

Root vegetables Agrichemical Regulatory Risk Assessment

November 2025

Regulatory pressures on agrichemicals are increasing globally, with many being either restricted or withdrawn from use.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

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** (horseradish, radish, parsnip, swede and turnip) 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
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R4	No current risk/concerns

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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: APVMA nominated for reconsideration and spray drift assessment . 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) <i>Helicoverpa</i> (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: APVMA nominated for reconsideration after 2029 . Permit PER14457 (Chicory) Expiry date: 31/03/2029 Codex MRL: 0.01 mg/Kg EU: Not approved
<i>Bacillus thuringiensis</i>	11A	Armyworm Cotton bollworm Native budworm Cabbage moth Cabbage white butterfly Loopers Lightbrown apple moth Vine moth Lepidopteran larvae	Australia: No current concerns. USA: Under Registration Review (scheduled)

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<i>Beauveria bassiana</i>	UNF	Suppression of: Western Flower Thrips Onion Thrips Greenhouse Whitefly Silverleaf Whitefly Sweet Potato Whitefly	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: No current concerns. Codex MRL: 1 mg/Kg (Turnip) EU: Not approved Canada: In re-evaluation USA: Under Registration Review (scheduled)
CHLORPYRIFOS	1B	--	Australia: The chemical review was completed in September 2024. 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 USA: Agricultural uses cancelled. Very few registrations as Restricted Use Pesticide.
CYPERMETHRIN	3A	Helicoverpa spp. Cabbage white butterfly Cabbage moth Cluster caterpillar (Turnips)	Australia: No current concerns. Codex MRL: 0.01 mg/Kg EU: Approved, candidate for substitution.
CYROMAZINE	17	Permit PER81867 for the control of Leaf miners	Australia: No current concerns. Permit PER81867 Expiry date: 30/09/2026 EU: Not approved

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DIAZINON	1B	--	Australia: APVMA made a Final Decision on 2024 . After 10 September 2025, crop uses are no longer approved. Codex: All MRLs deleted EU: Not approved Canada: Cancelled USA: Under Registration Review (scheduled)
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 reconsideration. Prioritised to be commenced by 2029 . EU: Not approved Canada: In re-evaluation USA: Under Registration Review (scheduled)
EMAMECTIN	6	Cabbage white butterfly Cluster caterpillar Diamondback moth (Cabbage moth) Helicoverpa Loopers	Australia: APVMA Nominated for targeted spray drift reconsideration EU: Approved, candidate for substitution. UK: Withdrawn (2024).
EMULSIFIABLE BOTANICAL OILS	--	Greenhouse Whitefly	Australia: No current concerns.
FIPRONIL	2B	Diamondback moth (Swedes & Turnips)	Australia: APVMA: Currently under review . Proposed Regulatory decision expected by April 2026. EU: Not approved USA: Under Registration Review (scheduled)
FLUBENDIAMIDE	28	Cabbage white butterfly Cluster caterpillar Diamondback moth (Cabbage moth) <i>Helicoverpa</i> Potato moth	Australia: No current concerns. EU: Not approved UK: Withdrawn (2024).

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IMIDACLOPRID	4A	Currant lettuce aphid (Chicory)	Australia: APVMA: Currently under review . Proposed regulatory decisions expected between December2025 to October2026. Codex MRL: 0.5 mg/Kg EU: Not approved Canada: Very few uses allowed in greenhouses and seed treatment. USA: Under Registration Review (scheduled)
LAMBDA-CYHALOTHRIN	3A	Diamondback moth (Radish) Vegetable Loopers (Radish)	Australia: No current concerns. Permit PER11949 Expiry date: 30/11/2029 Codex MRL: 0.01 mg/Kg EU: Approved, candidate for substitution.
METHOMYL	1A	Permit PER82428 for the control of: Helicoverpa spp. Cucumber moth Cluster caterpillar Loopers Webworm Rutherglen bug Thrips including WFT	Australia: APVMA reconsideration. Prioritised to be commenced by 2026 . Permit PER82428 Expiry date: 31/01/2029 EU: Not approved Canada: In re-evaluation USA: Under Registration Review (scheduled)
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: APVMA nominated for reconsideration and spray drift assessment . EU: Not approved Canada: Cancelled

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SPINETORAM	5	Helicoverpa Cluster caterpillar Western flower thrips Permit PER94451 for the control of Leaf miners	Australia: No current concerns. Permit PER94451 Expiry date: 31/07/2027 EU: Not approved UK: Withdrawn (2024). 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 PER94331 Expiry date: 30/04/2026 Canada: In re-evaluation
SPIROTETRAMAT	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
SPODOPTERA FRUGIPERDA NPV	--	PER90820 for the control of Fall Armyworm	Australia: No current concerns. Permit PER90820 Expiry date: 31/03/2027
SULFOXAFLOX	4C	Green peach aphid	Australia: No current concerns. Codex MRL: 0.03 mg/Kg
TRICHLORFON	1B	Green vegetable bug Rutherglen bug Cabbage white butterfly Cabbage moth	Australia: APVMA nominated for reconsideration after 2029. EU: Not approved Canada: Cancelled USA: Under Registration Review (scheduled)

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FUNGICIDES – Disease Control

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 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. Prioritised to be commenced by 2028. Permit PER82895 (Parsnips, radish) Expiry date: 31/05/2030 Codex MRL: 0.3 mg/Kg (1 mg/Kg (horseradish)) 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	PER87973 for the control of Powdery Mildew (Chicory)	Australia: APVMA nominated for reconsideration after 2029. Permit PER87973 Expiry date: 30/06/2030 Codex MRL: 0.7 mg/Kg (Radish) EU: Approved, candidate for substitution. Canada: In re-evaluation

