

## **Chicory, Horseradish, Radish, Swede & Turnip 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Regulatory pressures on agrichemicals are increasing globally, with many being either restricted or withdrawn from use.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 carrots as well as current initiatives aimed at addressing identified pest management deficiencies.

## Chicory, horseradish, parsnip, radish, swede and turnip Agrichemical Regulatory Risk Assessment

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

Active Constituents	Chemical Group	Problem	Comments
<b>INSECT AND OTHER PESTS</b>			
Abamectin	6	Western flower thrips (Chicory)	APVMA: Nominated for spray drift label review Canada: Some uses amended, others cancelled EU: Use restricted to permanent greenhouses
		Vegetable leafminer (PER81876)	
Alpha-cypermethrin	3A	Cluster caterpillar (Radish, Swede & Turnip)	EU: No authorisation
		Cabbage white butterfly (Radish, Swede & Turnip)	
		Helicoverpa (Radish, Swede & Turnip)	
		Redlegged earth mite (Radish; PER14457: Chicory)	
		Australian plague locust (Turnips)	
		Diamondback moth (Turnips)	
		Spur-throated locust (Turnips)	
Carbaryl	1A	Spur-throated locust (Swede & Turnip)	Canada: Reviewed, large number of uses deleted Codex: Review scheduled, support uncertain EU: Authorisation not renewed USA: Under review
		Green vegetable bug (Swede & Turnip)	
		Armyworms (Swede & Turnip)	
		Cabbage white butterfly (Swede & Turnip)	
		Cutworms (Swede & Turnip)	
		Diamondback moth (Swede & Turnip)	
		Leafeating ladybirds (Swede & Turnip)	
		Potato moth (Swede & Turnip)	
		Pumpkin beetle (Swede & Turnip)	
		Vegetable weevil (Swede & Turnip)	

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Active Constituents	Chemical Group	Problem	Comments
Chlorpyrifos	1B	Earwig	<a href="#">APVMA: Under review.</a> Codex: All Codex MRLs deleted Canada: Cancellation of all uses. EU: No authorisation in place USA: EPA decision to cancel use on food crops
		Mole crickets	
		Spotted vegetable weevil	
		Spur-throated locust	
		Cutworms	
		Field crickets	
		Seed harvesting ants	
		Vegetable weevil	
		African black beetle (PER14583 Swedes & Turnips)	
		False wireworm (PER14583 Swedes & Turnips)	
		Wireworm (PER14583 Swedes & Turnips)	
		Australian plague locust (Radish & Turnip: PER11843)	
		Migratory locust (Radish & Turnip: PER11843)	
		Spur-throated locust (Radish & Turnip: PER11843)	
		Blue oat mite (Swede & Turnip)	
Redlegged earth mite (Swede & Turnip)			
Diazinon	1B	Caterpillars (Parsnip)	<a href="#">APVMA: Under review</a> EU: No authorisation in place Codex: JMPR recommended withdrawal of Codex MRLs.
		Cutworms (Parsnip)	
		Cabbage white butterfly (Turnip)	
		Diamondback moth (Cabbage moth) (Turnip)	

**Chicory, horseradish, parsnip, radish, swede and turnip Agrichemical Regulatory Risk Assessment**

Active Constituents	Chemical Group	Problem	Comments
Dimethoate	<b>1B</b>	African black beetle (Swedes & Turnips)	Codex: No MRLs. EU: Not authorised
		Aphids (Turnip)	
		Bugs (Turnip)	
		Green vegetable bug (Turnip)	
		Jassids (Turnip)	
		Leafhoppers (Turnip)	
		Mites (Turnip)	
		Redlegged earth mite (Turnip)	
		Spur-throated locust (Turnip)	
		Thrips (Turnip)	
Emamectin benzoate	<b>6</b>	Cabbage white butterfly	EU: Candidate for substitution
		Cluster caterpillar	
		Diamondback moth (Cabbage moth)	
		Helicoverpa	
		Loopers	
Fipronil	<b>2B</b>	Diamondback moth (Cabbage moth) (Swedes & Turnips)	<a href="#">APVMA: Under review</a> Codex: Re-evaluation underway EU: No authorisation in place USA: Under review
Fluazaindolizine	<b>N-UN</b>	Root knot nematode	EU: Pending
Flubendiamide	<b>28</b>	Cabbage white butterfly	
		Cluster caterpillar	
		Diamondback moth (Cabbage moth)	
		Helicoverpa	
		Potato moth	

