



Macadamia Agrichemical Regulatory Risk Assessment June 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Regulatory pressures on agrichemicals are increasing globally, with many being either restricted or withdrawn from use.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 with changed data requirements. A consequence of which can be that many agrichemicals are not meeting contemporary risk assessment standards as the necessary data is unavailable, or where data is available, the refined 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 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. 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 **macadamias** as well as assisting with any current initiatives aimed at identifying and addressing identified pest management deficiencies.

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

Blue text = new APVMA approved uses

INSECTS AND OTHER PESTS

Active constituent	MoA group	Insects and other pests	Risks & Comments
Abamectin	6	Broad mite (PER87510)	PER87510 expires 28/02/2029. Codex: Tree nut MRL set at 0.005 mg/kg (2016) APVMA: nominated for reconsideration (reassessment in environment and residues). Also nominated for spray drift assessment and possible spray drift review. UK: Not approved (expired 2024).
		Flat mites (PER87510)	
		Thrips (PER87510)	
Acephate	1b	Banana spotting bug	Australia: APVMA nominated for reconsideration after 2029. EU: Not approved. Canada: In review. USA: Upcoming review.
		Flower thrips	
		Fruit-spotting bug	
		Macadamia flower caterpillar	
		Macadamia leafminer	
		Macadamia nutborer	
Acetamiprid + pyriproxyfen	4A + 7C	Banana-spotting bug	Acetamiprid: Australia: APVMA: Currently under review . Proposed regulatory decisions expected between Dec. 2025 to Oct. 2026. EU: Approved. UK: Approved. Canada: In review. USA: Upcoming review. Pyriproxyfen: Australia: No current concerns. EU: Approved. UK: Approved. Canada: No current review.
		Citrus mealybug	
		Fruit-spotting bug	
		Longtailed mealybug	
		Pink wax scale	
<i>Bacillus thuringiensis</i>	11A	Caterpillars	
		Helicoverpa	
		Painted vine moth	
		Armyworms	
		Light brown apple moth	

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		Looper caterpillars	
Beta-cyfluthrin	3A	Fruit-spotting bug	
		Macadamia nutborer	
		Yellow peach moth	
Carbaryl	1A	Cornelian	Australia: No current concerns.
		Macadamia cup moth	EU: Not approved.
		Macadamia nutborer	Canada: In review.
		Macadamia twig-girdler	USA: Upcoming review.
		Red shouldered leaf beetle	
		Wingless grasshopper	Codex: Tree nut MRL set at 1 mg/kg (2004)
		Yellow peach moth	
Chlorpyrifos	1B	- PER13642 no longer allows chlorpyrifos	<p>APVMA final Review decision October 2024. Use to cease 30 September 2025</p> <p>PER13642 V3 (02/04/2025) removed chlorpyrifos use pattern.</p> <p>Codex: MRLs revoked.</p> <p>Canada: Cancelled (2021).</p> <p>EU and UK: Not approved (approval not renewed in 2020 – health concerns).</p> <p>USA: Cancelled (2021).</p>
Diazinon	1B	Macadamia felted coccid	PER14276 expires 30/08/2025.
		Macadamia leafminer	Australia: Australia: APVMA made a Final Decision on 10 September 2024 . Most agricultural uses were not supported during the review. Approved use on all food crops ceases on 10 September 2025.
		Macadamia lace bug (PER14276)	Codex: All MRLs deleted.
			EU: Not approved.
			Canada: No current review.
			USA: Upcoming review.
Fatty acids + K salt	-	Spider mites	Australia: No current concerns.
			Canada: In review.
Fipronil + S-methoprene	2B + 7A	Yellow crazy ants	<p>Fipronil: Australia: APVMA: Currently under review. Proposed regulatory decision expected by April 2026.</p> <p>EU: Not approved.</p> <p>USA: Upcoming review.</p>
			<p>S-methoprene:</p> <p>EU: Not approved.</p>
Flupyradifurone	4D	Banana-spotting bug	Australia: No current concerns.
		Fruit-spotting bug	EU: Approved.
		Macadamia lace bug	UK: Approved.

