

## Potato 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Regulatory pressures on agrichemicals are increasing globally, with many being either restricted or withdrawn from use.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 potatoes, as well as current initiatives aimed at addressing identified pest management deficiencies.

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<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>	Red tomato spider mite	APVMA: Nominated for spray drift label review
		Vegetable leafminer	Canada: Some uses amended, others cancelled
		Tomato/ potato psyllid(PER84249)	EU: Use restricted to permanent greenhouses
		Potato moth (Leafminer) (PER90864)	
Acephate	<b>1B</b>	Potato moth (Leafminer)	<a href="#">APVMA: nominated for review</a> Canada: Reviewed, continued use with risk mitigation EU: No authorisation in place USA: Under review
Acetamiprid	<b>4A</b>	Green peach aphid	<a href="#">APVMA: Under review</a> EU: Under review
Afidopyropen	<b>9D</b>	Cabbage aphid	EU: No authorisations
		Cotton aphid	
		Currant lettuce aphid	
		Green peach aphid	
		Silverleaf (Poinsettia) whitefly	
Alpha-cypermethrin	<b>3A</b>	Garden weevil (PER12612)	EU: No authorisation UK: No authorisation
Bifenthrin	<b>3A</b>	Tomato/ potato psyllid (PER84249)	Canada: Not authorised EU: Not authorised
Carbaryl	<b>1A</b>	Armyworms/cutworms	Canada: Reviewed, large number of uses deleted
		European earwig	Codex: Review scheduled, support uncertain
		Green vegetable bug	EU: Authorisation not renewed
		Helicoverpa	USA: Under review

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Active Constituents	Chemical Group	Problem	Comments
Carbaryl	1A	Leaf eating ladybirds	
		Potato moth (Leafminer)	
		Rutherglen bug	
		Wingless grasshopper	
Chlorantraniliprole	28	Helicoverpa	
		Potato moth (Leafminer)	
Chlorantraniliprole +thiamethoxam	28 + 4A	Brown sowthistle aphid(PER87809)	<p>Thiamethoxam:  <a href="#">APVMA: Under review</a>                      Canada: Some field uses cancelled or amended                      EU: Not authorised                      USA: Re-registration with new risk mitigation measures</p>
		Cabbage aphid(PER87809)	
		Cabbage centre grub(PER87809)	
		Cabbage cluster caterpillar(PER87809)	
		Cabbage white butterflies(PER87809)	
		Cluster caterpillar(PER87809)	
		Diamondback (Cabbage) moth(PER87809)	
		Green peach aphid(PER87809)	
		Green vegetable bug(PER87809)	
		Greenhouse whitefly(PER87809)	
		Helicoverpa(PER87809)	
		Liriomyza spp (PER87809 – Qld only)	
		Leafhoppers(PER87809)	
		Lucerne leafroller(PER87809)	
		Onion (Cotton seedling) thrips(PER87809)	
		Potato moth (Leafminer) (PER87809)	
		Psyllids (Lerps) (PER87809)	
		Silverleaf whiteflies(PER87809)	
		Soybean looper(PER87809)	
		Tomato thrips(PER87809)	
Vegetable leafhopper(PER87809)			
Western flower thrips(PER87809)			

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Active Constituents	Chemical Group	Problem	Comments
Chlorpyrifos	1B	Black field cricket	<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
		Cutworms	
		Field crickets	
		Mole crickets	
		Spotted vegetable weevil	
		Vegetable weevil	
		Whitefringed weevil	
		Wireworms	
		African black beetle(PER80344)	
		Redlegged earth mite(PER80344)	
Cyantraniliprole	28	Leafminer ( <i>Liriomyza</i> spp.) (PER90387)	
		Tomato/ potato psyllid (PER84805)	
Diazinon	1B	Potato moth (Leafminer)	<a href="#">APVMA: Under review</a> EU: No authorisation in place Codex: Withdrawal of Codex MRLs recommended
Dimethoate	1B	Aphids	Codex: No MRL EU: Not authorised
		Jassids	
		Leafhoppers	
		Mites	
		Redlegged earth mite	
		Thrips	
Fipronil	2B	Mole crickets	<a href="#">APVMA: Under review</a> Codex: Re-evaluation completed, many MRLs withdrawn EU: No authorisation in place USA: Under review
		Whitefringed weevil	
		Wireworms	
Flonicamid	29	Cotton aphid	
		Green peach aphid	
		Potato aphid	

