available. The uses investigated for the peer review were foliar applications on oilseeds, bulb vegetables, pulses, tuber vegetables, cereals and grasses.

At the European level the MRLs for bentazone were first established in 2002 by Commission Directive 2002/42/EC. The existing EC MRLs for bentazone are now set in the Annexes II and IIIB of Regulation (EC) No 396/2005. For sweet corn the MRL is set at the LOQ of 0.1 mg/kg. Codex Alimentarius Commission has established CXLs for maize at 0.2 mg/kg, but there is no CXL set for sweet corn.

The GAP for which the authorization is requested refers to an outdoor application of bentazone in France once at a application rate of 1.2 kg a.s./ha. The intended PHI is 28 days. The summary of GAP is available in Appendix A.

## ASSESSMENT

EFSA bases its assessment on the evaluation report submitted by France (2009) and the Draft Assessment Report (DAR) prepared under Directive 91/414/EEC (Germany 1996) and the Review Report for the active substance bentazone (EC, 2000). The assessment is performed in accordance with the legal provisions of the Uniform Principles for the Evaluation of the Authorization of Plant Protection Products set out in Annex VI to Directive 91/414/EEC and the currently valid EU guidance documents for consumer risk assessment (European Commission, 1996, 1997a, 1997b, 1997c, 1997d, 1997e, 1997f, 1997g, 2008).

### 1. Methods of analysis

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

The availability of analytical enforcement methods was investigated under the peer review of Directive 91/414/EEC (Germany, 1996).

An analytical method using GC-FP detection is validated at the individual LOQ of 0.02 mg/kg for the determination of bentazone and its conjugates (6-hydroxy bentazone and 8-hydroxy bentazone) in matrices with high water-, high oil- and high acid content and in dry matrices according to the established enforcement residue definition.

An analytical method using HPLC- MS/MS detection is validated at the individual LOQ of 0.01 mg/kg for the determination parent bentazone and its conjugates (6-hydroxy bentazone and 8-hydroxy bentazone) in matrices with high water-, high oil- and high acid content according to the established enforcement residue definition.

EFSA concludes that adequate analytical enforcement methods are available to enforce the proposed MRL for bentazone in sweet corn.

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

Sweet corn is not used as a livestock feed therefore the availability of the analytical enforcement methods for the determination of bentazone residues in the food of animal origin was not investigated under the current MRL application.

### 2. Mammalian toxicology

The toxicological reference values for bentazone were derived in the framework of the peer review and are compiled in the Table 2-1.

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

	Source	Year	Value	Study relied upon	Safety factor
<b>Bentazone</b>					
ADI	COM	2000	0.1 mg/kg bw/d	24 month rat feeding study	100
ARfD	COM	2000	0.25 mg/kg bw	90 days rat feeding study	100

### 3. Residues

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

##### 3.1.1. Primary crops

###### 3.1.1.1. Nature of residues

The metabolism of bentazone residues in primary plants was investigated in the framework of the peer review of Directive 91/414/EEC in cell suspensions and in the following crops (Germany, 1996):

- *pulses and oilseeds*: soya beans, green beans (foliar application 2.24 kg a.s./ha and 1.68+1.12 kg a.s./ha);
- *root and tuber vegetables*: potatoes (foliar application 1.12 kg a.s./ha (PHI 62 and 41 days));
- *cereals*: rice (foliar application 1 kg a.s./ha); maize (foliar application 1.68 kg a.s./ha).

Studies were performed with [<sup>14</sup>C –phenyl] bentazone.

In soya beans and hay (93 DAT) the TRR, depending on the application rate, was in the range of 0.4-1.1 mg/kg and 21.2-79.5 mg/kg, respectively. In seeds, 57% of the TRR was associated with the protein. The residue of concern in soya bean consists of the parent bentazone and the glycosides of 6-OH- and 8-OH-bentazone.

In green bean foliage after the single application of bentazone, the TRR accounted for 17.3 mg/kg at the PHI of 9 days and 5.0 mg/kg at the PHI of 36 days. After single application the TRR in hay, hull and dry seed at the PHI of 79 days were 20.4 mg/kg, 1.4 mg/kg and 0.6 mg/kg, respectively. The observed differences of TRR concentrations in hay (20.4-115 mg/kg) and in seeds (0.6-1.3 mg/kg) indicate low translocation of residues of bentazone and its conjugates into seeds. The relevant residue in beans consists of bentazone and the glycosides of 6-OH- and 8-OH-bentazone.

In potato tubers the TRR accounted for 0.14 mg/kg. Parent bentazone and 6-OH-bentazone were the major residue components accounting for a maximum of 4 % (0.005 mg/kg) of the TRR and 15% of the TRR (0.034 mg/kg), respectively. 57% of the radioactivity was incorporated into the starch.

In rice grain the TRR accounted for 0.45 mg/kg. The majority of the radioactivity in rice grain (69.7%) was incorporated into starch. In straw the TRR accounted for 51%. The isolation of the rice straw lignin indicated that 24% TRR was associated with lignin fraction and only 0.8% TRR with cellulose. The major components of the TRR were parent bentazone and its metabolite 6-OH bentazone.

In maize, the samples of grain, cobs, husks and forage were analysed for the TRR. Methanol extractable residues (64% TRR) in cobs, husks, stover and grain 126 DAT accounted for <0.05 mg/kg of bentazone, 6-OH- and 8-OH bentazone. The residue of concern in maize was determined to consist of bentazone and its metabolite 6-OH-bentazone glycoside. As in other monocotyledonous plants 8-OH-bentazone is not formed in maize (corn).

The peer review concluded that available metabolism studies are sufficient to propose a general risk assessment and enforcement residue definition in plant commodities as “*the sum of bentazone and the conjugates of 6-hydroxy and 8-hydroxy bentazone expressed as bentazone*”.

EFSA concludes that the metabolic pattern of bentazone in maize (sweet corn) is sufficiently addressed and no further studies are required.