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Active Constituents	Chemical Group	Problem	Comments
Imidacloprid	4A	Currant lettuce aphid (Chicory)	<a href="#">APVMA: Under review</a> Canada: Field uses cancelled or amended EU: No authorisation USA: Re-registration with new risk mitigation measures
Indoxacarb	22	Helicoverpa (Chicory)	Canada: No authorisations EU: No authorisation UK: Proposed non-renewal
Lambda-cyhalothrin	3A	Diamondback moth (Cabbage moth) (Radish: PER11949) Loopers (Radish: PER11949)	EU: Candidate for substitution
Methomyl	1A	Cluster caterpillar (PER82428) Cucumber moth (PER82428) Helicoverpa (PER82428) Loopers (PER82428) Rutherglen bug (PER82428) Thrips (PER82428) Webworms (PER82428) Western flower thrips (PER82428) Fall armyworm (PER89293: Radish, swede, turnip)	<a href="#">APVMA: nominated for review</a> Canada: Re-evaluation completed. Majority of uses removed EU: No authorisations in place USA: Under review
Paraffinic oil/petroleum oil	-	Green vegetable bug (PER12221 Chicory) Leafhoppers (PER12221 Chicory) Rutherglen bug (PER12221 Chicory) Mites (PER12221 Chicory) Thrips (PER12221 Chicory) Aphids (PER12221 Chicory)	

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Active Constituents	Chemical Group	Problem	Comments
Pirimicarb	1A	Cabbage aphid (Radish, Swede and Turnip)	Codex: JMPR re-evaluation scheduled EU: Candidate for substitution
		Green peach aphid (Radish, Swede and Turnip)	
Spinetoram	5	Helicoverpa	
		Lightbrown apple moth	
		Loopers	
		Potato moth	
		Caterpillars	
		Tomato potato psyllid (PER84757)	
		Vegetable leafminer (PER91155)	
		Cabbage white butterfly (Radish, Swede & Turnip)	
		Cabbage-centre grub (Radish, Swede & Turnip)	
		Cluster caterpillar (Radish, Swede & Turnip)	
		Western flower thrips (Radish, Swede & Turnip)	
		Spinosad	
Helicoverpa			
Loopers			
Fall armyworm (PER89870)			
Vegetable leafminer (PER90928)			
Cabbage white butterfly (Radish, Swede & Turnip)			
Cabbage-centre grub (Radish, Swede & Turnip)			
Cluster caterpillar (Radish, Swede & Turnip)			
Diamondback moth (Cabbage moth) (Radish, Swede & Turnip)			

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Active Constituents	Chemical Group	Problem	Comments
Spirotetramat	23	Brown thistle aphid (Chicory)	
		Currant lettuce aphid (Chicory)	
		Green peach aphid (Chicory)	
Sulfoxaflor	4C	Green peach aphid	USA: Pollinator concerns EU: Restricted to permanent glasshouses only
Trichlorfon	1B	Green vegetable bug	<a href="#">APVMA: nominated for review</a> Codex: No MRLs EU: No authorisations USA: No MRLs
		Rutherglen bug	
		Cabbage white butterfly	
		Cabbage moth	

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Active Constituents	Chemical Group	Problem	Comments
<b>DISEASES</b>			
Azoxystrobin	<b>11</b>	White blister (Horseradish & Radish) Downy mildew (Horseradish)	Canada: Review proposed
Chlorothalonil	<b>M5</b>	Alternaria spot Early blight Septoria leaf spot (Parsnips) Downy mildew (Radish) Grey leaf spot (Radish) Grey mould (Radish) White blister (Radish)	<a href="#">APVMA: nominated for review</a> Canada: Cancellation of uses proposed EU: No authorisation in place USA: Under review
Copper		White blister Bacterial blight (Parsnips) Leaf spots (Parsnips) Septoria leaf spot (Parsnips) Downy mildew (Radish, Swede & Turnip) Black rot (Turnips) Peppery leaf spot (Turnips) Ring spot (Turnips)	EU: Candidates for substitution
Difenoconazole	<b>3</b>	Powdery mildew (PER87973: Chicory)	<a href="#">APVMA: nominated for review</a> EU: Candidate for substitution USA: Under review
Difenoconazole + pydiflumetofen	<b>3 + 7</b>	Early blight Powdery mildew Cercospora leaf spot	<u>Difenoconazole:</u> <a href="#">APVMA: nominated for review</a> EU: Candidate for substitution USA: Under review <u>Pydiflumetofen:</u> EU: Authorisation pending