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DIMETHOMORPH	40	PER14958 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
IPRODIONE	2	Permit PER81589 for the control of Sclerotinia Rot and Grey mould (Chicory)	Australia: No current concerns. Permit PER81589 (Chicory) Expiry date: 30/06/2026 EU: Not approved USA: Under Registration Review (scheduled)
MANCOZEB	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. Prioritised to be commenced by 2027. Permit PER14958 (Chicory, radish) Expiry date: 31/10/2027 + Permit PER80538 (Radish, swede, turnip, chicory) Expiry date: 31/05/2030 EU: Not approved UK: Withdrawn (2024). USA: Under Registration Review (scheduled)
MANCOZEB METALAXYL	M3 + 4	Permit PER14045 for the control of: Anthracnose (Chicory) Pythium spp. (Parsnips) Phytophthora spp. (Parsnips)	MANCOZEB Australia: APVMA reconsideration. Prioritised to be commenced by 2027. METALAXYL Australia: No current concerns. EU: Approved, candidate for substitution. Canada: In re-evaluation
METALAXYL-M	4	Downy mildew (Radish - seed treatment) Pythium Spp. and Phytophthora Spp. (Parsnips)	Australia: No current concerns. Permit PER14695 (Parsnips) Expiry date: 31/03/2029

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PENTHIOPYRAD	7	Alternaria leaf spot Powdery mildew	Australia: No current concerns. Codex MRL: 3 mg/Kg (Radish)
PHOSPHOROUS (PHOSPHONIC) ACID	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
POTASSIUM BICARBONATE	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
PROPICONAZOLE	3	Permit PER14479 for the control of: Leaf Spot (Chicory) Rust (Chicory) Septoria leaf (Chicory)	Australia: APVMA nominated for reconsideration and spray drift assessment. Permit PER14479 (Chicory) Expiry date: 31/08/2029 EU: Not approved Canada: In re-evaluation USA: Under Registration Review (scheduled)
PYDIFLUMETOFEN DIFENOCONAZOLE	7 + 3	Early blight Powdery mildew Cercospora leaf spot	PYDIFLUMETOFEN Australia: No current concerns. Codex MRL: 0.3 mg/Kg EU: Pending Canada: In re-evaluation DIFENOCONAZOLE Australia: APVMA nominated for reconsideration after 2029. Codex MRL: 0.7 mg/Kg (Radish) EU: Approved, candidate for substitution. Canada: In re-evaluation
TEBUCONAZOLE	3	Sclerotinia rot (Chicory & Radish)	Australia: APVMA: Removed from nomination list - maintain watching brief EU: Approved, candidate for substitution. Canada: In re-evaluation USA: Under Registration Review (scheduled)

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TRIADIMENOL	3	Powdery Mildew (Parsnips, radish, swede, turnip)	Australia: APVMA nominated for reconsideration after 2029. EU: Not approved Canada: Cancelled
TRIFLOXYSTROBIN	11	Permit PER14494 for the control of powdery mildew (Chicory)	Australia: No current concerns. Permit PER14494 (Chicory) Expiry date: 31/08/2027 Codex MRL: 0.08 mg/Kg (Radish) Canada: In re-evaluation

HERBICIDES – Weed Control

Active Constituent	MoA Group	Risks and Comments
CHLORTHAL DIMETHYL	3	Australia: APVMA cancelled all products containing chlorthal dimethyl in October 2024. The use of chlorthal dimethyl as an agricultural chemical product is now illegal. EU: Not approved Canada: Cancelled USA: US EPA cancelled all products (Oct. 2024)
CLETHODIM	1	Australia: No current concerns. Permit PER82459 (Radish, parsnips, Chicory) Expiry date: 30/09/2026
DIQUAT	22	Australia: APVMA: Currently under review. Publication of the final regulatory decision is now expected in Mid 2026. EU: Not approved USA: No agricultural uses allowed. Aquatic herbicide.
FLUAZIFOP-P PRESENT AS THE BUTYL ESTER	1	Australia: APVMA Nominated for targeted spray drift reconsideration Permit PER81244 (Chicory, swede, turnip) Expiry date: 30/04/2027 Canada: Cancelled
LINURON	5	Australia: No current concerns. EU: Not approved

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Active Constituent	MoA Group	Risks and Comments
PARAQUAT	22	Australia: APVMA: Currently under review . Publication of the final regulatory decision is now 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.
SETHOXYDIM	1	Australia: No current concerns. EU: Not approved Canada: Phase-Out
TRIFLURALIN	3	Australia: No current concerns. EU: Not approved Canada: In re-evaluation USA: Under Registration Review (scheduled)

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FUMIGANTS – Mixed Function

Active Constituent	Use	Risks and Comments
CHLOROPICRIN + 1,3-DICHLOROPROPENE	Control of soil borne diseases, plant parasitic Nematodes, Symphylans and Wireworms	CHLOROPICRIN Australia: No current concerns. EU: Not approved USA: Restricted use 1,3-DICHLOROPROPENE Australia: No current concerns. EU: Pending Canada: Cancelled
DAZOMET	Control of bacterial spot (<i>Xanthomonas</i> spp.) (suppression only). Soil insects and nematodes	Australia: No current concerns. USA: Under Registration Review (scheduled)
ETHANEDINITRILE	Soil borne pathogens, nematodes and weeds	Australia: No current concerns.
METHAM PRESENT AS SODIUM SALT	Germinating weeds and soil-borne fungus diseases	Australia: No current concerns.

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