### 3.1.1.2. Magnitude of residues

In support of the intended GAP in France the applicant submitted 6 trials for the NEU use and 6 trials for the SEU use. The application of the active substance on maize was done at the growth stages of BBCH 53-73<sup>4</sup>. Only one trial was performed at the growth stage of BBCH 73, but, according to residue data, this late application does not have a significant impact on the residue behaviour in the crop. The submitted number of trials is sufficient according to the EU Guidance document (European Commission, 2008).

The residues of parent bentazone and its 8-hydroxy metabolite in all trial samples were <0.01 mg/kg. Only the conjugate 6-hydroxy bentazone was detected in concentrations ranging from <0.01 – 0.19 mg/kg.

Supervised residue field trial samples prior to analysis were stored deep frozen (-20°C) for a period of 324 days. The stability of bentazone residues during storage has not been investigated in the framework of the peer review. The EMS refers to a GLP study performed in 2002 which demonstrates that bentazone residues are stable for up to 2 years under deep frozen conditions in matrices with high water, high oil content and in dry matrices. EFSA has no detailed information of the study.

According to the EMS, the analytical method used for analysing of the field trials samples is considered as sufficiently validated and fit for purpose.

The submitted residue trials data indicate that a MRL of 0.3 mg/kg is required to accommodate the intended use of bentazone on sweet corn in France.

---

<sup>4</sup> BBCH 53 (Principal growth stage: Inflorescence emergence heading (Tip of tassel visible)) – 73 (Principal growth stage: Development of fruit (Early milk))

**Table 3-1.** Overview of the available residues trials data

Commodity	Region (a)	Outdoor /Indoor	Individual trial results (mg/kg)		STMR (mg/kg) (b)	HR (mg/kg) (c)	MRL proposal (mg/kg)	Median CF <sup>(d)</sup>	Comments
			Enforcement (the sum of bentazone and the conjugates of 6- hydroxy-bentazone and 8- hydroxy-bentazone expressed as bentazone)	Risk assessment (the sum of bentazone and the conjugates of 6- hydroxy-bentazone and 8- hydroxy-bentazone expressed as bentazone)					
Sweet corn	SEU	Outdoor	2 x <0.03; 0.04; 0.05; 0.06 <sup>e</sup> ; 0.1	2 x <0.03; 0.04; 0.05; 0.06; 0.1	<b>0.045</b>	0.1	0.15	1.0	Rber=0.14 Rmax=0.15
	NEU	Outdoor	3 x <0.03; 0.03; 0.1; 0.21	3 x <0.03; 0.03; 0.1; 0.21	0.03	<b>0.21</b>	<b>0.3</b>	<b>1.0</b>	Rber=0.26 Rmax=0.34

(a): NEU, SEU, EU or Import (country code). In the case of indoor uses there is no necessity to differentiate between NEU and SEU.

(b): Median value of the individual trial results according to the enforcement residue definition.

(c): Highest value of the individual trial results according to the enforcement residue definition.

(d): The median conversion factor for enforcement to risk assessment is obtained by calculating the median of the individual conversion factors for each residues trial.

(e): The residue trial performed at the growth stage of the crop of BBCH 73

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

The nature of bentazone residues during processing was not investigated in the framework of the peer review of Directive 91/414/EEC (Germany, 1996).

The applicant did not submit specific studies investigating the effect of processing on the magnitude of bentazone residues in processed corn. Such studies, however, are not considered necessary taking into account the low contribution of sweet corn to the total dietary intake.

## 3.1.2. Rotational crops

### 3.1.2.1. Preliminary considerations

The degradation rate of bentazone residues in soil was investigated in the framework of the peer review of Directive 91/414/EEC (Germany, 1996). Laboratory studies indicate that the  $DT_{90lab}$  value for bentazone accounts for a maximum of 198 days. The field studies demonstrate lower persistence of bentazone in the soil with a maximum  $DT_{90f}$  value of 69 days. No relevant metabolites were identified. Considering the results from laboratory studies, a possible occurrence of bentazone residues in rotational and/or succeeding crops should be further explored.

### 3.1.2.2. Nature of residues

The nature of bentazone residues in rotational crops was investigated in the framework of the peer review in a confined rotational crop study (Germany, 1996). The study was performed with [ $^{14}C$ ]-bentazone in leafy and root vegetables and cereals. Crops were planted as emergency replants, autumn rotational crops and annual rotational crops. The soil was treated at a application rate of 2.24 kg a.s./ha. Intervals between planting were 39 days for emergency replanting, 102 to 145 days for autumn planting and 316-369 days for annual planting.

The highest bentazone residues were identified in emergency replanted chard (0.044 mg/kg), turnip top (0.024 mg/kg), in autumn planted chard (0.023 mg/kg) and emergency replanted sorghum fodder (0.013 mg/kg).

The study shows that bentazone and 6-hydroxy- and 8-hydroxy bentazone are low in emergency replants (0.9-2.8% TRR; 0.004-0.044 mg/kg) and almost not existent in autumn crops (in cereals 0.003-0.006 mg/kg and in root crops 0.005-0.023 mg/kg) and annual crops (<0.001 – 0.003 mg/kg).

It was concluded that the metabolism of bentazone residues in succeeding/rotational crops proceeds in a similar pathway as in primary plants and the same residue definitions are applicable.

### 3.1.2.3. Magnitude of residues

The magnitude of bentazone residues in rotational/succeeding crops has been investigated in the framework of the peer review of Directive 91/414/EEC (Germany, 1996). Three rotational crop studies have been performed with alfalfa, corn, lettuce mustard, radishes, snap beans, sugar beets, spinach, etc. Crops were planted as emergency replants (succeeding crops) (16 or 35 DAT) and as autumn and annual rotational crops. As preceding crop the soya bean was planted and treated twice at an individual application rate of 1.12 kg a.s./ha (2N) with the interval between applications of 14 days.

