



Chicory, Horseradish, Radish, Swede & Turnip Agrichemical Regulatory Risk Assessment

March 2024

Regulatory pressures on agrichemicals are increasing globally, with many being either restricted or withdrawn from use.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

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

Active Constituents	Chemical Group	Problem	Comments
INSECT AND OTHER PESTS			
Abamectin	6	Western flower thrips (Chicory)	EU: Use restricted to permanent greenhouses
		Vegetable leafminer (PER81876)	
Alpha-cypermethrin	3A	Cluster caterpillar (Radish, Swede & Turnip)	EU: No authorisations UK: 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/UK: No authorisation 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)	

Active Constituents	Chemical Group	Problem	Comments
Chlorpyrifos	1B	Earwig	APVMA: Proposed deletion of uses. Codex: All Codex MRLs deleted Canada: Cancellation of all uses. EU/UK: 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)	APVMA: Proposed deletion of uses EU/UK: No authorisation in place Codex: MRLs withdrawn.
		Cutworms (Parsnip)	
		Cabbage white butterfly (Turnip)	
		Diamondback moth (Cabbage moth) (Turnip)	

Active Constituents	Chemical Group	Problem	Comments
Dimethoate	1B	African black beetle (Swedes & Turnips)	Codex: MRL for turnip only EU/UK: 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	6	Cabbage white butterfly	EU: Candidate for substitution
		Cluster caterpillar	
		Diamondback moth (Cabbage moth)	
		Helicoverpa	
		Loopers	
Fipronil	2B	Diamondback moth (Cabbage moth) (Swedes & Turnips)	APVMA: Under review Codex: Re-evaluation underway EU/UK: No authorisation in place USA: Under review
Fluazaindolizine	N-UN	Root knot nematode	EU: Pending
Flubendiamide	28	Cabbage white butterfly	EU: Authorisation expiry August 2024
		Cluster caterpillar	
		Diamondback moth (Cabbage moth)	
		Helicoverpa	
		Potato moth	

Active Constituents	Chemical Group	Problem	Comments
Imidacloprid	4A	Currant lettuce aphid (Chicory)	APVMA: Under review Canada: Field uses cancelled or amended EU/UK: No authorisation USA: Re-registration with new risk mitigation measures
Indoxacarb	22	Helicoverpa (Chicory)	Canada: No authorisations EU: Not authorised UK: Not authorised
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)	APVMA: nominated for review Canada: Re-evaluation completed. Majority of uses removed EU/UK: 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)	

Active Constituents	Chemical Group	Problem	Comments
Pirimicarb	1A	Cabbage aphid (Radish, Swede and Turnip)	Codex: JMPR 2025 re-evaluation scheduled EU: Candidate for substitution
		Green peach aphid (Radish, Swede and Turnip)	
Pymetrozine	9B	Currant lettuce aphid (Chicory)	Canada: Restricted use to glasshouses only EU/UK: Not authorised
Spinetoram	5	Helicoverpa	EU: Approval expiry June 2024
		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	5	Lightbrown apple moth	
		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)	

Active Constituents	Chemical Group	Problem	Comments
Spirotetramat	23	Brown thistle aphid (Chicory)	EU: Approval expiry April 2024
		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	APVMA: nominated for review Codex: No MRLs EU/UK: No authorisations USA: No MRLs
		Rutherglen bug	
		Cabbage white butterfly	
		Cabbage moth	

Active Constituents	Chemical Group	Problem	Comments
DISEASES			
Azoxystrobin	11	White blister (Horseradish & Radish) Downy mildew (Horseradish)	Canada: Review proposed
Chlorothalonil	M5	Alternaria spot Early blight Septoria leaf spot (Parsnips) Downy mildew (Radish) Grey leaf spot (Radish) Grey mould (Radish) White blister (Radish)	APVMA: nominated for review Canada: Cancellation of uses proposed EU/UK: 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	3	Powdery mildew (PER87973: Chicory)	APVMA: nominated for review EU: Candidate for substitution USA: Under review
Difenoconazole + pydiflumetofen	3 + 7	Early blight Powdery mildew Cercospora leaf spot	Difenoconazole: APVMA: nominated for review EU: Candidate for substitution USA: Under review
Dimethomorph	40	Alternaria leaf spot (Radish)	EU: Under review

Active Constituents	Chemical Group	Problem	Comments
Dimethomorph + mancozeb	40 + M3	Downy mildew (PER14958: Chicory & Radish)	Mancozeb APVMA: nominated for review Canada: Many uses cancelled Codex: To be reviewed EU/UK: No authorisation
Iprodione	2	Grey mould (PER81589 Chicory)	Canada: Majority of food crop uses deleted Codex: Review scheduled EU:/UK No authorisation in place USA: Proposed deletion or restriction of uses
		Sclerotinia rot (PER81589 Chicory)	APVMA: nominated for review
Mancozeb	M3	Anthraco nose (PER14045/80538)	Canada: Many uses cancelled Codex: To be reviewed EU/UK: No authorisation
		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)	

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

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

Funding statement: MT20007 - Regulatory Support & Response Co-ordination. This *multi-industry* project has been funded by Hort Innovation, using *industry research and development levies* and contributions from the Australian Government. Hort Innovation is the grower-owned, not-for-profit research and development corporation for Australian horticulture.

Disclaimer:

Horticulture Innovation Australia Limited (Hort Innovation) makes no representations and expressly disclaims all warranties (to the extent permitted by law) about the accuracy, completeness, or currency of information in MT20007 – Regulatory Support & Response Co-ordination. Reliance on any information provided by Hort Innovation is entirely at your own risk. Hort Innovation is not responsible for, and will not be liable for, any loss, damage, claim, expense, cost (including legal costs) or other liability arising in any way, including from any Hort Innovation or other person's negligence or otherwise from your use or non-use of MT20007 – Regulatory Support & Response Co-ordination, or from reliance on information contained in the material or that Hort Innovation provides to you by any other means.

Legal notice

Copyright © Horticulture Innovation Australia Limited 2024

Copyright subsists in Ag-Chemical Update. Horticulture Innovation Australia Limited (Hort Innovation) owns the copyright, other than as permitted under the Copyright ACT 1968 (Cth). The Ag-Chemical Update (in part or as a whole) cannot be reproduced, published, communicated or adapted without the prior written consent of Hort Innovation. Any request or enquiry to use the Ag-Chemical Update should be addressed to:

Communications Manager

Hort Innovation

Level 7, 141 Walker Street

North Sydney NSW 2060

Australia

Email: communications@horticulture.com.au

Phone: 02 8295 2300