

## Squash Agrichemical Regulatory Risk Assessment

September 2023

Regulatory pressures on agrichemicals are increasing globally, with many being either restricted or withdrawn from use. For older agrichemicals these pressures are often the result of reconsiderations involving new or refined risk assessment methodologies that requiring the generation of new data. A consequence of which can be that many of these agrichemicals are not meeting contemporary risk assessment standards as the necessary data is unavailable, or where data is available, the risk posed is considered unacceptable.

The use of agrichemicals can also be impacted through differences in standards between trading partners. The lack of an appropriate pesticide maximum residue limit (MRL) in an importing country can, for practical purposes, effectively prohibit use in the exporting country so as to ensure compliance, as a MRL breach would adversely affect market access.

The effects of the above are greater regulatory pressure placed on the use of individual agrichemicals or chemical groups. As a consequence, it is possible that the number of approved agrichemical options could be adversely impacted.

To assist strategic planning, with respect to future pest management options, the following tables have been developed to highlight the regulatory threats to agrichemicals currently approved for the management of the pests and diseases in squash production, as well as current initiatives aimed at addressing identified pest management deficiencies.

## Squash Agrichemical Regulatory Risk Assessment

<b>R1</b>	Short-term: Critical concern over retaining access
<b>R2</b>	Medium-term: Maintaining access of significant concern
<b>R3</b>	Long-term: Potential issues associated with use - Monitoring required

Active Constituents	Chemical Group	Problem	Comments
<b>INSECT AND OTHER PESTS</b>			
Abamectin	<b>6</b>	Root-knot nematodes	APVMA: Nominated for spray drift label review
		Tomato red spider mite (PER14722)	Canada: Some uses amended, others cancelled
		Vegetable leafminer (PER81876)	EU: Use restricted to permanent greenhouses
Afidopyropen	<b>9D</b>	Cabbage aphid	EU: No authorisations
		Cotton / melon aphid	
		Currant lettuce aphid	
		Green peach aphid	
		Silverleaf (Poinsettia) whitefly	
Alpha-cypermethrin	<b>3A</b>	Cucumber fly (PER80138)	EU: No authorisations UK: No authorisation
<i>Bacillus thuringiensis</i>	<b>11A</b>	Armyworms	EU: Under review for renewal
		Cabbage white butterfly	
		Helicoverpa	
		Loopers	
Beta-cyfluthrin	<b>3A</b>	Cucumber moth	EU: No authorisation
		Helicoverpa	
Bifenazate	<b>20D</b>	Bryobia mite	Canada: Under review
		Two-spotted (Red spider) mite	EU: Use restricted to non-edible crops in permanent greenhouses
Bifenthrin	<b>3A</b>	Caterpillars	Canada: Not authorised EU: Not authorised
		Cucumber moth	
		Helicoverpa	
		Mites	
		Moths	
		Silverleaf (Poinsettia) whitefly	
		Whitefly	

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Active Constituents	Chemical Group	Problem	Comments
Buprofezin	16	Cotton (Sweet Potato) whitefly (PER82467)	EU: MRLs set to limit of quantification
		Greenhouse whitefly (PER82467)	
		Silverleaf (Poinsettia) whitefly (PER82467)	
Carbaryl	1A	28-spotted potato ladybird	Canada: Reviewed, large number of uses deleted Codex: Review scheduled, support uncertain EU: Authorisation not renewed USA: Under review
		Armyworms	
		Cucurbit stem borer	
		Cutworms	
		European earwig	
		Green vegetable bug	
		Helicoverpa	
		Leaf eating ladybirds	
		Potato moth (Leafminer)	
		Pumpkin beetle	
		Rutherglen bug	
		Wingless grasshopper	
Chlorantraniliprole	28	Cucumber moth	
		Helicoverpa	
		Lucerne leaf roller	
Chlorantraniliprole + thiamethoxam	4A + 28	Diamondback (Cabbage) moth	<u>Thiamethoxam</u> <a href="#">APVMA: Under review</a> Canada: Some field uses cancelled or amended EU: Not authorised USA: Re-registration with new risk mitigation measures
		Green vegetable bug	
		Greenhouse whitefly	
		Leafhoppers	
		Onion (Cotton seedling) thrips	
		Potato moth (Leafminer)	
		Psyllids (Lerps)	
		Silverleaf (Poinsettia) whitefly	
		Soybean looper	
		Tomato thrips	
		Western flower thrips	
		Vegetable leafhopper	
		Brown sowthistle aphid	
Cabbage cluster caterpillar			