Highest residues were identified in the following succeeding crops: 0.019 mg/kg in radishes (16 DAT) and 0.017 mg/kg in mustard, spinach and turnips (29 DAT). The residues in rotational crops were below the LOD of 0.05 mg/kg for bentazone and its metabolites 6-OH- bentazone and 8-OH- bentazone.

Considering that the application rate proposed in the framework of this application is significantly lower and that a part of the applied substance is intercepted by the treated crops, it is concluded that significant residues exceeding the current LOQ of 0.1 mg/kg will not occur in rotational or succeeding crops provided that bentazone is applied according to the intended GAP.

### 3.2. Nature and magnitude of residues in livestock

Sweet corn is not a livestock feed and therefore the nature and magnitude of bentazone residues in livestock was not investigated under the current application.

## 4. Consumer risk assessment

The consumer exposure assessment was performed with revision 2 of the EFSA PRIMo (Pesticide Residue Intake Model) (EFSA, 2007). For the chronic exposure assessment the STMR value for sweet corn as derived from the residue field trials as well as the existing MRLs established for other commodities in Annexes II and III of Regulation (EC) No 396/2005, were used as input values.

The acute exposure assessment was performed only with regard to sweet corn and the HR value as derived from the supervised residue field trials was used as input value.

The input values for consumer exposure assessment are summarized in the Table 4-1.

**Table 4-1.** Input values for the consumer exposure assessment

Commodity	Chronic exposure assessment		Acute exposure assessment	
	Input value (mg/kg)	Comment	Input value (mg/kg)	Comment
<b>Risk assessment residue definition:</b> <i>the sum of bentazone and the conjugates of 6-hydroxy-bentazone and 8-hydroxy-bentazone expressed as bentazone</i>				
Sweet corn	0.045	STMR (SEU use)	0.21	HR (NEU use)
Other commodities of food and animal origin	MRL	Appendix C	Acute intake was undertaken with regard to sweet corn only.	

The summary of exposure calculations is presented in the Appendix B. The calculated exposure was compared with the toxicological reference values as derived for bentazone (Table 2-1.)

No long-term consumer health concerns were identified for any of the European diets. The total calculated exposure values accounted for a maximum of 4.6% of the ADI. The contribution of residues in sweet corn to the total exposure is insignificant, being  $\leq 0.007\%$  (IE adult diet).

No short-term consumer health concerns were identified in relation to the intake of sweet corn (6.2% of the ARfD).

EFSA concludes that the intended use of bentazone on sweet corn is acceptable with regard to consumer safety as no acute or chronic consumer health concerns were identified.

## CONCLUSIONS AND RECOMMENDATIONS

### CONCLUSIONS

The toxicological profile of bentazone was investigated under the peer review of Directive 91/414/EEC and an ADI of 0.1 mg/kg bw/d and an ARfD of 0.25 mg/kg bw were derived.

The nature of bentazone residues in primary plants is elucidated in three crop categories: cereals, root and tuber vegetables and pulses and oilseeds. The peer review concluded that metabolism data are sufficient to propose a general risk assessment and enforcement residue definition in plant commodities as “*the sum of bentazone and the conjugates of 6-hydroxy and 8-hydroxy bentazone expressed as bentazone equivalent*”. EFSA concludes that the metabolic pattern of bentazone in maize (sweet corn) is sufficiently addressed and no further studies are required. Adequate analytical enforcement methods are available to control the compliance of the proposed MRL for bentazone in sweet corn.

The submitted residue trials data indicate that an MRL of 0.3 mg/kg would be required to accommodate the intended use of bentazone on sweet corn in France.

The nature of bentazone residues during processing has not been investigated. The applicant did not submit specific studies investigating the effect of processing on the magnitude of bentazone residues in processed sweet corn. Such studies, however, are not considered necessary taking into account the low contribution of sweet corn to the total dietary intake.

The possible occurrence of bentazone residues in rotational crops was also investigated. It is concluded that residue levels exceeding the current LOQ of 0.1 mg/kg will not occur in rotational and/or succeeding crops planted after sweet corn provided that bentazone is applied according to the intended GAP.

Sweet corn is not a livestock feed and therefore the nature and magnitude of bentazone residues in livestock was not investigated under the current application.

The consumer exposure assessment was performed with revision 2 of the EFSA PRIMo. For the chronic exposure assessment the STMR value for sweet corn as derived from the residue trials as well as the existing MRLs established for other commodities in Annexes II and III of Regulation (EC) No 396/2005, were used as input values. The acute exposure assessment was performed only with regard to sweet corn and the HR value as derived from the supervised residue field trials was used as an input value. The calculated exposure was compared with the toxicological reference values as derived for bentazone.

No long-term consumer health concerns were identified for any of the European diets. The total calculated exposure values accounted for a maximum of 4.6% of the ADI. The contribution of residues in sweet corn to the total exposure is insignificant (maximum 0.007% of the ADI for IE adult diet).

No short-term consumer health concerns were identified in relation to the intake of sweet corn (6.2% of the ARfD).

EFSA concludes that the intended use of bentazone on sweet corn is acceptable with regard to consumer safety as no acute or chronic consumer health concerns were identified.

## RECOMMENDATIONS

Food code <sup>a</sup>	Commodity	Existing EC MRL (mg/kg)	Proposed EC MRL (mg/kg)	Justification for the proposal
<b>Enforcement residue definition:</b> <i>the sum of bentazone and the conjugates of 6-hydroxy and 8-hydroxy bentazone expressed as bentazone</i>				
0234000	Sweet corn	0.1*	0.3	The MRL proposal is sufficiently supported by data and no consumer intake concerns were identified.

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

<sup>a</sup> – according to Regulation (EC) No 396/2005.

