

# Root vegetables

## Agrichemical Regulatory Risk Assessment

May 2026

Regulatory pressures on agrichemicals are increasing globally, with many being either restricted or withdrawn from use.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 require 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 to ensure compliance, as MRL breach would adversely affect market access. This report provides details of CODEX MRLs as a means of highlighting risks for countries that rely on CODEX, however does not include every instance of where an importing country specific MRL is less than the relevant Australian MRL. The Australian Department of Agriculture Fisheries and Forestry provides information directly to grower bodies when MRLs change in other countries.

The effects of the above are greater regulatory pressure placed on the use of individual agrichemicals or chemical groups. Consequently, 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 Root vegetables in Australia, as well as assisting with any current initiatives aimed at identifying and addressing pest management deficiencies.

R0	Use no longer approved
R1	Short-term: Critical concern over retaining access < 1 year
R2	Medium-term: Maintaining access of significant concern <2-5 years
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R4	No current risk/concerns

### INSECTICIDES/MITICIDES/NEMATOCIDES - Insect and other pests

Blue text = new APVMA approved uses

Active Constituent	MoA Group	Pest	Risks and Comments
ABAMECTIN	6	Western flower thrips (Chicory)	Australia: <a href="#">APVMA nominated for reconsideration and spray drift assessment</a> . Permit PER96481 Expiry date: 31/07/2028 Canada: Re-evaluation finalised. Label amendments to mitigate risks to human health and environment (July, 2025)
ALPHA-CYPERMETHRIN	3A	Cluster caterpillar (Radish, Swede and Turnip) Cabbage white butterfly (Radish, Swede and Turnip) Helicoverpa (Radish, Swede and Turnip) Redlegged earth mite (Radish) Australian plague locust (Turnips) Diamondback moth (Turnips) Spur-throated locust (Turnips) Permit PER14457 for the control of Redlegged earth mite (Chicory).	Australia: <a href="#">APVMA nominated for reconsideration after 2029</a> . Permit PER14457 (Chicory) Expiry date: 31/03/2029 EU: Not approved
BACILLUS THURINGIENSIS	11A	Lepidopteran larvae	Australia: No current concerns.
Beauveria bassiana	--	Suppression of Western Flower Thrips (Frankliniella occidentalis) Onion Thrips (Thrips tabaci) Greenhouse Whitefly (Trialeurodes vaporarum) Silverleaf Whitefly (Bemisia argentifolii) Sweet Potato Whitefly (Bemisia tabaci)	Australia: No current concerns.
CARBARYL	1A	Spur-throated locust (Swede & Turnip) 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)	Australia: Codex - being considered for periodic review EU: Not approved Canada: In re-evaluation
CHLORPYRIFOS	1B	--	Australia: <a href="#">The chemical review was completed in September 2024</a> . Most uses in horticultural crops were removed. After 30 September 2025, products with previously approved labels must not be supplied. The only remaining approved use is in Brassica crops as specified on current labels. EU: Not approved Canada: Cancelled

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CYANTRANILIPROLE	28	Leafminers	Australia: No current concerns. Permit PER93849 Expiry date: 31/12/2026
CYPERMETHRIN	3A	Helicoverpa spp. Cabbage white butterfly Cabbage moth Cluster caterpillar (Turnips)	Australia: No current concerns. EU: Approved, candidate for substitution
CYROMAZINE	17	Permit PER 81867 for the control of Leaf miners	Australia: No current concerns. Permit PER81867 Expiry date: 30/09/2026 EU: Not approved
DIAZINON	1B	--	Australia: <a href="#">APVMA made a Final Decision on 2024</a> . After 10 September 2025, crop uses are no longer approved. . Codex: All MRLs deleted
DIMETHOATE	1B	African black beetle (Swedes & Turnips) Aphids (Turnip) Green vegetable bug (Turnip) Jassids (Turnip) Leafhoppers (Turnip) Mites (Turnip) Redlegged earth mite (Turnip) Spur-throated locust (Turnip) Thrips (Turnip)	Australia: APVMA: Chemical Review <a href="#">prioritised to be commenced by 2029</a> .
EMAMECTIN	6	Cabbage white butterfly Cluster caterpillar Diamondback moth (Cabbage moth) Helicoverpa Loopers	Australia: <a href="#">Nominated for targeted spray drift reconsideration</a> EU: Approved, candidate for substitution
EMULSIFIABLE BOTANICAL OILS	--	Greenhouse Whitefly	Australia: No current concerns.
FIPRONIL	2B	Diamondback moth (Swedes & Turnips)	Australia: APVMA: Proposed Regulatory decision was expected by April 2026. APVMA is now advising the by end of 2026 at the earliest. Permit PER89402 Expiry date: 30/04/2027 Codex MRL: 0.002 mg/Kg EU: Not approved
FLUBENDIAMIDE	28	Cabbage white butterfly Cluster caterpillar Diamondback moth (Cabbage moth) Helicoverpa Potato moth	Australia: No current concerns. EU: Not approved