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Active Constituents	Chemical Group	Problem	Comments
Dimethomorph	40	Alternaria leaf spot (Radish)	EU: Under review
Dimethomorph + mancozeb	40 + M3	Downy mildew (PER14958: Chicory & Radish)	Mancozeb <a href="#">APVMA: nominated for review</a> Canada: Many uses cancelled Codex: To be reviewed 2024/25 EU: Authorisation not renewed
Iprodione	2	Grey mould (PER81589 Chicory)	Canada: Majority of food crop uses deleted Codex: Under review EU: No authorisation in place USA: Proposed deletion or restriction of uses
		Sclerotinia rot (PER81589 Chicory)	<a href="#">APVMA: nominated for review</a>
Mancozeb	M3	Anthracnose (PER14045/80538)	Canada: Many uses cancelled Codex: To be reviewed 2024/25 EU: Authorisation not renewed
		Downy mildew (PER14045: Chicory)	
		Septoria leaf spot (PER80538: Chicory)	
		Alternaria leaf spot (PER80538: Radish, Swede & Turnip)	
		Cercospora leaf spot (PER80538: Radish, Swede & Turnip)	
		White blister (PER80538: Radish, Swede & Turnip)	
Metalaxyl + Metalaxyl-M	4	Phytophthora soil fungus (Dieback) (Parsnips)	<u>Metalaxyl</u>
		Pythium (Parsnips)	EU: Candidate for substitution <u>Metalaxyl-M</u> EU: Restricted use approval
Oxathiapiprolin	49	Downy mildew	
Penthiopyrad	7	Alternaria leaf spot	
		Powdery mildew	
Phosphorous acid	33	Downy mildew (PER11951 Chicory)	
		Damping off (Parsnips)	
Potassium bicarbonate	M2	Powdery mildew (PER13695 Parsnip, radish, swede & turnip)	

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Active Constituents	Chemical Group	Problem	Comments
Propiconazole	3	Leaf spots (PER14479: Chicory)	<a href="#">APVMA: nominated for review</a> EU: No authorisations USA: Under review
		Rust (PER14479: Chicory)	
		Septoria leaf spot (PER14479: Chicory)	
		Cercospora leaf spot (Radish)	
Tebuconazole	3	Sclerotinia rot (Chicory & Radish)	<a href="#">APVMA: nominated for review</a> Canada: Under review EU: Candidate for substitution USA: Under review
Triadimenol	3	Powdery mildew (Radish, Swede & Turnip)	<a href="#">APVMA: nominated for review</a> Canada: No authorisation in place EU: No authorisation in place USA: Registration cancelled
Trifloxystrobin	11	Powdery mildew (PER14494: Chicory)	Canada: Review initiated

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Active Constituents	Chemical Group	Comment
<b>WEEDS</b>		
Chlorthal-dimethyl	<b>3</b>	EU: No authorisation in place
Clethodim	<b>1</b>	Codex: MRLs proposed for deletion(PER82459 Chicory)
Fluazifop-P (PER81244: Swede & Turnip; PER82556: Parsnip)	<b>1</b>	
Linuron (PER12357: Parsnips)	<b>5</b>	Canada: Cancellation of many uses EU: No authorisation in place
Metribuzin	<b>5</b>	Canada: Review initiated EU: Candidate for substitution
Pendimethalin (PER14858: Parsnips; PER14048: Radish)	<b>3</b>	EU: Candidate for substitution
Phenmedipham (PER81241: Chicory)	<b>5</b>	EU: Under review
Prometryn (PER12048: Parsnips)	<b>4</b>	EU: No authorisation
Propachlor (PER11441: Radish, Swede & Turnip)	<b>15</b>	EU: No authorisation
Propyzamide (Chicory)	<b>3</b>	EU: Restricted approval & candidate for substitution
Quizalofop-P	<b>1</b>	Canada: Under re-evaluation EU: Candidate for substitution
Sethoxydim	<b>1</b>	EU: No authorisation in place
Trifluralin (Chicory; PER14337: Swedes & Turnips; PER13696: Parsnips)	<b>3</b>	EU: No authorisation in place

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