## REFERENCES

- France, 2009. Evaluation report on the modification of MRLs for bentazone in sweet corn prepared by the evaluating Member State France under Article 8 of Regulation (EC) No 396/2005, 18 December 2009.
- Germany, 1996. Draft Assessment Report (DAR) on the active substance bentazone prepared by the rapporteur Member State Germany in the framework of Directive 91/414/EEC, September 1996.
- European Commission, 2000. Review Report for the active substance bentazone finalised in the Standing Committee on the Food Chain and Animal Health at its meeting on 13 July 2000 in view of the inclusion of bentazone in Annex I of Directive 91/414/EEC. 7585/VI/97-final, 30 November 2000.
- European Commission, 1997a. Appendix A – Metabolism and distribution in plants. 7028/VI/95-rev. 3, 22 July 1997.
- European Commission, 1997b. Appendix B – General recommendations for the design, preparation and realization of residue trials. Annex 2 – Classification of (minor) crops not listed in the Appendix of Council Directive 90/642/EEC. 7029/VI/95-rev. 6, 17 August 2000.
- European Commission, 1997c. Appendix C – Testing of plant protection products in rotational crops. 7524/VI/95-rev. 2, 22 July 1997.
- European Commission, 2008. Appendix D – Guidelines on comparability, extrapolation, group tolerances and data requirements for setting MRLs. 7525/VI/96-rev.8, 1 February 2008.
- European Commission, 1997d. Appendix E – Processing studies. 7035/VI/95 Rev 5, 22 July 1997.
- European Commission, 1997e. Appendix F – Metabolism and distribution in domestic animals. 7030/VI/95-rev 3, 22 July 1997.
- European Commission, 1996. Appendix G – Livestock feeding studies. 7031/VI/95 rev.4, 22 July 1996.
- European Commission, 1997f. Appendix H – Storage stability of residues samples. 7032/VI/95-rev.5, 22 July 1997
- European Commission, 1997g. Appendix I – Calculation of maximum residue levels and safety intervals. 7039/VI/95, 22 July 1997

**APPENDIX A – GOOD AGRICULTURAL PRACTICES (GAPs)**

Crop and/or situation (a)	Member State or country	F or G (b)	Pest or group of pests controlled (c)	Formulation rate per treatment		Application				Application rate per treatment			PHI (days) (k)	Remarks: (l) e.g. minimum realistic PHI
				Type (d-f)	Conc. of a.s. (i)	method, kind, if other than spray (f-h)	Growth stage and season (j)	Number (max)	Interval between applications	kg a.s./hL, where appropriate	water L/ha	kg a.s./ha, where appropriate		
Sweet corn	France	F	weeds	SL	480	Spray	BBCH 12-35	1	n.a.	0.6-2.4	50-200	1.2	28	

Remarks:

- (a) In case of group of crops the Codex classification should be used
- (b) Outdoor or field use (F), glasshouse application (G) or indoor application (I)
- (c) e.g. biting and sucking insects, soil born insects, foliar fungi
- (d) e.g. wettable powder (WP), emulsifiable concentration (EC), granule (GR)
- (e) Use CIPAC/FAO Codes where appropriate
- (f) All abbreviations used must be explained
- (g) Method, e.g. high volume spraying, low volume spraying, spreading, dusting, drench
- (h) Kind, e.g. overall, broadcast, aerial spraying, row, individual plant, between the plants
- (i) g/kg or g/l
- (j) Growth stage at last treatment
- (k) PHI = Pre-harvest interval
- (l) Remarks may include: Extent of use/economic importance/restrictions (e.g. feeding, grazing)/minimal intervals between applications

**APPENDIX B – PESTICIDE RESIDUES INTAKE MODEL (PRIMO)**

<b>Bentazone</b>			
Status of the active substance:	<b>Included</b>	Code no.:	<b>#N/A</b>
LOQ (mg/kg bw):	0.1	proposed LOQ:	
<b>Toxicological end points</b>			
ADI (mg/kg bw/day):	<b>0.1</b>	ARfD (mg/kg bw):	<b>0.25</b>
Source of ADI:	<b>EC</b>	Source of ARfD:	<b>EC</b>
Year of evaluation:	<b>2000</b>	Year of evaluation:	<b>2000</b>

**Chronic risk assessment - refined calculations**

		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)	
4.6	UK Toddler	2.3	Sugar beet (root)	0.4	Milk and cream,	0.4	Wheat	4.5	
4.2	NL child	0.6	Apples	0.6	Potatoes	0.6	Milk and cream,	4.1	
4.1	WHO Cluster diet B	0.9	Wheat	0.3	Tomatoes	0.3	Potatoes	4.1	
4.1	DE child	1.2	Apples	0.4	Wheat	0.4	Oranges	4.0	
3.7	UK Infant	1.0	Sugar beet (root)	0.8	Milk and cream,	0.3	Potatoes	3.5	
3.5	IE adult	0.4	Sweet potatoes	0.2	Maize	0.2	Maize	3.4	
3.4	FR toddler	0.8	Milk and cream,	0.5	Potatoes	0.3	Apples	3.4	
2.8	DK child	0.6	Wheat	0.4	Rye	0.3	Milk and cream,	2.8	
2.6	WHO cluster diet E	0.4	Wheat	0.4	Potatoes	0.2	Wine grapes	2.5	
2.3	FR infant	0.5	Milk and cream,	0.4	Potatoes	0.3	Carrots	2.3	
2.3	ES child	0.4	Wheat	0.3	Milk and cream,	0.2	Oranges	2.3	
2.3	WHO cluster diet D	0.7	Wheat	0.4	Potatoes	0.1	Tomatoes	2.3	
2.2	SE general population 90th percentile	0.4	Potatoes	0.3	Wheat	0.2	Milk and cream,	2.2	
2.2	WHO regional European diet	0.4	Potatoes	0.3	Wheat	0.1	Peas (with pods)	2.0	
2.1	WHO Cluster diet F	0.4	Wheat	0.3	Potatoes	0.1	Oranges	2.1	
2.1	PT General population	0.5	Potatoes	0.4	Wheat	0.2	Wine grapes	2.0	
1.7	NL general	0.3	Potatoes	0.2	Wheat	0.1	Oranges	1.6	
1.7	IT kids/toddler	0.7	Wheat	0.2	Other cereal	0.1	Tomatoes	1.6	
1.5	FR all population	0.4	Wine grapes	0.3	Wheat	0.1	Potatoes	1.5	
1.5	UK vegetarian	0.4	Sugar beet (root)	0.2	Wheat	0.1	Potatoes	1.5	
1.5	ES adult	0.2	Wheat	0.1	Oranges	0.1	Milk and cream,	1.5	
1.4	UK Adult	0.4	Sugar beet (root)	0.2	Wheat	0.1	Potatoes	1.3	
1.2	IT adult	0.4	Wheat	0.1	Tomatoes	0.1	Apples	1.2	
1.2	LT adult	0.3	Potatoes	0.2	Apples	0.1	Rye	1.2	
1.2	DK adult	0.2	Wheat	0.1	Potatoes	0.1	Wine grapes	1.2	
1.0	PL general population	0.3	Potatoes	0.2	Apples	0.1	Tomatoes	1.0	
0.9	FI adult	0.1	Potatoes	0.1	Milk and cream,	0.1	Wheat	0.9	