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IMIDACLOPRID	4A	Currant lettuce aphid (Chicory)	Australia: APVMA: Neonicotinoids chemical review has been delayed. The proposed regulatory decision unlikely before 2027. Codex MRL: 0.5 mg/Kg EU: Not approved Canada: Very few uses allowed in greenhouses and seed treatment.
IRON EDTA COMPLEX	--	Snails	Australia: No current concerns
LAMBDA-CYHALOTHRIN	3A	Diamondback moth (Radish) Vegetable Loopers (Radish)	Australia: No current concerns. Permit PER12716 Expiry date: 31/05/2028 EU: Approved, candidate for substitution
METALDEHYDE	--	Snails and slugs	Australia: No current concerns Canada: In re-evaluation
METHOMYL	1A	Permit PER82428 for the control of: Helicoverpa spp. Cucumber moth Cluster caterpillar Loopers Webworm Rutherglen bug Thrips including Western Flower Thrip	Australia: APVMA reconsideration. Was to start 2026. APVMA to publish a new Chemical Review priority list by mid 2026. Permit PER82428 Expiry date: 31/01/2029 EU: Not approved Canada: In re-evaluation
PARAFFINIC OIL	UNM	Aphids, Mites, Thrips, Leafhopper	Australia: No current concerns.
PETROLEUM OIL	UN	Aphids Mites Thrips Leafhopper	Australia: No current concerns. EU: Not approved
PIRIMICARB	1A	Cabbage aphid (Radish, Swede and Turnip) Green peach aphid (Radish, Swede and Turnip)	Australia: No current concerns. Codex MRL: 0.05 mg/Kg EU: Approved, candidate for substitution Canada: Cancelled
PYMETROZINE	9B	Currant lettuce aphid (Chicory)	Australia: <a href="#">APVMA nominated for reconsideration and spray drift assessment.</a> EU: Not approved Canada: Cancelled
SPINETORAM	5	Leaf miner Caterpillars Permit PER94451 for the control of Leaf miners	Australia: No current concerns. Permit PER94451 Expiry date: 31/07/2027 EU: Not approved Canada: In re-evaluation
SPINOSAD	5	Lightbrown apple moth Loopers Heliothis Permit PER89870 for the control of Fall Armyworm Permit PER94331 for the control of Dipteran leaf miners	Australia: No current concerns. Permit PER89870 Expiry date: 01/10/2030 Permit PER96806 Expiry date: 30/05/2031 Canada: In re-evaluation

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<b>SPIROTETRAMAT</b>	23	Brown thistle aphid (Chicory) Currant lettuce aphid (Chicory) Green peach aphid (Chicory) Green peach aphid	Australia: No current concerns. EU: Not approved Canada: In re-evaluation
<b>SPODOPTERA FRUGIPERDA NPV</b>	--	Fall Armyworm	Australia: No current concerns Permit PER90820 Expiry date: 31/03/2027 Permit PER91477 Expiry date: 31/03/2027
<b>SULFOXAFLOX</b>	4C	Green peach aphid	Australia: No current concerns. Codex MRL: 0.03 mg/Kg
<b>TRICHLORFON</b>	1B	Green vegetable bug Rutherglen bug Cabbage white butterfly Cabbage moth	Australia: <a href="#">APVMA nominated for reconsideration after 2029.</a> EU: Not approved Canada: Cancelled

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### FUNGICIDES – Disease Control

