Health Canada Santé Canada

Evaluation Report for Category B, Subcategory 3.11, 3.12 Application

Application Number: 2008-3594
Application: Add New Pests and Hosts
Product: Admire 240 Flowable Systemic Insecticide
Registration Number: 24094
Active ingredients (a.i.): Imidacloprid
PMRA Document Number: 2210746

Purpose of Application

The purpose of this application was to expand the use pattern of Admire 240 Flowable Systemic Insecticide from the existing registered crops to their respective crop groupings (root and tuber vegetable, leafy green vegetable, fruiting vegetable, cucurbit vegetables, pome fruit, stone fruit, berry and small fruit); as well as add new crops (peanut, hops, globe artichoke and tobacco) and new crop groupings (leafy petiole vegetables, legume vegetables, tree nuts, herbs, berry and small fruit) against a variety of pest species.

Health Assessments

The addition of new hosts and new pests to the product label for Admire 240 Flowable Systemic Insecticide does not impact on the toxicological profile of the product.

The use expansion for Admire 240 Flowable Systemic Insecticide was compared to the registered use pattern. All soil application use scenarios outside the registered use pattern are considered to be acceptable for mixer/loader/applicator based on risk assessments. Mixer, loader, applicator, and post-application worker exposures from foliar uses are either adequately addressed by the registered use pattern, or considered acceptable based on the risk assessments conducted. Pear, apple, cherry, peach, plum, blueberry, raspberry, and strawberry crops are considered acceptable for pick-your-own operations.

Residue data for imidacloprid on representative commodities were submitted to support the use expansion of this active on the Admire 240 Flowable Systemic Insecticide label.

Maximum Residue Limit(s)

Based on the residues observed in the various commodities, maximum residue limits (MRLs) to cover residues of imidacloprid including metabolites containing the 6-chloropyridinyl moiety will be established as shown in Table 1.

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Table 1. Summary of Field Trial Data and Processing Data Used to Establish Residue Limits.

Crop Group	Crop	Total Application Rate (kg a.i./ha)	PHI (days)	Min (ppm)	Max (ppm)	Proposed MRL	PMRA No.
1, except sugar beets	Carrot roots	0.57	7	0.05	0.09	0.4	1643279
	Garden beet roots	0.57	6-8	<0.10	0.35		1643297
	Radish roots	0.47	6-8	<0.05	0.13		1643278
An MRL of 0.3 ppm is already established in/on potatoes. A crop group MRL of 0.4 ppm is proposed to cover all commodities within crop group 1, except sugar beet.							
1	Sugar beet roots	9.0 kg a.i./100 kg seed	--	<0.05	<0.05	0.05	1643273
An import MRL of 0.05 ppm is proposed for sugar beet roots and an MRL of 0.3 ppm for sugar beet molasses.							
2	Garden beet tops	0.57	6-8	1.4	3.78	4.0	1643297
	Radish tops	0.47	6-8	0.47	2.74		1643278
Sugar beet tops and carrot tops are livestock feeds only, and will not be considered in the setting of the MRL for crop group 2.							
4A	Spinach	0.78	6-7	0.98	4.62	3.5	1643270
An MRL is already established in/on head and leaf lettuce at 3.5 ppm. Although the maximum residue in spinach is above the proposed MRL of 3.5 ppm, residues of imidacloprid are not expected to exceed this level given the degree of exaggeration of the application rate and the fact that a tankmix adjuvant was used in the trials. Therefore, a crop group MRLof 3.5 ppm is proposed to cover all commodities within crop group 4A.							
6, except dry soybeans	Lima beans (succulent)	0.57-0.67	7	0.05	0.67	4.0	1643268
	Snap beans (edible-podded)	0.57-0.67	7	0.05	0.89		1643258
	Dry beans	0.57	7	0.12	1.12		1643283
	Dry pea	0.57	7	0.11	1.01		1643260
	Succulent pea	0.57	7	0.2	1.06		
	Edible-podded pea	0.57	7	0.18	3.85		
An MRL of 4.0 ppm is proposed to cover all commodities within crop group 6, except dry soybeans.							
8-09	A crop group MRL of 1 ppm is proposed based on existing MRLs for tomatoes (1 ppm), peppers (1 ppm), and eggplants (0.08 ppm). Tomato paste (6 ppm) and tomato purée (3 ppm) will retain their established MRLs.						
11-09	MRLs are already established on apples (0.5 ppm) and pears (0.6 ppm). A crop group MRL of 0.6 ppm is proposed to cover all commodities within crop group 11-09.						
12-09	Plums (fresh)	0.56	7	0.08	0.7	1.3	1643282
	Plums (dried)	0.56	6	1.01	1.10		
MRLs are already established on peaches (1.1 ppm), nectarines (1.1 ppm), and cherries (3 ppm). A crop group MRL of 3 ppm is proposed to cover all commodities within crop group 12-09, which will encompass plum data.							
13-07B	Highbush blueberries	0.56	2-4	0.83	2.8	3.5	1643276 1643281
An MRL of 1 ppm is established on blueberries, and 0.1 ppm on juneberries (Saskatoon berries). New highbush blueberries data has indicated that an MRL of 3.5 ppm will cover all commodities within crop group 13-07B.							
13-07F	An MRL is established on grapes (1.5 ppm), which is proposed to cover all commodities within crop group 13-07F.						
13-07G, except cranberries	Strawberries	0.56-0.59	6-7	0.114	0.349	0.5	1643296
An MRL of 0.5 ppm is proposed to cover all commodities within crop group 13-07G, except cranberries (*Vacinium macrocarpon*).							
--	Cranberries	0.56	28-46	<0.05	<0.05	0.05	1643266
An MRL of 0.05 ppm is proposed to cover cranberries (*Vacinium macrocarpon*).							
14	Almond	0.392	7	<0.05	<0.05	0.05	1643294