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Active Constituents	Chemical Group	Problem	Comments
Chlorantraniliprole + thiamethoxam	4A + 28	Cabbage white butterfly	
		Cabbage-centre grub	
		Cluster caterpillar	
		Green peach aphid	
		Cabbage aphid	
Chlorpyrifos	1B	Ants	<a href="#">APVMA: Under review.</a> Codex: All MRLs revoked Canada: Cancellation of all uses. EU: No authorisation in place USA: EPA decision to cancel use on food crops
		Field crickets	
		Mealybugs	
		Mole crickets	
		Whitefly	
		Australian plague locust (PER11843)	
		Migratory locust (PER11843)	
		Spur-throated locust(PER11843)	
Clothianidin	4A	Cucumber fly (PER80101)	<a href="#">APVMA: Under review</a> Canada: Field uses cancelled or amended EU: Not authorised USA: Re-registration with new risk mitigation measures
Cyantraniliprole	28	Cotton / melon aphid	
		Cucumber moth	
		Helicoverpa	
		Silverleaf (Poinsettia) whitefly	
		Western flower thrips	
Cyromazine	17	Vegetable leafminer(PER81867)	EU: No authorisation
Diafenthiuron + cyantraniliprole	12A + 28	Cluster caterpillar	Diafenthiuron: EU: No authorisation
		Cotton / melon aphid	
		Cucumber moth	
		Green peach aphid	
		Helicoverpa	
		Plague thrips	
		Silverleaf (Poinsettia) whitefly	
		Tomato thrips	
		Two-spotted (Red spider) mite	
Western flower thrips			

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Active Constituents	Chemical Group	Problem	Comments
Diazinon	1B	Caterpillars	<a href="#">APVMA: Under review</a>
		Cutworms	EU: No authorisation in place
		Thrips	Codex: Withdrawal of Codex MRLs recommended
Dimpropridaz	36	Cotton/melon aphid	Codex: Evaluation for MRLs scheduled for 2025
		Greenhouse whitefly	EU: Authorisation pending
		Silverleaf whitefly	
Emamectin benzoate	6	Cluster caterpillar	EU: Candidate for substitution
		Cucumber moth	
		Helicoverpa	
		Tomato grub	
Etoxazole	10B	Tomato red spider mite (PER82460)	EU: Only uses on greenhouse ornamentals approved & Candidate for substitution
		Two-spotted (Red spider) mite (PER82460)	
Fonicamid	29	Cotton / melon aphid	
		Green peach aphid	
		Silverleaf (Poinsettia) whitefly	
Fluazaindolizine	N-UN	Root-knot nematodes	EU: Pending
Flubendiamide	28	Cluster caterpillar	
		Helicoverpa	
Flupyradifurone	4D	Cotton / melon aphid	EU: Under review
		Green peach aphid	
		Greenhouse whitefly	
		Silverleaf (Poinsettia) whitefly	
Helicoverpa NPV	31	Helicoverpa	
Hexythiazox	10A	Broad mite(PER14765)	
	10A	Tomato red spider mite(PER14765)	
	10A	Tomato russet mite(PER14765)	
	10A	Two-spotted (Red spider) mite(PER14765)	
Imidacloprid	4A	Green peach aphid	<a href="#">APVMA: Under review</a>
		Pear and cherry slug	Canada: Field uses cancelled or amended
		Silverleaf (Poinsettia) whitefly	EU: No authorisation USA: Re-registration with new risk mitigation measures