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

<b>Acute risk assessment /children - refined calculations</b>	<b>Acute risk assessment / adults / general population - refined calculations</b>
---	---

The acute risk assessment is based on the ARfD.

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

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

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

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

<b>Unprocessed commodities</b>	<b>No of commodities for which ARfD/ADI is exceeded (IESTI 1):</b> ---			<b>No of commodities for which ARfD/ADI is exceeded (IESTI 2):</b> ---			<b>No of commodities for which ARfD/ADI is exceeded (IESTI 1):</b> ---			<b>No of commodities for which ARfD/ADI is exceeded (IESTI 2):</b> ---		
	<b>IESTI 1</b> *) **)			<b>IESTI 2</b> *) **)			<b>IESTI 1</b> *) **)			<b>IESTI 2</b> *) **)		
	Highest % of ARfD/ADI	Commodities	pTMRL/ threshold MRL (mg/kg)	Highest % of ARfD/ADI	Commodities	pTMRL/ threshold MRL (mg/kg)	Highest % of ARfD/ADI	Commodities	pTMRL/ threshold MRL (mg/kg)	Highest % of ARfD/ADI	Commodities	pTMRL/ threshold MRL (mg/kg)
	6.2	Sweet corn	0.21 / -	4.4	Sweet corn	0.21 / -	1.8	Sweet corn	0.21 / -	1.3	Sweet corn	0.21 / -
<b>No of critical MRLs (IESTI 1)</b>			---			<b>No of critical MRLs (IESTI 2)</b>			---			

<b>Processed commodities</b>	<b>No of commodities for which ARfD/ADI is exceeded:</b> ---			<b>No of commodities for which ARfD/ADI is exceeded:</b> ---		
	***)			***)		
	Highest % of ARfD/ADI	Processed commodities	pTMRL/ threshold MRL (mg/kg)	Highest % of ARfD/ADI	Processed commodities	pTMRL/ threshold MRL (mg/kg)

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

\*\*\*) pTMRL: provisional temporary MRL

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

**Conclusion:**

For Bentazone 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 C – EXISTING EC MRLs

Code number	Groups and examples of individual products to which the MRLs apply (a)	Bentazone (sum of bentazone and the conjugates of 6-OH and 8-OH bentazone expressed as bentazone) (R)
100000	1. FRUIT FRESH OR FROZEN; NUTS	0,1*
110000	(i) Citrus fruit	0,1*
110010	Grapefruit (Shaddocks, pomelos, sweeties, tangelo, uglı and other hybrids)	0,1*
110020	Oranges (Bergamot, bitter orange, chinotto and other hybrids)	0,1*
110030	Lemons (Citron, lemon )	0,1*
110040	Limes	0,1*
110050	Mandarins (Clementine, tangerine and other hybrids)	0,1*
110990	Others	0,1*
120000	(ii) Tree nuts (shelled or unshelled)	0,1*
120010	Almonds	0,1*
120020	Brazil nuts	0,1*
120030	Cashew nuts	0,1*
120040	Chestnuts	0,1*
120050	Coconuts	0,1*
120060	Hazelnuts (Filbert)	0,1*
120070	Macadamia	0,1*
120080	Pecans	0,1*
120090	Pine nuts	0,1*
120100	Pistachios	0,1*
120110	Walnuts	0,1*
120990	Others	0,1*
130000	(iii) Pome fruit	0,1*
130010	Apples (Crab apple)	0,1*
130020	Pears (Oriental pear)	0,1*
130030	Quinces	0,1*

130040	Medlar	0,1*
130050	Loquat	0,1*
130990	Others	0,1*
140000	(iv) Stone fruit	0,1*
140010	Apricots	0,1*
140020	Cherries (sweet cherries, sour cherries)	0,1*
140030	Peaches (Nectarines and similar hybrids)	0,1*
140040	Plums (Damson, greengage, mirabelle)	0,1*
140990	Others	0,1*
150000	(v) Berries & small fruit	0,1*
151000	(a) Table and wine grapes	0,1*
151010	Table grapes	0,1*
151020	Wine grapes	0,1*
152000	(b) Strawberries	0,1*
153000	(c) Cane fruit	0,1*
153010	Blackberries	0,1*
153020	Dewberries (Loganberries, Boysenberries, and cloudberries)	0,1*
153030	Raspberries (Wineberries )	0,1*
153990	Others	0,1*
154000	(d) Other small fruit & berries	0,1*
154010	Blueberries (Bilberries cowberries (red bilberries))	0,1*
154020	Cranberries	0,1*
154030	Currants (red, black and white)	0,1*
154040	Gooseberries (Including hybrids with other ribes species)	0,1*
154050	Rose hips	0,1*
154060	Mulberries (arbutus berry)	0,1*
154070	Azarole (mediteranean medlar)	0,1*
154080	Elderberries (Black chokeberry (appleberry), mountain ash, azarole, buckthorn (sea shallowthorn), hawthorn, service berries, and other treeberries)	0,1*
154990	Others	0,1*
160000	(vi) Miscellaneous fruit	0,1*
161000	(a) Edible peel	0,1*
161010	Dates	0,1*
161020	Figs	0,1*
161030	Table olives	0,1*

