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Proposed Maximum Residue Limit

PMRL2014-77

Pyriproxyfen

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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 maximum residue limits (MRLs) for pyriproxyfen on various fruits and vegetables to permit the import and sale of foods containing such residues.

Pyriproxyfen is an insecticide currently registered in Canada for use on greenhouse tomatoes, peppers, cucumbers and eggplants.

The PMRA has determined the quantity of residues that are likely to remain in or on the imported food commodities when pyriproxyfen 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 imported commodity. 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 pyriproxyfen is being conducted via this document (see Next Steps). 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 be added to the MRLs already established for pyriproxyfen, are as follows.

Table 1 Proposed Maximum Residue Limits for Pyriproxyfen

Common Name	Residue Definition	MRL (ppm) ¹	Food Commodity
Pyriproxyfen	2-[1-methyl-2-(4-phenoxyphenoxy)ethoxy]pyridine	20	Citrus oil
		3.0	Leaf petioles (Crop Subgroup 4B), leafy <i>Brassica</i> greens (Crop Subgroup 5B), grapes
		2.0	Olive oil
		1.5	Stone fruits (Crop Group 12-09), bushberry (Crop Subgroup 13-07B), olives
		0.7	Head and stem <i>Brassica</i> (Crop Subgroup 5A)
		0.5	Citrus fruits (Crop Group 10-Revised), lychees

Common Name	Residue Definition	MRL (ppm) ¹	Food Commodity
		0.4	Pome fruits (Crop Group 11-09), small fruit vine climbing, except grapes (Crop Subgroup 13-07E, except gooseberries), sugar apples
		0.3	Edible-podded legume vegetables (Crop Subgroup 6A), strawberries
		0.1	Cucurbit vegetables (Crop Group 9), guavas
		0.06	Bulb onions (Crop Subgroup 3-07A)
		0.05	Undelinted cotton seeds
		0.02	Almond nuts

¹ ppm = parts per million.

MRLs are proposed for each commodity included in the listed crop groupings in accordance with the Residue Chemistry Crop Groups webpage in the Pesticides and Pest Management section of Health Canada's website.

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

MRLs may vary from one country to another for a number of reasons, including differences in pesticide use patterns and the locations of the field crop trials used to generate residue chemistry data.

Table 2 compares the MRLs proposed for pyriproxyfen in Canada with corresponding American tolerances and Codex MRLs.¹ 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.

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

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

Food Commodity	Canadian MRL (ppm)	American Tolerance (ppm)	Codex MRL (ppm)
Leaf petioles (Crop Subgroup 4B)	3.0	3.0 (CG 4)	Not established
Leafy <i>Brassica</i> greens (Crop Subgroup 5B)	3.0	2.0	Not established
Grape	3.0	2.5	Not established
Stone fruits (Crop Group 12-09)	1.5	1.0 (Stone Fruit Crop Group 12)	Not established
Bushberry (Crop Subgroup 13-07B)	1.5	1.0	Not established
Olives	1.5	1.0	Not established
Lychees	0.5	0.3	Not established
Pome fruits (Crop Group 11-09)	0.4	0.2	Not established
Small fruit vine climbing, except grape (Crop Subgroup 13-07E, except gooseberries)	0.4	0.35	Not established
Sugar apples	0.4	0.2	Not established
Edible-podded legume vegetables (Crop Subgroup 6A)	0.3	0.2 (CG 6)	Not established
Strawberries	0.3	0.3	Not established
Bulb onion (Crop Subgroup 3-07A)	0.06	0.7 (CG 3-07)	Not established
Almond nuts	0.02	0.02 (CG 14)	Not established

Next Steps

The PMRA invites the public to submit written comments on the proposed MRLs for pyriproxyfen 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 pyriproxyfen in various fruits and vegetables, almond nuts and undelinted cotton seeds were submitted to support the setting of maximum residue limits on these commodities. In addition, processing studies in treated plums, grapes, olives, apples, oranges and undelinted cotton seeds were reviewed or reassessed to determine the potential for concentration of residues of pyriproxyfen into processed commodities.

Maximum Residue Limits

The recommendation for maximum residue limits (MRLs) for pyriproxyfen was based upon the residues observed in crop commodities treated according to label directions and to exaggerated rates (citrus fruits, almond nuts, undelinted cotton seeds and tomatoes) in the exporting country, and the guidance provided in the OECD MRL Calculator. Table A1 summarizes the residue data used to calculate the proposed MRLs for the various imported commodities.

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

Commodity	Application Method/ Total Application Rate (g a.i./ha)	Pre-harvest interval (days)	Residues (ppm)		Experimental Processing Factor
			Min	Max	
Dry Bulb Onion	Foliar/120 – 128	2-4	<0.02	0.05	None
Celery	Foliar/214 – 222	13-15	0.08	1.62	None
Cabbage	Foliar/147 – 152	6-7	0.04	0.49	None
Cauliflower	Foliar/144 – 152	6-7	<0.02	0.14	None
Mustard Greens	Foliar/146 – 152	12	0.23	1.69	None
Snap Beans	Foliar/148 - 152	7	<0.02	0.07	None
Edible-Podded Peas	Foliar/150 – 151	7	0.02	0.14	None
Cantaloupe	Foliar/148 – 152	7	<0.02	0.04	None
Cucumber	Foliar/149 – 153	7	<0.02	<0.02	None
Summer squash	Foliar/147 – 152	7	<0.02	<0.02	None
Cherry	Foliar/370	13-14	0.05	0.63	None
Peach	Foliar/370	12-14	0.02	0.23	None
Plum	Foliar/370	12-14	0.02	0.23	2.9 (prune)
Kiwifruit	Foliar/250 – 251	29-30	0.09	0.21	None
Grape	Foliar/364 – 400	20-22	0.03	2.21	1.15 (raisins), 0.04 (grape juice)
Strawberry	Foliar/148 - 155	2-3	0.03	0.20	None

Commodity	Application Method/ Total Application Rate (g a.i./ha)	Pre-harvest interval (days)	Residues (ppm)		Experimental Processing Factor
			Min	Max	
Blueberry	Foliar/221 - 226	6-8	0.14	0.64	None
Lychees	Foliar/248-265	11-13	0.08	0.27	None
Guavas	Foliar/261 – 263	14-15	<0.02	0.06	None
Sugar apples	Foliar/251	12-14	0.02	0.18	None
Olives	Foliar/246	7	0.12	0.76	2.6 (olive oil)
Apple	Foliar/370 – 384	43-45	0.05	0.18	0.06 (juice)
Pear	Foliar/363 – 370	44-48	<0.02	0.09	None
Orange	Foliar/361 – 387	1	0.05	0.23	74 (orange oil), 0.03 (orange juice)
Lemon	Foliar/370 – 378	1	<0.02	0.24	None
Grapefruit	Foliar/363 – 385	1	0.07	0.16	None
Almond nuts	Foliar/370 – 374	16-21	<0.02	<0.02	None
Undelinted cotton seeds	Foliar/193 – 204	28-30	<0.02	0.04	0.2 (crude and refined oil)

Following the review of all available data, MRLs as proposed in Table 1 are recommended to cover residues of pyriproxyfen. Residues of pyriproxyfen in these imported crop commodities at the proposed MRLs will not pose an unacceptable risk to any segment of the population.