

## Root vegetables (Chicory, Horseradish, Radish, Swede & Turnip) Agrichemical Regulatory Risk Assessment

May 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Regulatory pressures on agrichemicals are increasing globally, with many being either restricted or withdrawn from use.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 (Chicory, Horseradish, Radish, Swede & Turnip)** in Australia as well as assisting with any current initiatives aimed at identifying and addressing pest management deficiencies.

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<b>R1</b>	<b>Short-term risk: Critical concern over retaining access &lt; 1 year</b>
<b>R2</b>	<b>Medium-term risk: Maintaining access of significant concern &lt;2-5 years</b>
<b>R3</b>	<b>Long-term risk: Potential issues associated with use – Monitoring required &lt; 5 years</b>
<b>R4</b>	<b>No current risk / concerns</b>

Blue text = new APVMA approved uses

### INSECTICIDES/MITICIDES/NEMATOCIDES - Insect and other Pests Control

Active constituent	MoA Group	Pest	Risks and Comments
ABAMECTIN	6	Western flower thrips (Chicory)	Australia: <a href="#">APVMA nominated for reconsideration</a> and spray drift assessment EU: Approved Canada: In review
ALPHA-CYPERMETHRIN	3A	Cluster caterpillar (Radish, Swede, Turnip) Cabbage white butterfly (Radish, Swede, Turnip) Helicoverpa (Radish, Swede, 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 Canada: No current review
<i>Bacillus thuringiensis</i>	11A	Lepidopteran larvae	Australia: No current concerns. USA: Review upcoming
CARBARYL	1A	Swede & Turnip: Spur-throated locust, Green vegetable bug, Armyworms, Cabbage white butterfly, Cutworms, Diamondback moth, Leaf eating ladybirds Potato moth, Pumpkin beetle, Vegetable weevil	Australia: No current concerns. Codex MRL: 1 mg/Kg (Turnip) EU: Not approved Canada: In review USA: Review upcoming

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Active constituent	MoA Group	Pest	Risks and Comments
CHLORPYRIFOS	1B	Radish and turnip: Cutworms, earwigs, false wireworms, field crickets, harvester ants, mole crickets (seed dressing), vegetable weevil, wingless grasshopper  Swede, turnip: Blue oat mite, redlegged earth mite, vegetable weevil  Permit PER14583 for the control of African black beetle, false wireworms and wireworms (Swede, turnip)	Australia: The APVMA issued a <a href="#">Final Decision</a> in September 2024. All root crop uses were cancelled. Products with previously approved labels must not be possessed or used after September 30, 2025. Permit PER14583 (Swede, turnip) Expiry date: 31/07/2025 Codex: All MRLs deleted EU: Not approved Canada: All uses cancelled 2023 USA: Upcoming review
CYPERMETHRIN	3A	Turnip: Helicoverpa spp., Cabbage white butterfly, Cabbage moth, Cluster caterpillar	Australia: No current concerns. Codex MRL: 0.01 mg/Kg EU: Approved, candidate for substitution. UK: Approved
CYROMAZINE	17	Permit PER 81867 for the control of Leaf miners	Australia: Reviewed in 2014. No current concerns. Permit PER81867 Expiry date: 30/09/2026 EU: Not approved
DIAZINON	1B	Turnip: Cabbage white butterfly (Turnip) Diamondback moth (Cabbage moth) Parsnip: Caterpillars, Cutworms	Australia: APVMA made a <a href="#">Final Decision on 10 September 2024</a> . Agricultural uses were not supported during the review. Approved use on all vegetables ceases 10 September 2025. Codex: All MRLs deleted EU: Not approved Canada: No current review USA: Review upcoming

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Active constituent	MoA Group	Pest	Risks and Comments
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: <a href="#">APVMA reconsideration. Prioritised to be commenced by 2029.</a> EU: Not approved Canada: In review USA: Review upcoming
EMAMECTIN	6	Cabbage white butterfly Cluster caterpillar Diamondback moth (Cabbage moth) Helicoverpa Loopers	Australia: <a href="#">APVMA nominated for reconsideration</a> and for targeted spray drift reconsideration EU: Approved, candidate for substitution. UK: Withdrawn. Expiry date: 30/11/2024 Canada: No current review
EMULSIFIABLE BOTANICAL OILS	--	Greenhouse Whitefly	Australia: No current concerns.
FIPRONIL	2B	Diamondback moth (Swedes & Turnips)	Australia: APVMA: <a href="#">APVMA: Currently under review. Proposed Regulatory decision expected by April 2026.</a> EU: Not approved USA: Review upcoming
FLUBENDIAMIDE	28	Cabbage white butterfly Cluster caterpillar Diamondback moth (Cabbage moth) Helicoverpa Potato moth	Australia: No current concerns. EU: Not approved UK: Withdrawn. Expiry date: 30/11/2024 Canada: No current review USA: No registrations
IMIDACLOPRID	4A	Currant lettuce aphid (Chicory)	Australia: <a href="#">APVMA: Currently under review. Proposed regulatory decisions expected between Dec. 2025 to Oct. 2026.</a> Codex MRL: 0.5 mg/Kg EU: Not approved Canada: Field uses cancelled or amended USA: Re-registration with risk mitigation measures. Review upcoming