Blue text = new APVMA approved uses

Active Constituent	MoA Group	Pest	Risks and Comments
AZOXYSTROBIN	11	White blister (Horseradish & Radish) Downy mildew (Horseradish)	Australia: No current concerns. Codex MRL: 1 mg/Kg UK: Withdrawn (2029). Canada: In re-evaluation
BOSCALID	7	Sclerotinia rot	Australia: No current concerns. Codex MRL: 2 mg/Kg Canada: In re-evaluation
CHLOROTHALONIL	M5	Grey mould (Radish) Permit PER82895 for the control of: Early Blight and Septoria Leaf Spot (Parsnips) Alternaria, Downy Mildew and Grey Leaf Spot (Radish)	Australia: APVMA reconsideration. <a href="#">Prioritised to be commenced by 2028.</a> Permit PER82895 (Parsnips, radish) Expiry date: 31/05/2030 Codex MRL: 0.3 mg/Kg EU: Not approved Canada: In re-evaluation USA: Under Registration Review (scheduled)
COPPER	M1	White blister Leaf spot 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)	Australia: No current concerns.
DIFENOCONAZOLE	3	Powdery Mildew (Chicory)	Australia: <a href="#">APVMA nominated for reconsideration after 2029.</a> Permit PER87973 (Chicory) Expiry date: 30/06/2030 EU: Approved, candidate for substitution Canada: In re-evaluation
DIMETHOMORPH	40	PER14958 (Chicory, radish) for the control of Downy mildew, and Alternaria Leaf Spot (Chicory, radish)	Australia: No current concerns. Permit PER14958 (Chicory, radish) Expiry date: 31/10/2027 EU: Not approved Canada: In re-evaluation
IODINE	M	Post harvest sanitizer	Australia: No current concerns. Canada: Cancelled

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<b>IPIRODIONE</b>	2	Permit PER81589 for the control of Sclerotinia Rot and Grey mould (Chicory)	Australia: No current concerns. Permit PER81589 (Chicory) Expiry date: 31/03/2031 EU: Not approved USA: Under Registration Review (scheduled)
<b>MANCOZEB</b>	M3	Permit PER80538 for the control of: Cercospora Leaf Spot, Alternaria and White Blister (radish, swede and turnip) Anthracnose and Septoria (Chicory) Permit PER14958 for the control of Downy mildew, and Alternaria Leaf Spot (Chicory, radish).	Australia: APVMA reconsideration. <a href="#">Prioritised to be commenced by 2027.</a> Permit PER80538 (Radish, swede, turnip, chicory) Expiry date: 31/05/2030 Permit PER14958 (Chicory, radish) Expiry date: 31/10/2027 EU: Not approved USA: Under Registration Review (scheduled)
<b>MANCOZEB   METALAXYL</b>	M3 + 4	Permit PER14045 for the control of: Anthracnose (Chicory) Pythium spp. (Parsnips) Phytophthora spp. (Parsnips)	<b>MANCOZEB</b> Australia: APVMA reconsideration. Prioritised to be commenced by 2027. Permit PER80538 (Radish, swede, turnip, chicory) Expiry date: 31/05/2030 Permit PER14958 (Chicory, radish) Expiry date: 31/10/2027 EU: Not approved USA: Under Registration Review (scheduled)  <b>METALAXYL</b> Australia: No current concerns. EU: Approved, candidate for substitution Canada: In re-evaluation
<b>METALAXYL-M</b>	4	Downy mildew (Radish - seed treatment) Pythium Spp. and Phytophthora Spp. (Parsnips)	Australia: No current concerns. Permit PER14695 (Parsnips) Expiry date: 31/03/2029
<b>PENTHIOPYRAD</b>	7	Alternaria leaf spot Powdery mildew	Australia: No current concerns. EU: Not approved
<b>PHOSPHOROUS (PHOSPHONIC) ACID</b>	P07 (33)	Permit PER14184 for the control of Damping off (Parsnips) Permit PER11951 for the control of Downy mildew (Chicory)	Australia: No current concerns. Permit PER14184 (Parsnips) Expiry date: 31/03/2030 Permit PER11951 Expiry date: 28/02/2030
<b>POTASSIUM BICARBONATE</b>	M2	Permit PER13695 for the control of Powdery mildew (Parsnip, Radish, Swede, Turnip)	Australia: No current concerns. Permit PER13695 (Parsnip, Radish, Swede, Turnip) Expiry date: 30/06/2030 Canada: In re-evaluation
<b>PROPICONAZOLE</b>	3	Permit PER14479 for the control of: Leaf Spot (Chicory) Rust (Chicory) Septoria leaf sp (Chicory)	Australia: <a href="#">APVMA nominated for reconsideration and spray drift assessment.</a> Permit PER14479 (Chicory) Expiry date: 31/08/2029 EU: Not approved Canada: In re-evaluation USA: Under Registration Review (scheduled)