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Active Constituents	Chemical Group	Problem	Comments
Fluazaindolizine	N-UN	Root knot nematode	EU: Pending
Flubendiamide	28	Cabbage white butterflies	
		Cluster caterpillar	
		Diamondback (Cabbage) moth	
		Helicoverpa	
		Potato moth (Leafminer)	
Flupyradifurone	4D	Green peach aphid	EU: Under review
		Silverleaf whitefly	
Gamma-cyhalothrin	3A	Vegetable leafhopper	EU: Candidate for substitution
Helicoverpa NPV	31	Helicoverpa	
Hexythiazox	10A	Red tomato spider mite (PER14765)	
Imidacloprid	4A	Green peach aphid	<a href="#">APVMA: Under review</a> Canada: Field uses cancelled or amended EU: No authorisation USA: Re-registration with new risk mitigation measures
		Silverleaf (Poinsettia) whitefly	
		Silverleaf whiteflies	
Lambda-cyhalothrin	3A	Vegetable leafhopper	EU: Candidate for substitution
		Tomato/ potato psyllid(PER84249)	
Methomyl	1A	Australian cabbage Looper	<a href="#">APVMA: nominated for review</a> Canada: Re-evaluation completed. Majority of uses removed EU: No authorisations in place USA: Under review
		Potato moth (Leafminer)	
		Cluster caterpillar(PER82428)	
		Cucumber moth(PER82428)	
		Helicoverpa(PER82428)	
		Loopers(PER82428)	
		Rutherglen bug(PER82428)	
		Webworms(PER82428)	
		Thrips(PER82428)	
		Tomato/ potato psyllid(PER82428)	
		Western flower thrips(PER82428)	

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Active Constituents	Chemical Group	Problem	Comments
Permethrin	3A	Potato moth (Leafminer)	Codex: Re-evaluation scheduled. Support uncertain EU: No authorisation
Phorate	1B	Aphids	<a href="#">APVMA: nominated for review</a> EU: No authorisation in place
		Jassids	
		Thrips	
		Two-spotted (Red spider) mite	
		Wireworms	
Pirimicarb	1A	Potato aphid	Codex: JMPR re-evaluation scheduled EU: Candidate for substitution
Pymetrozine	9B	Green peach aphid	Canada: Restricted use to glasshouses only Codex: No registrant support EU: Not authorised
Pyrethrins	3A	Potato moth (Leafminer)	Canada: Under review Codex: Under review
Spinetoram	5	Caterpillars	
		Helicoverpa	
		Lightbrown apple moth	
		Loopers	
		Potato moth (Leafminer)	
		Tomato/ potato psyllid (PER84757)	
		Leafminer (Liriomyza spp) (PER91155)	
Spinosad	5	Helicoverpa	
		Lightbrown apple moth	
		Loopers	
		Potato moth (Leafminer)	
		Fall armyworm (PER89870)	
		Leafminer (Liriomyza spp) (PER90928)	

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Active Constituents	Chemical Group	Problem	Comments
Spirotetramat	23	Silverleaf (Poinsettia) whitefly	
		Tomato/ potato psyllid (PER84245)	
Spodoptera (NPV)	31	Fall armyworm(PER90820)	
Spodoptera (NPV)	31	Fall armyworm(PER91477)	
Sulfoxaflor	4C	Green peach aphid	USA: Pollinator concerns
		Tomato/ potato psyllid	EU: Restricted to permanent glasshouses only
Thiodicarb	1A	Helicoverpa	EU: No authorisations
Trichlorfon	1B	Cutworms	<a href="#">APVMA: nominated for review</a> Codex: No MRLs EU: No authorisations USA: No MRLs

