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Proposed Maximum Residue Limit

PMRL2014-62

Ethephon

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Under the authority of the *Pest Control Products Act*, Health Canada's Pest Management Regulatory Agency (PMRA) is proposing to establish new or revise existing maximum residue limits (MRLs) for ethephon on various commodities to permit the import and sale of foods containing such residues.

Ethephon is a fungicide currently registered in Canada for use on various commodities.

The PMRA must determine the quantity of residues that are likely to remain in or on the food commodities when ethephon is used according to label directions in the exporting country, and that such residues will not be a concern to human health. This quantity is then legally established as an MRL on the corresponding commodities. An MRL applies to the identified raw agricultural food commodity as well as to any processed food product that contains it, except where separate MRLs are specified for the raw agricultural commodity and a processed product made from it.

Consultation on the proposed MRLs for ethephon is being conducted via this document (see Next Steps, the last section of this document). A summary of the field trial data used to support the proposed MRLs can be found in Appendix I.

To comply with Canada's international trade obligations, consultation on the proposed MRLs is also being conducted internationally by notifying the World Trade Organization, as coordinated by the Standards Council of Canada.

The proposed MRLs, to replace or be added to the MRLs already established for ethephon, are as follows.

Table 1 Proposed Maximum Residue Limits for Ethephon

Common Name	Residue Definition	MRL (ppm) ¹	Food Commodity
Ethephon	<i>(P)</i> -(2-chloroethyl)phosphonic acid	7.0	Undelinted cotton seeds
		6.0	Apple juice
		5.0 ²	Bell peppers and non-bell peppers
		2.2 ³	Wheat bran
		2.0	Cantaloupes ⁴ , grapes ⁵ , pineapples ⁶ , wheat ³
		1.5	Sugarcane molasses
		1.0	Green coffee beans
		0.3	Black walnuts and English walnuts
		0.01	Macadamia nuts

- ¹ ppm = parts per million
- ² The MRL of 5.0 ppm is proposed to replace the established MRL of 3.0 ppm for peppers.
- ³ The MRL of 2.2 ppm is proposed to replace the established MRL of 2.0 ppm for “wheat milling fractions, excluding flour”. The MRL of 2.0 ppm is proposed to replace the established MRL of 0.5 ppm for wheat and will cover residues in the processed commodities: wheat flour, wheat germ and wheat shorts.
- ⁴ The MRL 2.0 ppm is proposed to replace the established MRL of 0.5 ppm for cantaloupes.
- ⁵ The MRL 2.0 ppm is proposed to replace the established MRL of 1.0 ppm for grapes.
- ⁶ The MRL 2.0 ppm is proposed to replace the established MRL of 0.5 ppm for pineapples.

MRLs established in Canada may be found using the Maximum Residue Limit Database on the Maximum Residue Limits for Pesticides webpage. The database allows users to search for established MRLs, regulated under the *Pest Control Products Act*, both for pesticides or for food commodities.

International Situation and Trade Implications

Table 2 compares the MRLs proposed for ethephon in Canada with corresponding American tolerances and Codex MRLs¹. American tolerances are listed in the Electronic Code of Federal Regulations, 40 CFR Part 180, by pesticide. A listing of established Codex MRLs is available on the Codex Alimentarius Pesticide Residues in Food website, by pesticide or commodity.

Table 2 Comparison of Canadian MRLs, American Tolerances and Codex MRLs where different

Food Commodity	Canadian MRL (ppm)	American Tolerance (ppm)	Codex MRL (ppm)
Undelinted cotton seeds	7.0	6.0	2
Apple juice	6.0	10.0	5 (Apple)
Bell peppers and non-bell peppers	5.0	30.0 (Pepper)	5 (Peppers) 50 (Peppers chili, dried)
Wheat bran	2.2	5.0	1 (Wheat)
Sugarcane molasses	1.5	1.5	Not Established
Green coffee beans	1.0	0.5	Not Established
Black walnuts and English walnuts	0.3	0.5 (walnut)	0.5 (walnuts)
Macadamia nuts	0.01	0.5	Not Established

¹ The Codex Alimentarius Commission is an international organization under the auspices of the United Nations that develops international food standards, including MRLs.

Next Steps

The PMRA invites the public to submit written comments on the proposed MRLs for ethephon up to 75 days from the date of publication of this document. Please forward your comments to Publications (see the contact information on the cover page of this document). The PMRA will consider all comments received before making a final decision on the proposed MRLs. Comments received will be addressed in a separate document linked to this PMRL. The established MRLs will be legally in effect as of the date that they are entered into the Maximum Residue Limit Database.

Appendix I

Summary of Field Trial Data Used to Support the Proposed MRLs

Residue data for ethephon in/on various crops were submitted to support the maximum residue limits on imported crops. Ethephon was applied to crops at the registered rate or at exaggerated rates, and crops were then harvested according to label directions. In addition, processing studies in treated crops were reviewed to determine the potential for concentration of residues of ethephon into processed commodities.

Maximum Residue Limits

The recommendation for maximum residue limits (MRLs) for ethephon was based upon the residues observed in crops and processed commodities treated according to label directions or at exaggerated rates, and the guidance provided in the OECD MRL Calculator. Table A1 summarizes the residue data used to calculate the proposed MRLs.

Table A1 Summary of Field Trial and Processing Data Used to Support Maximum Residue Limits (MRLs)

Commodity	Application Method/ Total Application Rate (g a.i./ha)	Preharvest Interval (days)	Residues (ppm)		Experimental Processing Factor
			Min	Max	
Hot peppers	Foliar/1100-1150	4-5	0.38	2.73	Not applicable
Sweet peppers	Foliar/1090-1170	5	0.12	2.61	Not applicable
Cantaloupes	Foliar/830-975	2	0.13	0.72	Not applicable
Apple	Foliar/1614	7	<0.01	3.79	1.6X (apple juice)
Grapes	Foliar/555-650	14	0.13	0.87	Not applicable
Macadamia nuts	Foliar/2400	3-6	<0.01	<0.01	Not applicable
Walnuts	Foliar/1400	5	<0.02	0.29	Not applicable
Wheat	Foliar/560	35-41	0.07	0.94	Not applicable
Wheat bran					3.5X
Wheat flour					0.1X
Wheat germ					2.0X
Wheat shorts					2.2X
Undelinted cotton seeds	Foliar/2170-2430	6-9	0.05	5.65	Not applicable

Commodity	Application Method/ Total Application Rate (g a.i./ha)	Preharvest Interval (days)	Residues (ppm)		Experimental Processing Factor
			Min	Max	
Green coffee beans	Foliar/942	4-6	<0.1	0.49	Not applicable
Pineapples	Foliar/4483	2	0.04	1.0	Not applicable
Pineapple juice					0.4X
Sugarcane molasses	Foliar/560	88	0.029	0.029	13.2X

Following the review of all available data, MRLs as proposed in Table A.1 are recommended to cover residues of ethephon. Residues of ethephon in these imported and domestically produced commodities at the proposed MRLs will not pose an unacceptable risk to any segment of the population, including infants, children, adults and seniors.