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Active constituent	MoA Group	Pest	Risks and Comments
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. UK: Approved Canada: No current review
METHOMYL	1A	Permit PER82428 for the control of Helicoverpa spp., Cucumber moth, Cluster caterpillar, Loopers, Webworm, Rutherglen bug and Thrips including WFT.	Australia: <a href="#">APVMA reconsideration. Prioritised to be commenced by 2026.</a> Permit PER82428 Expiry date: 31/01/2029 EU: Not approved Canada: In review USA: Review upcoming
PARAFFINIC OIL	--	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. UK: Approved Canada: No current review USA: No registrations
PYMETROZINE	9B	Currant lettuce aphid (Chicory)	Australia: <a href="#">APVMA nominated for reconsideration</a> and spray drift assessment EU: Not approved
SPINETORAM	5	Helicoverpa Cluster caterpillar Western flower thrips  Permit PER84757 for the control of Tomato Potato Psyllid  Permit PER94451 for the control of Leaf miners	Australia: No current concerns. Permit PER84757 Expiry date: 31/08/2025 Permit PER94451 Expiry date: 31/07/2027 EU: Not approved UK: Withdrawn. Expiry date: 30/09/2024 Canada: In review

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Active constituent	MoA Group	Pest	Risks and Comments
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: Reviewed in 2014. No current concerns. Permit PER89870 Expiry date: 31/07/2025 Permit PER94331 Expiry date: 30/04/2026 EU: Approved UK: Approved Canada: In review
SPIROTETRAMAT	23	Brown thistle aphid (Chicory) Currant lettuce aphid (Chicory) Green peach aphid (Chicory)	Australia: No current concerns. EU: Not approved UK: Approved Canada: In review
SPODOPTERA FRUGIPERDA NPV	--	Permits PER90820 and PER91477 for the control of Fall Armyworm	Australia: No current concerns. Permit PER90820 Expiry date: 31/03/2027 Permit PER91477 Expiry date: 31/03/2027
SULFOXAFLOX	4C	Green peach aphid	Australia: No current concerns. Codex MRL: 0.03 mg/Kg EU: Approved UK: Approved Canada: No current review
TRICHLORFON	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: No current review USA: Review upcoming

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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 EU: Approved UK: Approved Canada: In review
BOSCALID	7	Sclerotinia rot	Australia: No current concerns. Codex MRL: 2 mg/Kg EU: Approved UK: Approved Canada: In review
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: <a href="#">APVMA reconsideration. 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 review USA: Review upcoming
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. EU: Approved, candidate for substitution.
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. UK: Approved Canada: In review

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Active constituent	MoA Group	Pest	Risks and Comments
DIMETHOMORPH	40	Permit PER14958 for the control of Downy mildew, and Alternaria Leaf Spot (Chicory and radish)	Australia: No current concerns. Permit PER14958 (Chicory, radish) Expiry date: 31/10/2027 EU: Not approved UK: Approved
IODINE	M	Post harvest sanitizer	Australia: No current concerns.
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 Canada: Most of the food crop uses deleted USA: Review upcoming <b>Codex: No MRLs</b>
MANCOZEB	M3	Permit PER80538 for the control of: Cercospora Leaf Spot, Alternaria and White Blister (radish, swede and turnip) Anthracnose and Septoria (Chicory)  Pemit PER14958 for the control of Downy mildew, and Alternaria Leaf Spot (Chicory, radish).	Australia: <a href="#">APVMA reconsideration. 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 UK: Withdrawn. Expiry date: 31/05/2024 Canada: Most of uses cancelled USA: Review upcoming
MANCOZEB   METALAXYL	M3 + 4	Permit PER14045 for the control of: Anthracnose (Chicory) Pythium spp. (Parsnips) Phytophthora spp. (Parsnips)	Permit PER14045 (Chicory, Parsnips) Expiry date: 31/03/2027 MANCOZEB Australia: <a href="#">APVMA reconsideration. Prioritised to be commenced by 2027.</a> METALAXYL Australia: No current concerns. EU: Approved, candidate for substitution. UK: Approved Canada: In review
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 EU: Approved UK: Approved