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<b>PYDIFLUMETOFEN   DIFENOCONAZOLE</b>	7 + 3	Early blight Powdery mildew Cercospora leaf spot	<p><b>PYDIFLUMETOFEN</b> Australia: No current concerns. Codex MRL: 0.3 mg/Kg EU: Pending Canada: In re-evaluation</p> <p><b>DIFENOCONAZOLE</b> Australia: APVMA nominated for reconsideration after 2029. Permit PER87973 (Chicory) Expiry date: 30/06/2030 EU: Approved, candidate for substitution Canada: In re-evaluation</p>
<b>TEBUCONAZOLE</b>	3	Sclerotinia rot (Chicory & Radish)	<p>Australia: APVMA: Removed from nomination list - maintain watching brief EU: Approved, candidate for substitution Canada: In re-evaluation USA: Under Registration Review (scheduled)</p>
<b>TRIADIMENOL</b>	3	Powdery Mildew (Parsnips, radish, swede, turnip)	<p>Australia: <a href="#">APVMA nominated for reconsideration after 2029.</a> EU: Not approved Canada: Cancelled</p>
<b>TRIFLOXYSTROBIN</b>	11	Permit PER14494 for the control of Powdery mildew (Chicory)	<p>Australia: No current concerns. Permit PER14494 (Chicory) Expiry date: 31/08/2027 Canada: In re-evaluation</p>

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### HERBICIDES – Weed Control

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Active Constituent	MoA Group	Risks and Comments
CLETHODIM	1	Australia: No current concerns. Permit PER82459 (Radish, parsnips, Chicory) Expiry date: 30/09/2026 Permit PER13788 (Parsnip) Expiry date: 31/01/2028
DIQUAT	22	Australia: APVMA: <a href="#">Currently under review</a> . Publication of the final regulatory decision is expected in Mid 2026. EU: Not approved
FLUAZIFOP-P PRESENT AS THE BUTYL ESTER	1	Australia: <a href="#">Nominated for targeted spray drift reconsideration</a> Permit PER82556 Expiry date: 30/11/2027 Permit PER81244 (Chicory, swede, turnip) Expiry date: 30/04/2027 Canada: Cancelled
LINURON	5	Australia: No current concerns. Permit PER95892 Expiry date: 31/01/2029 EU: Not approved
PARAQUAT	22	Australia: APVMA: <a href="#">Currently under review</a> . Publication of the final regulatory decision is expected in Mid 2026. Candidate chemical recommended to be listed to Rotterdam Convention. Codex MRL: 0.05 mg/Kg EU: Not approved Canada: Cancelled USA: Restricted use
PENDIMETHALIN	3	Australia: No current concerns. EU: Approved, candidate for substitution Canada: In re-evaluation USA: Under Registration Review (scheduled)
PHENMEDIPHAM	5	Australia: No current concerns. Permit PER81241 (Chicory) Expiry date: 31/03/2028
PROMETRYN	5	Australia: No current concerns. Permit PER12048 (Parsnip) Expiry date: 30/04/2030 EU: Not approved
PROPACHLOR	15	Australia: No current concerns. Permit PER11441 Expiry date: 31/07/2029 EU: Not approved
QUIZALOFOP-P-ETHYL	1	Australia: No current concerns.

**Root vegetables - Agrichemical Regulatory Risk  
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<b>SETHOXYDIM</b>	1	Australia: No current concerns. EU: Not approved Canada: Phase-Out
<b>TRIFLURALIN</b>	3	Australia: No current concerns. Permit PER13788 (Parsnip) Expiry date: 31/01/2028 EU: Not approved Canada: In re-evaluation USA: Under Registration Review (scheduled)

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**FUMIGANTS**

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Active Constituent	Use	Risks and Comments
<b>1,3-DICHLOROPROPENE</b>	Control of soil borne diseases, plant parasitic Nematodes, Symphylans and Wireworms	Australia: No current concerns. EU: Pending Canada: Cancelled
<b>CHLOROPICRIN</b>	Control of soil borne diseases, plant parasitic Nematodes, Symphylans and Wireworms	Australia: No current concerns. EU: Not approved USA: Restricted use
<b>CHLOROPICRIN + 1,3-DICHLOROPROPENE</b>	Control of soil borne diseases, plant parasitic Nematodes, Symphylans and Wireworms	<b>CHLOROPICRIN</b> Australia: No current concerns. EU: Not approved USA: Restricted use <b>1,3-DICHLOROPROPENE</b> Australia: No current concerns. EU: Pending Canada: Cancelled
<b>ETHANEDINITRILE</b>	Soil borne pathogens, nematodes and weeds	Australia: No current concerns.
<b>METHAM PRESENT AS SODIUM SALT</b>	Germinating weeds and soil-borne fungus diseases	Australia: No current concerns.
<b>METHYL BROMIDE</b>	Disinfestation of fruit and vegetables	Australia: Permit PER96144 Expiry date: 31/01/2031 PER96144 for the control of Disinfestation treatment of commodities EU: Not approved Canada: Remaining pre-plant soil fumigation uses were cancelled (June 2025) USA: Restricted use

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**Funding statement:** MT24008 –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.

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