161040	Kumquats (Marumi kumquats, nagami kumquats)	0,1*
161050	Carambola (Bilimbi)	0,1*
161060	Persimmon	0,1*
161070	Jambolan (java plum) (Java apple (water apple), pomeric, rose apple, Brazilean cherry (grumichama), Surinam cherry)	0,1*
161990	Others	0,1*
162000	(b) Inedible peel, small	0,1*
162010	Kiwi	0,1*
162020	Lychee (Litchi) (Pulasan, rambutan (hairy litchi))	0,1*
162030	Passion fruit	0,1*
162040	Prickly pear (cactus fruit)	0,1*
162050	Star apple	0,1*
162060	American persimmon (Virginia kaki) (Black sapote, white sapote, green sapote, canistel (yellow sapote), and mammy sapote)	0,1*
162990	Others	0,1*
163000	(c) Inedible peel, large	0,1*
163010	Avocados	0,1*
163020	Bananas (Dwarf banana, plantain, apple banana)	0,1*
163030	Mangoes	0,1*
163040	Papaya	0,1*
163050	Pomegranate	0,1*
163060	Cherimoya (Custard apple, sugar apple (sweetsop) , llama and other medium sized Amnonaceae)	0,1*
163070	Guava	0,1*
163080	Pineapples	0,1*
163090	Bread fruit (Jackfruit)	0,1*
163100	Durian	0,1*
163110	Soursop (guanabana)	0,1*
163990	Others	0,1*
200000	2. VEGETABLES FRESH OR FROZEN	
210000	(i) Root and tuber vegetables	0,1*
211000	(a) Potatoes	0,1*
212000	(b) Tropical root and tuber vegetables	0,1*
212010	Cassava (Dasheen, eddoe (Japanese taro), tannia)	0,1*
212020	Sweet potatoes	0,1*
212030	Yams (Potato bean (yam bean), Mexican yam bean)	0,1*
212040	Arrowroot	0,1*

212990	Others	0,1*
213000	(c) Other root and tuber vegetables except sugar beet	0,1*
213010	Beetroot	0,1*
213020	Carrots	0,1*
213030	Celeriac	0,1*
213040	Horseradish	0,1*
213050	Jerusalem artichokes	0,1*
213060	Parsnips	0,1*
213070	Parsley root	0,1*
213080	Radishes (Black radish, Japanese radish, small radish and similar varieties)	0,1*
213090	Salsify (Scorzoneria, Spanish salsify (Spanish oysterplant))	0,1*
213100	Swedes	0,1*
213110	Turnips	0,1*
213990	Others	0,1*
220000	(ii) Bulb vegetables	0,1*
220010	Garlic	0,1*
220020	Onions (Silverskin onions)	0,1*
220030	Shallots	0,1*
220040	Spring onions (Welsh onion and similar varieties)	0,1*
220990	Others	0,1*
230000	(iii) Fruiting vegetables	0,1*
231000	(a) Solanacea	0,1*
231010	Tomatoes (Cherry tomatoes, )	0,1*
231020	Peppers (Chilli peppers)	0,1*
231030	Aubergines (egg plants) (Pepino)	0,1*
231040	Okra, lady's fingers	0,1*
231990	Others	0,1*
232000	(b) Cucurbits - edible peel	0,1*
232010	Cucumbers	0,1*
232020	Gherkins	0,1*
232030	Courgettes (Summer squash, marrow (patisson))	0,1*
232990	Others	0,1*
233000	(c) Cucurbits-inedible peel	0,1*
233010	Melons (Kiwano )	0,1*
233020	Pumpkins (Winter squash)	0,1*
233030	Watermelons	0,1*
233990	Others	0,1*
234000	(d) Sweet corn	0,1*
239000	(e) Other fruiting vegetables	0,1*
240000	(iv) Brassica vegetables	0,1*

241000	(a) Flowering brassica	0,1*
241010	Broccoli (Calabrese, Chinese broccoli, Broccoli raab)	0,1*
241020	Cauliflower	0,1*
241990	Others	0,1*
242000	(b) Head brassica	0,1*
242010	Brussels sprouts	0,1*
242020	Head cabbage (Pointed head cabbage, red cabbage, savoy cabbage, white cabbage)	0,1*
242990	Others	0,1*
243000	(c) Leafy brassica	0,1*
243010	Chinese cabbage (Indian (Chinese) mustard, pak choi, Chinese flat cabbage (tai goo choi), peking cabbage (pe-tsai), cow cabbage)	0,1*
243020	Kale (Borecole (curly kale), collards)	0,1*
243990	Others	0,1*
244000	(d) Kohlrabi	0,1*
250000	(v) Leaf vegetables & fresh herbs	0,1*
251000	(a) Lettuce and other salad plants including Brassicaceae	0,1*
251010	Lamb's lettuce (Italian consalad)	0,1*
251020	Lettuce (Head lettuce, lollo rosso (cutting lettuce), iceberg lettuce, romaine (cos) lettuce)	0,1*
251030	Scarole (broad-leaf endive) (Wild chicory, red-leaved chicory, radicchio, curd leaf endive, sugar loaf)	0,1*
251040	Cress	0,1*
251050	Land cress	0,1*
251060	Rocket, Rucola (Wild rocket)	0,1*
251070	Red mustard	0,1*
251080	Leaves and sprouts of Brassica spp (Mizuna)	0,1*
251990	Others	0,1*
252000	(b) Spinach & similar (leaves)	0,1*
252010	Spinach (New Zealand spinach, tumip greens (tumip tops))	0,1*
252020	Purslane (Winter purslane (miner's lettuce), garden purslane, common purslane, sorrel, glasswort)	0,1*