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Active constituent	MoA Group	Pest	Risks and Comments
PENTHIOPYRAD	7	Alternaria leaf spot Powdery mildew	Australia: No current concerns. Codex MRL: 3 mg/Kg (Radish) EU: Approved UK: Approved Canada: No current review
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
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 review
PROPICONAZOLE	3	Permit PER14479 for the control of: Leaf Spot (Chicory) Rust (Chicory) Septoria leaf sp (Chicory)	Australia: <a href="#">APVMA nominated for reconsideration</a> and spray drift assessment Permit PER14479 (Chicory) Expiry date: 31/08/2029 EU: Not approved Canada: In review USA: Review upcoming
PYDIFLUMETOFEN   DIFENOCONAZOLE	7 + 3	Early blight Powdery mildew Cercospora leaf spot	<p>PYDIFLUMETOFEN</p> <p>Australia: No current concerns. Codex MRL: 0.3 mg/Kg EU: Pending UK: Approved Canada: In review</p> <p>DIFENOCONAZOLE</p> <p>Australia: <a href="#">APVMA nominated for reconsideration after 2029</a> Permit PER87973 (Chicory) Expiry date: 30/06/2030 EU: Approved, candidate for substitution. UK: Approved Canada: In review</p>

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Active constituent	MoA Group	Pest	Risks and Comments
TEBUCONAZOLE	3	Sclerotinia rot (Chicory & Radish)	Australia: APVMA: Removed from nomination list - maintain watching brief EU: Approved, candidate for substitution. UK: Approved Canada: Phase-Out USA: Review upcoming
TRIADIMENOL	3	Powdery Mildew (Parsnips, radish, swede, turnip)	Australia: <a href="#">APVMA nominated for reconsideration after 2029</a> EU: Not approved
TRIFLOXYSTROBIN	11	Permit PER14494 for the control of powdery mildew (Chicory).	Australia: No current concerns. Permit PER14494 (Chicory) Expiry date: 31/08/2027 EU: Approved UK: Approved Canada: In review

### HERBICIDES – Weed Control

Active Constituent	MoA Group	Risks and Comments
CHLORTHAL DIMETHYL	3	<a href="#">APVMA cancelled all products containing chlorthal dimethyl</a> in October 2024. No phase out period applies. Farmers and retailers may continue to hold products until further notice but <b>must not use</b> . The use of chlorthal dimethyl as an agricultural chemical product is now illegal. EU: Not approved USA: Cancelled
CLETHODIM (Permit for use in radish, parsnips, Chicory)	1	Australia: No current concerns. Permit PER82459 Expiry date: 30/09/2026 EU: Approved UK: Approved

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Active Constituent	MoA Group	Risks and Comments
DIQUAT	22	Australia: <a href="#">APVMA: Currently under review. APVMA proposed decisions July 2024</a> . Only uses up to 283gai/ha to be kept. Publication of the final regulatory decision is expected in <u>December 2025</u> . EU: Not approved (withdrawn in 2018). UK: Not approved.
FLUAZIFOP-P PRESENT AS THE BUTYL ESTER (Permits for use in parsnips, chicory, swede and turnip)	1	Australia: <a href="#">APVMA nominated for reconsideration</a> and for targeted spray drift reconsideration Permit PER82556 (Parsnip) Expiry date: 30/11/2027 Permit PER81244 (Chicory, swede, turnip) Expiry date: 30/04/2027 EU: Approved Canada: No current review
LINURON (Use in parsnips)	5	Australia: No current concerns. Use in parsnips EU: Not approved Canada: Special review decision. Cancellation of many uses.
PARAQUAT	22	Australia: <a href="#">APVMA: Currently under review. APVMA proposed decisions July 2024</a> . Only uses up to 231gai/ha to be kept. Publication of the final regulatory decision is expected in <u>December 2025</u> . Codex MRL: 0.05 mg/Kg EU: Not approved (withdrawn in 2018). UK: Not approved.
PENDIMETHALIN (Use in parsnips and radish)	3	Australia: No current concerns. EU: Approved, candidate for substitution. UK: Approved Canada: In review USA: Review upcoming
PHENMEDIPHAM (Permit for use in Chicory)	5	Australia: No current concerns. Permit PER81241 (Chicory) Expiry date: 31/03/2028 EU: Approved UK: Approved
PROMETRYN (Permit for use in Parsnip)	5	Australia: No current concerns. Permit PER12048 (Parsnip) Expiry date: 30/04/2030 EU: Not approved

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Active Constituent	MoA Group	Risks and Comments
PROPACHLOR (Use in Root Vegetables)	15	Australia: No current concerns. Permit PER11441 Expiry date: 31/07/2029 EU: Not approved
QUIZALOFOP-P-ETHYL (Use in radish)	1	Australia: No current concerns. EU: Approved, UK: Approved Canada: No current review
SETHOXYDIM (Use in swedes)	1	Australia: No current concerns. EU: Not approved Canada: Phase-Out
TRIFLURALIN (Use in chicory, parsnips, swede and turnip)	3	Australia: No current concerns. EU: Not approved Canada: No current review USA: Review upcoming

**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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