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Proposed Maximum Residue Limit

PMRL2008-19

Spirotetramat

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Health Canada's Pest Management Regulatory Agency (PMRA) has received applications to register technical grade spirotetramat and the end-use products Movento 150 OD and Movento 240 SC Insecticide, under the authority of the [Pest Control Products Act](#) (PCPA), for use in Canada. Spirotetramat is used to control a variety of sucking pests on tuberous and corm vegetables (Crop Subgroup 1C), leafy vegetables (Crop Groups 4 and 5), fruiting vegetables (Crop Group 8), cucurbit vegetables (Crop Group 9), pome fruits (Crop Group 11), stone fruits (Crop Group 12), small vine climbing fruits (Crop Subgroup 13-07F), tree nuts (Crop Group 14) and hops. See Appendix I for a list of crop group and subgroup commodities.

The evaluation of these spirotetramat applications indicated that the end-use products have merit and value and that the human health and environmental risks associated with their proposed uses are acceptable. Details regarding these applications can be found in Proposed Registration Decision [PRD2008-07](#), *Spirotetramat*.

Before registering a pesticide for food use in Canada, the PMRA must determine the quantity of residues that are likely to remain in or on food when the pesticide is used according to label directions and that such residues will not pose an unacceptable health risk. This quantity is then legally established as a maximum residue limit (MRL). 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.

In addition, the PMRA is proposing to establish import MRLs for spirotetramat on citrus fruits (Crop Group 10, refer to Appendix I), citrus oil, dry bulb onions and strawberries to permit the import and sale of food containing these residues. The PMRA has determined the quantity of residues that are likely to remain in or on the imported commodities when spirotetramat is used according to label directions in the exporting country, and that such residues will not pose an unacceptable dietary health risk. Details regarding the establishment of these import MRLs can also be found in PRD2008-07.

Currently, MRLs are legally established under the Food and Drug Regulations (FDR) after consultation through the *Canada Gazette*. Amendments to the *Food and Drugs Act* (FDA) via [Bill C-28](#), anticipated to come into force in 2008, will allow pesticide MRLs to be established legally under the PCPA without having to adopt MRLs by regulation under the FDA. This will result in a more efficient means of establishing, revising and revoking pesticide MRLs.

Consultation on the proposed MRLs for spirotetramat is being conducted through PRD2008-07. Specific information regarding the proposed MRLs can be found in Section 3.5.4 with supporting residue trial data provided in Appendix I, Table 5. The PMRA invites the public to submit written comments on the proposed MRLs for spirotetramat in accordance with the guidance in the PRD. Consultation in advance of Bill C-28 coming into force will allow the MRLs listed herein to be legally established as soon as possible after the FDA is amended.

The proposed MRLs for spirotetramat in Canada in or on food are as follows.

Table 1 Proposed Maximum Residue Limits for Spirotetramat

Common Chemical	Chemical Name of Substance	MRL (ppm)	Food Commodities (CG = Crop Group; CSG = Crop Subgroup)
Spirotetramat	<u>Spirotetramat (BYI08330):</u> <i>cis</i> -3-(2,5-dimethylphenyl)-8-methoxy-2-oxo-1-azaspiro[4.5]dec-3-en-4-yl ethyl carbonate	10	Hops (dried)
	including the metabolites	9.0	Leafy vegetables, except <i>Brassica</i> (CG 4)
	<u>BYI08330-enol:</u> <i>cis</i> -3-(2,5-dimethylphenyl)-4-hydroxy-8-methoxy-1-azaspiro[4.5]dec-3-en-2-one	8.0	Leafy <i>Brassica</i> greens (CSG 5B)
	<u>BYI08830-ketohydroxy:</u> <i>cis</i> -3-(2,5-dimethylphenyl)-3-hydroxy-8-methoxy-1-azaspiro[4.5]decane-2,4-dione	6.0	Citrus oil
	<u>BYI08330-enol-Glc:</u> <i>cis</i> -3-(2,5-dimethylphenyl)-8-methoxy-2-oxo-1-azaspiro[4.5]dec-3-en-4-yl beta-D-glucopyranoside	4.5	Stone fruits (CG 12)
	<u>BYI08330-enol-Glc:</u> <i>cis</i> -3-(2,5-dimethylphenyl)-8-methoxy-2-oxo-1-azaspiro[4.5]dec-3-en-4-yl beta-D-glucopyranoside	3.0	Raisins
	<u>BYI08330-mono-hydroxy:</u> <i>cis</i> -3-(2,5-dimethylphenyl)-4-hydroxy-8-methoxy-1-azaspiro[4.5]decan-2-one	2.5	Fruiting vegetables (CG 8), head and stem <i>Brassica</i> (CSG 5A)
	<u>BYI08330-enol-Glc:</u> <i>cis</i> -3-(2,5-dimethylphenyl)-8-methoxy-2-oxo-1-azaspiro[4.5]dec-3-en-4-yl beta-D-glucopyranoside	1.6	Potato flakes
	<u>BYI08330-mono-hydroxy:</u> <i>cis</i> -3-(2,5-dimethylphenyl)-4-hydroxy-8-methoxy-1-azaspiro[4.5]decan-2-one	1.3	Small fruit vine climbing, except fuzzy kiwifruit (CSG 13-07F)
	<u>BYI08330-enol-GA:</u> <i>cis</i> -3-(2,5-dimethylphenyl)-4-(β-D-glucopyranosyloxy)-8-methoxy-1-azaspiro[4.5]dec-3-en-2-one	0.7	Pome fruits (CG 11)
	Spirotetramat (BYI08330): <i>cis</i> -3-(2,5-dimethylphenyl)-8-methoxy-2-oxo-1-azaspiro[4.5]dec-3-en-4-yl ethyl carbonate	0.6	Citrus fruits (CG 10), tuberous and corm vegetables (CSG 1C)
	including the metabolite	0.4	Strawberries
	<u>BYI08330-enol:</u> <i>cis</i> -3-(2,5-dimethylphenyl)-4-hydroxy-8-methoxy-1-azaspiro[4.5]dec-3-en-2-one	0.3	Cucurbit vegetables (CG 9), dry bulb onions
	including the metabolite	0.25	Tree nuts (CG 14)
	<u>BYI08330-enol:</u> <i>cis</i> -3-(2,5-dimethylphenyl)-4-hydroxy-8-methoxy-1-azaspiro[4.5]dec-3-en-2-one	0.02	Fat, meat and meat byproducts of cattle, goats, horses and sheep
	0.01	Milk	