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Active Constituents	Chemical Group	Problem	Comments
Malathion/Maldison	<b>1B</b>	28-spotted potato ladybird	<a href="#">APVMA: Under review</a> Codex: Re-evaluation scheduled for 2025/26 EU: Restricted use to permanent greenhouses USA: Under review, label use patterns amended
		Aphids	
		Green vegetable bug	
		Jassids	
		Leafhoppers	
		Pumpkin beetle	
		Redlegged earth mite	
		Rutherglen bug	
		Australian plague locust (PER11843)	
		Migratory locust (PER11843)	
Spur throated locusts(PER11843)			
Methomyl	<b>1A</b>	Cluster caterpillar (PER82428)	<a href="#">APVMA: nominated for review</a> Canada: Re-evaluation completed. Majority of uses removed EU: No authorisations in place USA: Under review
		Cucumber moth (PER82428)	
		Helicoverpa (PER82428)	
		Loopers (PER82428)	
		Rutherglen bug (PER82428)	
		Thrips (PER82428)	
		Webworms (PER82428)	
		Western flower thrips (PER82428)	
Paraffinic / Petroleum oil	<b>UNM</b>	Aphids	
		Leafhoppers	
		Greenhouse whitefly	
		Mites	
		Silverleaf (Poinsettia) whitefly	
		Thrips	
Pirimicarb	<b>1A</b>	Aphids	Codex: JMPR re-evaluation scheduled EU: Candidate for substitution
Pymetrozine	<b>9B</b>	Cotton / melon aphid	Canada: Restricted use to glasshouses only Codex: No registrant support EU: Not authorised
		Cowpea aphid	
		Green peach aphid	
		Greenhouse whitefly	
		Potato aphid	
		Silverleaf (Poinsettia) whitefly	

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Active Constituents	Chemical Group	Problem	Comments
Pyrethrins	3A	Ants	Canada: Under review Codex: Under review
		Aphids	
		Cabbage white butterfly	
		Caterpillars	
		Diamondback (Cabbage) moth	
		Earwig	
		Leafhoppers	
		Mealybugs	
		Scale insects	
		Thrips	
		Whitefly	
Pyriproxyfen	7C	Silverleaf (Poinsettia) whitefly	
Spinetoram	5	Caterpillars	
		Cucumber moth	
		Helicoverpa	
		Western flower thrips	
		Vegetable leafminer (PER91155)	
Spinosad	5	Cucumber moth	
		Helicoverpa	
		Western flower thrips	
		Fall armyworm (PER89870)	
		Vegetable leafminer (PER90928)	
Spirotetramat	23	Cotton / melon aphid	
		Green peach aphid	
		Silverleaf (Poinsettia) whitefly	
Spodoptera (NPV)	31	Fall armyworm(PER90820)	
Sulfoxaflor	4C	Cotton / melon aphid	USA: Pollinator concerns EU: Restricted to permanent glasshouses only
		Green peach aphid	
		Greenhouse whitefly	
Trichlorfon	1B	Cutworms	<a href="#">APVMA: nominated for review</a> Codex: No MRLs EU: No authorisations USA: No MRLs

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Active Constituents	Chemical Group	Problem	Comments
<b>DISEASES</b>			
Ametoctradin + dimethomorph	<b>45 + 40</b>	Downy mildew	<u>Dimethomorph</u> EU: Under review
<i>Aureobasidium pullulans</i>	<b>NC</b>	Grey mould Sclerotinia rot	
Azoxystrobin	<b>11</b>	Downy mildew Gummy stem blight Powdery mildew	Canada: Review proposed
Azoxystrobin + oxathiapiprolin	<b>11 + 49</b>	Gummy stem blight Sclerotinia rot	
Benalaxyl	<b>4</b>	Alternaria leaf blight Downy mildew Gummy stem blight	EU: No authorisation (Benalaxyl-M approved)
Boscalid + kresoxim-methyl	<b>7 + 11</b>	Powdery mildew	<u>Boscalid</u> Canada: Under review
Bupirimate	<b>8</b>	Powdery mildew	
Chlorothalonil	<b>M5</b>	Alternaria leaf blight Anthracnose Downy mildew Gummy stem blight Powdery mildew Rhizoctonia ground rot Target leafspot	<a href="#">APVMA: nominated for review</a> Canada: Cancellation of uses proposed EU: No authorisation in place USA: Under review
Copper	<b>M1</b>	Angular leaf spot Anthracnose Bacterial spot Downy mildew Gummy stem blight Leaf diseases/spots Powdery mildew	EU: Candidate for substitution