252030	Beet leaves (chard) (Leaves of beetroot)	0,1*
252990	Others	0,1*
253000	(c) Vine leaves (grape leaves)	0,1*
254000	(d) Water cress	0,1*
255000	(e) Witloof	0,1*
256000	(f) Herbs	0,1*
256010	Chervil	0,1*
256020	Chives	0,1*
256030	Celery leaves (fennel leaves, Coriander leaves, dill leaves, Caraway leaves, lovage, angelica, sweet cicely and other Apiacea)	0,1*
256040	Parsley	0,1*
256050	Sage (Winter savory, summer savory, )	0,1*
256060	Rosemary	0,1*
256070	Thyme ( marjoram, oregano)	0,1*
256080	Basil (Balm leaves, mint, peppermint)	0,1*
256090	Bay leaves (laurel)	0,1*
256100	Taragon (Hyssop)	0,1*
256990	Others	0,1*
260000	(vi) Legume vegetables (fresh)	
260010	Beans (with pods) (Green bean (french beans, snap beans), scarlet runner bean, slicing bean, yardlong beans)	0,1*
260020	Beans (without pods) (Broad beans, Flageolet, jack bean, lima bean, cowpea)	0,1*
260030	Peas (with pods) (Mangetout (sugar peas))	0,5
260040	Peas (without pods) (Garden pea, green pea, chickpea)	0,2
260050	Lentils	0,1*
260990	Others	0,1*
270000	(vii) Stem vegetables (fresh)	0,1*
270010	Asparagus	0,1*
270020	Cardoons	0,1*
270030	Celery	0,1*
270040	Fennel	0,1*
270050	Globe artichokes	0,1*
270060	Leek	0,1*
270070	Rhubarb	0,1*
270080	Bamboo shoots	0,1*

270090	Palm hearts	0,1*
270990	Others	0,1*
280000	(viii) Fungi	0,1*
280010	Cultivated (Common mushroom, Oyster mushroom, Shi-take)	0,1*
280020	Wild (Chanterelle, Truffle, Morel, )	0,1*
280990	Others	0,1*
290000	(ix) Sea weeds	
300000	3. PULSES, DRY	0,1*
300010	Beans (Broad beans, navy beans, flageolet, jack beans, lima beans, field beans, cowpeas)	0,1*
300020	Lentils	0,1*
300030	Peas (Chickpeas, field peas, chickling vetch)	0,1*
300040	Lupins	0,1*
300990	Others	0,1*
400000	4. OILSEEDS AND OILFRUITS	0,1*
401000	(i) Oilseeds	0,1*
401010	Linseed	0,1*
401020	Peanuts	0,1*
401030	Poppy seed	0,1*
401040	Sesame seed	0,1*
401050	Sunflower seed	0,1*
401060	Rape seed (Bird rapeseed, tumip rape)	0,1*
401070	Soya bean	0,1*
401080	Mustard seed	0,1*
401090	Cotton seed	0,1*
401100	Pumpkin seeds	0,1*
401110	Safflower	0,1*
401120	Borage	0,1*
401130	Gold of pleasure	0,1*
401140	Hempseed	0,1*
401150	Castor bean	0,1*
401990	Others	0,1*
402000	(ii) Oilfruits	0,1*
402010	Olives for oil production	0,1*
402020	Palm nuts (palmoil kernels)	0,1*
402030	Palmfruit	0,1*
402040	Kapok	0,1*
402990	Others	0,1*
500000	5. CEREALS	0,1*
500010	Barley	0,1*
500020	Buckwheat	0,1*
500030	Maize	0,1*

500040	Millet (Foxtail millet, teff)	0,1*
500050	Oats	0,1*
500060	Rice	0,1*
500070	Rye	0,1*
500080	Sorghum	0,1*
500090	Wheat (Spelt Triticale)	0,1*
500990	Others	0,1*
600000	6. TEA, COFFEE, HERBAL INFUSIONS AND COCOA	0,1*
610000	(i) Tea (dried leaves and stalks, fermented or otherwise of Camellia sinensis)	0,1*
620000	(ii) Coffee beans	0,1*
630000	(iii) Herbal infusions (dried)	0,1*
631000	(a) Flowers	0,1*
631010	Camomille flowers	0,1*
631020	Hybiscus flowers	0,1*
631030	Rose petals	0,1*
631040	Jasmine flowers	0,1*
631050	Lime (linden)	0,1*
631990	Others	0,1*
632000	(b) Leaves	0,1*
632010	Strawberry leaves	0,1*
632020	Rooibos leaves	0,1*
632030	Maté	0,1*
632990	Others	0,1*
633000	(c) Roots	0,1*
633010	Valerian root	0,1*
633020	Ginseng root	0,1*
633990	Others	0,1*
639000	(d) Other herbal infusions	0,1*
640000	(iv) Cocoa (fermented beans)	0,1*
650000	(v) Carob (st johns bread)	0,1*
700000	7. HOPS (dried) , including hop pellets and unconcentrated powder	0,1*
800000	8. SPICES	0,1*
810000	(i) Seeds	0,1*
810010	Anise	0,1*
810020	Black caraway	0,1*
810030	Celery seed (Lovage seed)	0,1*
810040	Coriander seed	0,1*
810050	Cumin seed	0,1*
810060	Dill seed	0,1*
810070	Fennel seed	0,1*
810080	Fenugreek	0,1*
810090	Nutmeg	0,1*
810990	Others	0,1*