## Potato Agrichemical Regulatory Risk Assessment

Active Constituents	Chemical Group	Problem	Comments
<b>DISEASES</b>			
Amisulbrom	<b>21</b>	Pink rot	
		Powdery scab	
Azoxystrobin	<b>11</b>	Late (Irish) blight	Canada: Review proposed
		Rhizoctonia canker(Black scurf)	
		Silver scurf	
		Target spot (Early blight)	
Azoxystrobin + fluazinam	<b>11 + 29</b>	Target spot (Early blight)	
		Late (Irish) blight	
Azoxystrobin + difenoconazole	<b>11 + 3</b>	Late (Irish) blight	Difenoconazole: <a href="#">APVMA: nominated for review</a> EU: Candidate for substitution USA: Under review
<i>Bacillus amyloliquefaciens</i>	<b>BM02</b>	Rhizoctonia canker(Black scurf)	
Boscalid	<b>7</b>	Sclerotinia rot	
		Target spot (Early blight)	
Chlorothalonil	<b>M5</b>	Late (Irish) blight	<a href="#">APVMA: nominated for review</a> Canada: Cancellation of uses proposed EU: No authorisation in place USA: Under review
		Target spot (Early blight)	
Copper	<b>M1</b>	Late (Irish) blight	EU: Candidates for substitution
		Target spot (Early blight)	
		Pink rot	
Copper +metalaxyl-M	<b>M1 + 4</b>	Late (Irish) blight	<u>Copper</u> EU: Candidates for substitution <u>Metalaxyl-M</u> EU: Restricted use approval
		Target spot (Early blight)	
Cyazofamid	<b>21</b>	Late (Irish) blight	Canada: Review initiated
Cyproconazole	<b>3</b>	Late (Irish) blight	<a href="#">APVMA: nominated for review</a> EU: No authorisation in place
		Target spot (Early blight)	



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Active Constituents	Chemical Group	Problem	Comments
Difenoconazole	3	Target spot (Early blight)	<a href="#">APVMA: nominated for review</a> EU: Candidate for substitution USA: Under review
Dimethomorph	40	Late (Irish) blight	EU: Under review
		Target spot (Early blight)	
Fluazinam	29	Late (Irish) blight	Canada: Under review
		Sclerotinia rot	
Fludioxonil	12	Anthracnose (Black Dot)	EU: Under review, & candidate for substitution
		Common scab	
		Dry rot	
		Rhizoctonia canker(Black scurf)	
		Silver scurf	
Fludioxonil +sedaxane	12 + 7	Anthracnose (Black Dot)	<u>Fludioxonil</u> EU: Under review, & candidate for substitution
		Common scab	
		Dry rot	
		Gangrene	
		Rhizoctonia canker(Black scurf)	
		Silver scurf	
Fluopicolide +propamocarb HCl	43 + 28	Late (Irish) blight	<u>Fluopicolide</u> EU: Candidate for substitution
Flutolanil	7	Rhizoctonia canker(Black scurf)	
Hydrogen peroxide +peroxyacetic acid	M	Powdery scab	
		Rhizoctonia canker(Black scurf)	
Imazalil	3	Dry rot	EU: Under review. Withdrawal of many EU MRLs proposed
		Gangrene	
		Silver scurf	
Inpyrfluxam	7	Rhizoctonia solani – soil borne	EU: Authorisation pending
Iodine	M	Bactericide	
		Fungi	

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Active Constituents	Chemical Group	Problem	Comments
Iprodione	2	Hypocotyl rot	Canada: Majority of food crop uses deleted Codex: Under review EU: No authorisation in place USA: Proposed deletion or restriction of uses
		Rhizoctonia canker(Black scurf)	
		Sclerotinia rot	
		Target spot (Early blight)	
Mancozeb	M3	Fusarium seed piece decay	<a href="#">APVMA: nominated for review</a> Canada: Many uses cancelled Codex: To be reviewed 2024/25 EU: Authorisation not renewed
		Late (Irish) blight	
		Seed piece breakdown	
		Target spot (Early blight)	
Metalaxyl/Metalaxyl-M	4	Pink rot	<u>Metalaxyl</u> EU: Candidate for substitution <u>Metalaxyl-M</u> EU: Restricted use approval
Metiram	M3	Late (Irish) blight	<a href="#">APVMA: nominated for review.</a> Canada: Only foliar use on potato Codex: To be reviewed 2024/25 EU: Under review
		Target spot (Early blight)	
Metiram +pyraclostrobin	M3 + 11	Late (Irish) blight	<u>Metiram</u> <a href="#">APVMA: nominated for review.</a> Canada: Only foliar use on potato Codex: To be reviewed 2024/25 EU: No authorisation
		Target spot (Early blight)	
Pencycuron	20	Rhizoctonia canker(Black scurf)	EU: No authorisation
Penflufen	7	Rhizoctonia canker(Black scurf)	EU: Proposed non-authorisation No registrant support
Penthiopyrad	7	Alternaria leaf spots	
		Powdery mildew	
Phosphorous acid	33	Pink rot(PER85733)	
Procymidone	2	Sclerotinia rot	Codex: No MRLs
		Target spot (Early blight)	EU: No authorisations
Propineb	M3	Late (Irish) blight	<a href="#">APVMA: nominated for review.</a> EU: No authorisation in place Codex: To be reviewed 2024/25
		Target spot (Early blight)	