An MRL of 0.05 ppm is established on pecan. Based on residue data from almonds, a crop group MRL of 0.05 ppm is proposed to cover all commodities within crop group 14.							
19A	Basil	0.57	7	1.11	4.08	14	1643294
	Dried basil	0.57	7	13.9	13.9		
	Chives	0.57	7	1.81	5.43		
An MRL of 14 ppm is proposed to cover all commodities within crop group 19A (fresh and dried).							
--	Globe artichokes	0.56	7	0.96	1.89	2.5	1643264
--	Peanuts	0.55-0.58	13-15	0.05	0.40	0.45	1643277
--	Dried Hops	0.33	27-28	0.82	5.8	6.0	1643298
--	Papaya	0.56	7	0.19	0.47	1.0	1886407
--	The proposed import MRL of 1 ppm on papaya will be extended to avocado, black sapote, canistel, mamey sapote, mango, sapodilla, star apple.						

Following the review of available data, the MRLs for the crops noted in Table 1 above are recommended to cover residues of imidacloprid, including metabolites containing the 6-chloropyridinyl moiety. The expansion of use on the Admire 240 Flowable Systemic Insecticide label at the recommended MRL will not pose an unacceptable risk to any segment of the population, including infants, children, adults and seniors.

Environmental Assessment

The fate and behaviour of imidacloprid in the environment has been presented previously in Regulatory Note REG2001-11, *Imidacloprid*, Regulatory Note R97-01, *Admire* and in the Evaluation Report ERC2011-03, *Confidor 200 SL containing Imidacloprid*.

The use expansion of Admire 240 Flowable Systemic Insecticide from the existing registered crops to their respective crop groupings as well as the addition of new crops and crop groupings was considered comparable to existing registered uses.

Value Assessment

Data were submitted from 51 efficacy studies conducted in locations across North America and abroad from 1990-2007 on a wide variety of horticultural crops. Efficacy studies on soil-applied imidacloprid showed that rates in the range of 8.0 – 8.5 mL (1.92 – 2.04 g a.i.) per 100 m row for aphids, 6.4 – 15.7 mL (1.54 – 3.77 g a.i.) per 100 m row for leafhoppers and 8.5 – 10.5 mL (2.04 – 2.52 g a.i.) per 100 m row for flea beetles provided control. Based on the submitted efficacy studies and extrapolation arguments from existing uses, soil-applied Admire 240 Flowable Systemic Insecticide for control of aphids, leafhoppers, flea beetles and Colorado potato beetle at rates ranging from 6.0 – 12 mL (1.44 – 2.88 g a.i.) per 100 m row for a number of crop-pest combinations is acceptable. The use of Admire 240 Flowable Systemic Insecticide for a reduction in numbers of larvae of the European chafer using 1200 mL/ha (288 g a.i./ha) is acceptable. Efficacy studies on foliar-applied imidacloprid showed that rates in the range of 117 – 467 mL/ha (28.08 – 112.08 g a.i./ha) for aphids, 200 – 354 mL/ha (48 – 84.96 g a.i./ha) for leafhoppers, 750 mL/ha (180 g a.i./ha) for pear psylla, 233 – 467 mL/ha (55.92 – 112.08 g a.i./ha) for blueberry maggot and 350 mL (84 g a.i./ha) for Japanese beetle provided control (suppression in leafhoppers for certain crops).

Based on the submitted efficacy studies and extrapolation arguments from existing uses, foliar-applied Admire 240 Flowable Systemic Insecticide for control of aphids, leafhoppers, pear psylla, blueberry maggot and Japanese beetle at rates ranging from 175 – 750 mL/ha (42 – 180 g a.i./ha) for a number of crop-pest combinations is acceptable.

Phytotoxicity data were submitted from 35 field trials conducted in North America and abroad from 1991-2006. The data show that imidacloprid does not cause any non-safety adverse effects.

Conclusion

The PMRA has reviewed the information provided and has determined the expansion of the Admire 240 Flowable Systemic Insecticide use pattern from the existing registered crops to their respective crop groupings (root and tuber vegetable, leafy green vegetable, fruiting vegetable, cucurbit vegetables, pome fruit, stone fruit, berry and small fruit); as well as add new crops (peanut, hops, globe artichoke and tobacco) and new crop groupings (leafy petiole vegetables, legume vegetables, tree nuts, herbs, berry and small fruit) against a variety of pest species is acceptable for full registration.

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