A complete list of all MRLs established in Canada can be found in [Table II, Division 15](#) of the FDR. Once the amendments to the FDA via Bill C-28 are in force, the list of legally established Canadian MRLs will be available on the PMRA's [MRL webpage](#), which will be updated to include the MRLs listed in this document.

International Situation and Trade Implications

The proposed Canadian MRLs are the same as corresponding tolerances to be established in the United States (under [40 CFR 180](#)). Codex MRLs¹ have not been established for spirotetramat on any commodity ([Codex MRLs](#) searchable by pesticide or commodity).

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

Appendix I

Crop Groups/Subgroups: Numbers and Definitions

Crop Group Number	Name of the Crop Group	Food Commodities Included in the Crop Group
1C	Root and tuber vegetables Tuberous and corm vegetables subgroup	Arracacha Arrowroot Cassava roots Chayote roots Chinese artichokes Chufa Edible canna Ginger roots Jerusalem artichokes Lerens Potatoes Sweet potato roots Tanier corms Taro corms True yam tubers Turmeric roots Yam bean roots

Crop Group Number	Name of the Crop Group	Food Commodities Included in the Crop Group
4	Leafy vegetables, except <i>Brassica</i>	Amaranth Arugula Cardoon Celery Celtuce Chinese celery Corn salad Dandelion leaves Dock Edible leaved chrysanthemum Endives Fresh chervil leaves Fresh Florence fennel leaves and stalk Fresh parsley leaves Garden cress Garden purslane Garland chrysanthemum Head lettuce Leaf lettuce New Zealand spinach Orach leaves Radicchio Rhubarb Spinach Swiss chard Upland cress Vine spinach Winter purslane
5A	<i>Brassica</i> (cole) leafy vegetables Head and stem <i>Brassica</i> subgroup	Broccoli Brussels sprouts Cabbages Cauliflower Chinese broccoli Chinese mustard cabbages Kohlrabi Napa Chinese cabbages
5B	<i>Brassica</i> (cole) leafy vegetables Leafy <i>Brassica</i> greens subgroup	Bok choy Chinese cabbages Broccoli raab Collards Kale Mustard greens Mustard spinach Rape greens

Crop Group Number	Name of the Crop Group	Food Commodities Included in the Crop Group
8	Fruiting vegetables	Bell peppers Eggplants Groundcherries Non-bell peppers Pepinos Pepper hybrids Tomatillos Tomatoes
9	Cucurbit vegetables	Balsam apples Balsam pears Cantaloupes Chayote fruit Chinese cucumbers Chinese waxgourds Citron melons Cucumbers Edible gourds (other than those listed in this item) Muskmelons (other than those listed in this item) Pumpkins Summer squash Watermelons West Indian gherkins Winter squash
10	Citrus fruits	Calamondins Citrus citron Citrus hybrids Grapefruits Kumquats Lemons Limes Oranges Pummelos Satsuma mandarins Tangerines
11	Pome fruits	Apples Crabapples Loquats Mayhaws Oriental pears Pears Quinces

Crop Group Number	Name of the Crop Group	Food Commodities Included in the Crop Group
12	Stone fruits	Apricots Nectarines Peaches Plumcots Plums Prune plums Sweet cherries Tart cherries
13-07F	Berries and small fruits Small fruits vine climbing subgroup, except fuzzy kiwifruit	Amur river grapes Gooseberries Grapes Hardy kiwifruit Maypop Schisandra berries Cultivars, varieties and/or hybrids of these
14	Tree nuts	Almonds Beechnuts Black walnuts Brazil nuts Butternuts Cashew nuts Chestnuts Chinquapins English walnuts Filberts Hickory nuts Macadamia nuts Pecans Pistachios Walnuts (other than those listed in this item)