820000	(ii) Fruits and berries	0,1*
820010	Allspice	0,1*
820020	Anise pepper (Japan pepper)	0,1*
820030	Caraway	0,1*
820040	Cardamom	0,1*
820050	Juniper berries	0,1*
820060	Pepper, black and white (Long pepper, pink pepper)	0,1*
820070	Vanilla pods	0,1*
820080	Tamarind	0,1*
820990	Others	0,1*
830000	(iii) Bark	0,1*
830010	Cinnamon (Cassia)	0,1*
830990	Others	0,1*
840000	(iv) Roots or rhizome	0,1*
840010	Liquorice	0,1*
840020	Ginger	0,1*
840030	Turmeric (Curcuma)	0,1*
840040	Horseradish	0,1*
840990	Others	0,1*
850000	(v) Buds	0,1*
850010	Cloves	0,1*
850020	Capers	0,1*
850990	Others	0,1*
860000	(vi) Flower stigma	0,1*
860010	Saffron	0,1*
860990	Others	0,1*
870000	(vii) Aril	0,1*
870010	Mace	0,1*
870990	Others	0,1*
900000	9. SUGAR PLANTS	0,1*
900010	Sugar beet (root)	0,1*
900020	Sugar cane	0,1*

900030	Chicory roots	0,1*
900990	Others	0,1*
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	0,05*
1011000	(a) Swine	0,05*
1011010	Meat	0,05*
1011020	Fat free of lean meat	0,05*
1011030	Liver	0,05*
1011040	Kidney	0,05*
1011050	Edible offal	0,05*
1011990	Others	0,05*
1012000	(b) Bovine	0,05*
1012010	Meat	0,05*
1012020	Fat	0,05*
1012030	Liver	0,05*
1012040	Kidney	0,05*
1012050	Edible offal	0,05*
1012990	Others	0,05*
1013000	(c) Sheep	0,05*
1013010	Meat	0,05*
1013020	Fat	0,05*
1013030	Liver	0,05*
1013040	Kidney	0,05*
1013050	Edible offal	0,05*
1013990	Others	0,05*

1014000	(d) Goat	0,05*
1014010	Meat	0,05*
1014020	Fat	0,05*
1014030	Liver	0,05*
1014040	Kidney	0,05*
1014050	Edible offal	0,05*
1014990	Others	0,05*
1015000	(e) Horses, asses, mules or hinnies	0,05*
1015010	Meat	0,05*
1015020	Fat	0,05*
1015030	Liver	0,05*
1015040	Kidney	0,05*
1015050	Edible offal	0,05*
1015990	Others	0,05*
1016000	(f) Poultry -chicken, geese, duck, turkey and Guinea fowl-, ostrich, pigeon	0,05*
1016010	Meat	0,05*
1016020	Fat	0,05*
1016030	Liver	0,05*
1016040	Kidney	0,05*
1016050	Edible offal	0,05*
1016990	Others	0,05*
1017000	(g) Other farm animals (Rabbit, Kangaroo)	0,05*
1017010	Meat	0,05*
1017020	Fat	0,05*
1017030	Liver	0,05*
1017040	Kidney	0,05*
1017050	Edible offal	0,05*
1017990	Others	0,05*

1020000	(ii) Milk and cream, not concentrated, nor containing added sugar or sweetening matter, butter and other fats derived from milk, cheese and curd	0,02*
1020010	Cattle	0,02*
1020020	Sheep	0,02*
1020030	Goat	0,02*
1020040	Horse	0,02*
1020990	Others	0,02*
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	0,05*
1030010	Chicken	0,05*
1030020	Duck	0,05*
1030030	Goose	0,05*
1030040	Quail	0,05*
1030990	Others	0,05*
1040000	(iv) Honey (Royal jelly, pollen)	
1050000	(v) Amphibians and reptiles (Frog legs, crocodiles)	
1060000	(vi) Snails	
1070000	(vii) Other terrestrial animal products	

(\*) Indicates lower limit of analytical determination

**ABBREVIATIONS**

a.s.	active substance
ADI	acceptable daily intake
ARfD	acute reference dose
BBCH	Federal Biological Research Centre for Agriculture and Forestry (Germany)
Bw	body weight
CAC	Codex Alimentarius Commission
CAS	Chemical Abstract Service
CF	conversion factor for enforcement residue definition to risk assessment residue definition
CIPAC	Collaborative International Pesticide Analytical Council Limited
CS	capsule suspension
CXL	codex maximum residue limit
D	day
DAR	Draft Assessment Report (prepared under Directive 91/414/eeC)
DAT	days after treatment
DM	dry matter
DT <sub>90lab</sub>	period required for 90 percent dissipation (according to laboratory studies)
DT <sub>90f</sub>	period required for 90 percent dissipation (according to field studies)
dw	dry weight
EC	European Community
EDI	estimated daily intake
EFSA	European Food Safety Authority
EMS	evaluating Member State
EU	European Union
FAO	Food and Agriculture Organisation of the United Nations
FPD	flame photometric detection
GAP	good agricultural practice
GC	gas chromatography
GR	granule
GS	growth stage
ha	hectare
hL	hectolitre
HPLC	high performance liquid chromatography
HR	highest residue

IE	Ireland
ILV	independent laboratory validation
ISO	International Organization for Standardization
IUPAC	International Union of Pure and Applied Chemistry
JMPR	Joint FAO/WHO Meeting on Pesticide Residues
K <sub>oc</sub>	organic carbon adsorption coefficient
L	litre
LC	liquid chromatography
LC-MS	liquid chromatography-mass spectrometry
LC-MS-MS	liquid chromatography with tandem mass spectrometry
LOAEL	lowest observed adverse effect level
LOD	limit of detection
LOQ	limit of quantification
MRL	maximum residue limit
MS	Member States
NEU	Northern European Union
NOAEL	no observed adverse effect level
PF	processing factor
PHI	pre harvest interval
ppm	parts per million (10 <sup>-6</sup> )
PRIMo	Pesticide Residues Intake Model
RMS	rappporteur Member State
SEU	Southern European Union
SL	soluble concentrate
STMR	supervised trials median residue
TMDI	theoretical maximum daily intake
TRR	total radioactive residue
WHO	World Health Organisation