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Active Constituents	Chemical Group	Problem	Comments
Cyflufenamid	U6	Powdery mildew	
Dimethomorph	40	Alternaria leaf blight	EU: Under review
		Anthracnose	
		Downy mildew	
		Gummy stem blight	
		Septoria spot	
Fluopicolide + propamocarb HCl	28 + 43	Downy mildew	EU: Candidate for substitution
Florylpicoxamid	21	Powdery mildew	EU: Authorisation pending
Hydrogen peroxide +peroxyacetic acid	M	Powdery mildew	
Iodine	M	Bactericide	
		Fungi	
Mancozeb	M3	Angular leaf spot	<a href="#">APVMA: Nominated for review</a> Canada: Many uses cancelled Codex: To be reviewed 2024/25 EU: Authorisation not renewed
		Anthracnose	
		Downy mildew	
		Gummy stem blight	
		Septoria spot	
		Alternaria leaf blight	
		Powdery mildew	
Melaleuca oil	46	Powdery mildew	
Metalaxyl/ Metalaxyl-M	4	Phytophthora soil fungus (Dieback)	<a href="#">Metalaxyl</a> EU: Candidate for substitution <a href="#">Metalaxyl-M</a> EU: Restricted use approval
		Damping off	
		Downy mildew	
		Gummy stem blight	
		Alternaria leaf blight	
Metiram	M3	Downy mildew	<a href="#">APVMA: Nominated for review</a> Canada: Only foliar use on potato Codex: To be reviewed 2024/25 EU: No authorisation
		Gummy stem blight	
Metrafenone	U8	Powdery mildew	
Oxadixyl	4	Gummy stem blight	EU: No authorisations
		Downy mildew	
Oxathiapiprolin	49	Downy mildew	

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Active Constituents	Chemical Group	Problem	Comments
Penthiopyrad	7	Grey mould	
		Gummy stem blight	
		Powdery mildew	
Phosphorous acid	33	Downy mildew	
Propineb	M3	Anthracnose	<a href="#">APVMA: Nominated for review</a> EU: No authorisation in place Codex: To be reviewed 2024/25
		Downy mildew	
		Gummy stem blight	
Proquinazid	13	Powdery mildew	
Pydiflumetofen + difenoconazole	7 + 3	Alternaria leaf spot	Pydiflumetofen: EU: Authorisation pending Difenoconazole: <a href="#">APVMA: nominated for review</a> EU: Candidate for substitution USA: Under review
		Gummy stem blight	
		Powdery mildew	
Pyriofenone	50	Powdery mildew	
<i>Streptomyces lydicus</i>	BM02	Powdery mildew	
Triadimenol	3	Powdery mildew	<a href="#">APVMA: nominated for review</a> <a href="#">Canada</a> : No authorisation in place EU: No authorisation in place USA: Registration cancelled
Zineb	M3	Anthracnose	<a href="#">APVMA: Nominated for review</a> Codex: To be reviewed 2024/25 EU: No authorisation in place
		Downy mildew	

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Active Constituents	Chemical Group	Comment
<b>WEEDS</b>		
Clomazone	<b>13</b>	
Dimethenamid-P (Kabocho)	<b>15</b>	
Fluazifop-P	<b>1</b>	

<b>Plant growth regulator</b>		
Paclobutrazol Compactness (seedlings)		EU: Candidate for substitution

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