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Active Constituents	Chemical Group	Problem	Comments
Pydiflumetofen	7	Target spot (Early blight)	EU: Authorisation pending
Pydiflumetofen + difenoconazole	7 + 3	Powdery mildew Target spot (Early blight)	Pydiflumetofen: EU: Authorisation pending Difenoconazole: <a href="#">APVMA: nominated for review</a> EU: Candidate for substitution USA: Under review
Pydiflumetofen + fludioxonil	7 + 12	Botrytis Sclerotinia	Pydiflumetofen: EU: Authorisation pending Fludioxonil EU: Under review, & candidate for substitution
Pyrimethanil	9	Target spot (Early blight)	Canada: Review initiated
Quintozene	14	Rhizoctonia canker(Black scurf)	Codex: Withdrawal of Codex MRLs recommended EU: No authorisations
Sulfur	M2	Late (Irish) blight Target spot (Early blight)	
Thiabendazole	1	Dry rot Gangrene Silver scurf	
Tolclofos-methyl	14	Rhizoctonia canker(Black scurf)	EU: Proposed restricted authorisation
Zineb	M3	Late (Irish) blight Target spot (Early blight)	<a href="#">APVMA: nominated for review</a> Codex: To be reviewed 2024/25 EU: No authorisation in place

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Active Constituents	Chemical Group	Comment
<b>WEEDS</b>		
2,2-DPA	<b>0</b>	
2, 4-D	<b>4</b>	
Amitrole	<b>34</b>	<a href="#">APVMA: Nominated for review</a> EU: No authorisation in place
Asulam	<b>18</b>	EU: Under review, proposed restriction to non-edible crops
Atrazine	<b>5</b>	Canada: Review proposed EU: No authorisations in place USA: Under review
Carfentrazone-ethyl	<b>14</b>	
Chlorthal-dimethyl	<b>3</b>	EU: No authorisation in place
Clethodim	<b>1</b>	Codex: MRLs proposed for deletion
Clomazone	<b>13</b>	
Cyanazine	<b>5</b>	<a href="#">APVMA: Nominated for review</a> EU: No authorisation in place
Dicamba	<b>4</b>	Canada: Review initiated
Diquat	<b>22</b>	<a href="#">APVMA: Currently under review</a> EU: No authorisation in place
EPTC	<b>15</b>	EU: No authorisations in place
Fluazifop	<b>A</b>	
Glyphosate	<b>M</b>	Ongoing issues internationally EU: Under review
Linuron	<b>5</b>	Canada: Cancellation of many uses EU: No authorisations in place
Metribuzin	<b>5</b>	EU: Candidate for substitution
Paraquat	<b>22</b>	<a href="#">APVMA: Currently under review</a> Canada: Review initiated EU: No authorisation in place Rotterdam Convention: nomination

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Active Constituents	Chemical Group	Comment
Prometryn	5	EU: No authorisations
Prosulfocarb	15	
Quizalofop	1	Canada: Under re-evaluation EU: Candidate for substitution
Sethoxydim	1	EU: No authorisations in place
S-metolachlor	15	EU: Proposed non-renewal
<b>Plant growth regulators</b>		
Chlorpropham		
Paclobutrazol (PER88994)		EU: Candidate for substitution

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