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		Scirtothrips	Canada: No current review.
Indoxacarb	22A	Fire ants	PER86827 expires 31/03/2026.
		Macadamia seed weevil (PER86827)	Canada: Cancelled 2021 with all products phased out 2024 (environmental concerns). Codex: Tree nut MRL set at 0.07 mg/kg (2023). EU and UK: Not approved (approval not renewed in 2021 - environmental and safety concerns). USA: Registered.
Isocycloseram	30	Fruit spotting bug	Australia: No current concerns.
		Macadamia seed weevil	Canada: No current review.
Malathion	1B	Australian plague locust (PER13642)	PER13642 V3 (02/04/2025) amended to change maldison to malathion.
		Wingless grasshopper	PER13642 expires 30/04/2030. Codex: Re-evaluation scheduled for this year 2025. APVMA reconsideration – two-year phase-out period to 01/05/2026 for certain labels as listed in the APVMA 02/05/2024 Gazette. UK: Withdrawn. EU: Use restricted to permanent greenhouses. USA: Registered (under review).
Methomyl	1A	Banana fruit caterpillar (PER90592)	PER90592 expires 30/04/2026. Australia: APVMA reconsideration . Prioritised to be commenced by 2026. EU: Not approved. Canada: In review. USA: Upcoming review.
Methoxyfenozide	18	Macadamia flower caterpillar	Australia: No current concerns.
		Macadamia nutborer	EU: Approved, candidate for substitution. UK: Approved. Canada: In review. Codex: Tree nut MRL set at 0.1 mg/kg (2005).
Petroleum oil	UNM	Macadamia felted coccid (PER11635)	PER11635 expires 30/04/2030. Australia: No current concerns.
Pyriproxyfen	7C	Fire ants	Australia: No current concerns. EU: Approved. UK: Approved. Canada: No current review.
S-methoprene	7A	Red imported fire ant (PER81094 &	PER81094 expires 31/05/2026, PER90213 expires 30/06/2027.

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		PER90213)	EU: Not approved
Spinetoram	5	Macadamia nutborer	Australia: No current concerns.
		Macadamia twig-girdler	EU: Not approved.
		Yellow peach moth	UK: Withdrawn.
		Yellow peach moth	Canada: In review.
Sulfoxaflor	4C	Aphids	Codex: Tree nut MRL set at 0.03 mg/kg (2019).
		Banana-spotting bug	Canada: Restricted (bee concerns)
		Black citrus aphid	EU and UK: Restricted to glasshouses (bee concerns)
		Fruit-spotting bug	USA: Restricted (bee concerns)
Tebufenozide	18	Macadamia flower caterpillar	EU: Approved.
		Macadamia nutborer	UK: Approved. Canada: No current review.
Tetraniliprole	28	Sigastus weevil / macadamia seed weevil	Australia: No current concerns. Canada: No current review. Codex: Tree nut MRL set at 0.03 mg/kg (2023).
Trichlorfon	1B	Macadamia flower caterpillar	PER13689 expires 28/02/2027.
		Macadamia lace bug (PER13689)	Australia: APVMA nominated for reconsideration after 2029.
		Banana-spotting bug (PER13689)	EU: Not approved.
		Fruit-spotting bug (PER13689)	Canada: No current review.
		Green vegetable bug (PER13689)	USA: Upcoming review.
Cholecalciferol	Rodents		EU: Not approved. Canada: No current review. USA: Upcoming review.
Coumatetralyl			Australia: APVMA: Currently under review . Proposed decision due July 2025 EU: Not approved.
Zinc phosphide			Australia: No current concerns. EU: Approved. UK: Withdrawn. Canada: In review. USA: Upcoming review.

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DISEASES

Active constituent	MoA Group	Disease	Risks & Comments
Azoxystrobin + tebuconazole	11 + 3	Husk spot	<p>Azoxystrobin: Australia: No current concerns. EU: Approved. UK: Approved. Canada: In review.</p> <p>Tebuconazole: Australia: APVMA: Removed from nomination list - maintain watching brief. EU: Approved, candidate for substitution. UK: Approved. Canada: Phase-Out. USA: Upcoming review.</p>
Carbendazim	1	Husk spot	<p>Australia: APVMA nominated for reconsideration for targeted spray drift reconsideration. EU: Not approved. Canada: In review. Codex: Tree nut MRL set at 0.1 mg/kg (2001).</p>
Copper	M1	Anthracnose Husk spot Phomopsis husk rot & canker Phytophthora root rot Phytophthora stem rot	EU and UK: Approved (some restrictions).
Difenoconazole	3	Husk spot	<p>Australia: APVMA nominated for reconsideration after 2029. EU: Approved, candidate for substitution. UK: Approved. Canada: In review. Codex: Tree nut MRL set at 0.03 mg/kg (2011).</p>
Fluopyram + tebuconazole	3 + 7	Husk spot Botrytis blight	<p>Fluopyram: Australia: No current concerns. EU: Approved. UK: Approved. Canada: No current review.</p> <p>Tebuconazole: Australia: APVMA: Removed from nomination list - maintain watching brief. EU: Approved - candidate for substitution. UK: Approved.</p>

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			Canada: Phase-Out. USA: Upcoming review.
Iprodione	2	Botrytis blight Raceme blight (grey mould)	Codex: MRL set at 0.3 mg/kg (2024). Canada: Registered (but in 2018, several uses cancelled due to human health and environmental concerns). EU: Not approved (approval not renewed in 2017 due to groundwater contamination concerns and long-term risks to aquatic organisms). UK: Not approved (phased out in 2018).
Mefentrifluconazole	3	Husk spot	EU: Approved. UK: Approved. Canada: In review. Codex: Tree nut MRL set at 0.06 mg/kg (2023).
Metalaxyl / Metalaxyl-M	4	Trunk (stem) canker	Metalaxyl: Australia: No current concerns. EU: Approved candidate for substitution. UK: Approved. Canada: In review. Metalaxyl-M: Australia: No current concerns. EU: Approved. UK: Approved.
Penthiopyrad	7	Husk spot	Australia: No current concerns. EU: Approved. UK: Approved. Canada: No current review. Codex: Tree nut MRL set at 0.05 mg/kg (2013).
Pyraclostrobin	11	Husk spot	EU: Approved. UK: Approved. Canada: In review. Codex: Tree nut MRL set at 0.02 mg/kg (2012).
Pyraclostrobin + fluxapyroxad	11 + 7	Husk spot	Pyraclostrobin: EU: Approved. UK: Approved. Canada: In review. Fluxapyroxad: EU: Approved UK: Approved. Canada: No current review.

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PLANT GROWTH REGULATOR

Active constituent	Claim	Risks & Comments
Ethephon	Promote nutfall after maturity reached (PER11462)	PER11462 expires 31/05/2030. EU: Approved. UK: Approved. Canada: No current review.

WEEDS

Active constituent	MoA Group	Weed	Risks & Comments
Carfentrazone-methyl	14	Various broadleaf weeds.	EU: Approved. UK: Approved. Canada: In review.
Diquat	22	Various broadleaf weeds and grasses.	APVMA proposed decisions published July 2024. Use in orchards to be removed including tree nuts December 2025 . Codex: No MRL EU: Not approved (withdrawn in 2018). UK: Not approved. USA: Registered (under review).
Flumioxazin	14	Various broadleaf weeds and grasses.	EU: Approved. Canada: In review. Codex: Tree nut MRL set at 0.02 mg/kg (2016).
Glufosinate-ammonium	10	Various broadleaf weeds and grasses.	Australia: APVMA: Nominated for targeted spray drift reconsideration (potential risk to vegetation, natural aquatic and bystander areas). Codex: Tree nut MRL set at 0.1 mg/kg (2013). Canada: Under re-evaluation. EU: Not approved (approval expired 2018. Candidate for substitution due to reproductive toxicity concerns). UK: Not approved for any uses. USA: Registered (under review).
Glyphosate	9	Various broadleaf weeds and grasses.	Australia: APVMA nominated for reconsideration for targeted spray drift reconsideration EU: Approved. UK: Approved.

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			Canada: No current review. USA: Upcoming review.
Haloxypop-p	1	Various grasses including annual and perennial weeds.	Canada: Limited registration. EU: Not approved (withdrawn 2020). UK: Not approved. USA: Registered.
Isoxaben	29	Various broadleaf weeds.	EU: Approved. UK: Approved. Canada: No current review.
Oryzalin	3	Various broadleaf weeds and grasses.	EU: Not approved. UK: Withdrawn. Expiry date: 31/05/2024.
Oxyfluorfen	14	Various broadleaf weeds and grasses.	EU: Approved, candidate for substitution. UK: Withdrawn. Expiry date: 31/12/2024. Canada: In review. USA: Upcoming review.
Paraquat	22	Various broadleaf weeds and grasses	<u>APVMA proposed decisions July 2024</u> (use in orchards to be removed including tree nuts <u>December 2025</u>). Codex: Tree nut MRL set at 0.05 mg/kg (2006). Canada: Not approved. EU and UK: Not approved (2007). USA: Registered (under review).
Pendimethalin	3	Various broadleaf weeds and grasses.	Australia: No current concerns. EU: Approved, candidate for substitution. UK: Approved. Canada: In review. USA: Upcoming review. Codex: Tree nut MRL set at 0.05 mg/kg (2017).
Trifluralin	3	Various broadleaf weeds and grasses.	EU: Not approved. Canada: No current review. USA: Upcoming review.

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