

Almond 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Regulatory pressures on agrichemicals are increasing globally, with many being either restricted or withdrawn from use.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 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 **almonds** in Australia, as well as assisting with any current initiatives aimed at identifying and addressing 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
1-Dodecanol, (E,E) 8, 10 Dodecadien-1-ol, Dodecenyl acetate-8 E, Dodecenyl acetate-8 Z, Z,8 Dodecenol, Tetradecanol	-	Codling moth	Pheromone mating disruption agent. Low risk.
		Oriental fruit moth	
Abamectin	6	Bryobia mite (Brown almond mite)	APVMA: nominated for reconsideration (reassessment in environment and residues). Also nominated for spray drift assessment and possible spray drift review. Codex: Tree nut MRL set at 0.005 mg/kg (2016). UK: Not approved (expired 2024).
		Two spotted mites	
Bifenazate	20D	Bryobia mite (Brown almond mite)	Codex: Tree nut MRL set at 0.2 mg/kg (2007). Canada: Not registered for use on almonds. EU: Use limited to permanent greenhouses (no use on almonds).
		Two spotted mites	
Bifenthrin	3A	Carpophilus beetle (Dried fruit beetle) (PER87216)	PER87216 expires 28/02/2026. PER82374 expires 30/04/2028. APVMA: nominated for reconsideration (reassessment in environment and health). Codex: Tree nut MRL set at 0.05 mg/kg (2011). Canada: Registered but not for use in almonds. EU: Not approved (approval expired in 2019). UK: Not approved. USA: Approved for use on almonds (under review).
		Brown marmorated stink bug & Yellow stink bug (PER82374)	
Chlorantraniliprole	28	Carob moth	Codex: Tree nut MRL set at 0.02 mg/kg (2011).
Chlorpyrifos	1B	-	APVMA final Review decision October 2024. Use to cease 30 September 2025 PER13642 V3 (02/04/2025) removed chlorpyrifos use pattern. Codex: MRLs revoked. Canada: Cancelled (2021). EU and UK: Not approved (approval not renewed in 2020 – health concerns). USA: Cancelled (2021).
Clofentezine	10A	Bryobia mite (Brown almond mite)	EU: No authorisation

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		Two spotted mites	Codex: Tree nut MRL set at 0.5 mg/kg (2008).
Clothianidin	4A	Carob moth	APVMA reconsideration – assessment in progress. Codex: Tree nut MRL set at 0.01 mg/kg (2024). Canada: Restricted (neonics review, pollinator risks and aquatic invertebrates) EU and UK: Not approved (approval not renewed in 2019 – pollinator risks) USA: Under review (neonics, pollinator risks)
		Carpophilus beetle (Dried fruit beetle)	
Cyflumetofen	25A	Bryobia mite (Brown almond mite)	Codex: Tree nut MRL set at 0.01 mg/kg (2015).
		European red mite	
		Two spotted mites	
Etoxazole	10B	Bryobia mite (Brown almond mite)	Codex: Tree nut MRL set at 0.01 mg/kg (2011).
		European red mite	
		Two spotted mites	
Fatty acids – K salt	U1	Aphids	
		Thrips	
		Mealybug	
		Two spotted mites	
		Spider mite	
		Whitefly	
Indoxacarb	22A	Red Imported fire ant	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 for use on almonds.
		Tropical fire ant	
Isocycloseram	30	Carpophilus beetle	Canada: Not registered. EU and UK: Not approved USA: Not registered.
Lambda-cyhalothrin	3A	Mediterranean fruit fly & Queensland fruit fly (PER12961)	PER12961 expires 31/03/2030 Codex: Tree nut MRL set at 0.01 mg/kg (2009). EU: Approved but no use on almonds (under review Candidate for substitution).
Malathion	1B	Australian plague locust (PER13642)	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 but no use on almonds. USA: Registered for use on almonds (under review).

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Methoxyfenozide	18	Carob moth	Codex: Tree nut MRL set at 0.1 mg/kg (2005). EU: Restricted use to greenhouses only but no use on almonds (Candidate for substitution). UK: Approved use restricted to greenhouses only but no use on almonds (Candidate for substitution due to persistent and toxic substance).
Paraffinic oil / petroleum oil	UN	Bryobia mite (Brown almond mite)	
		Aphids (eggs)	
		Mites (eggs)	
		Mites	
		San Jose scales	
		Scales	
Pirimicarb	1A	Green peach aphid	Codex: Re-evaluation scheduled for this year 2025. USA: No registered products (all cancelled –genotoxicity, beneficial insect toxicity and aquatic life concerns). EU and UK: Approved but not on almonds (Candidate for substitution)
Pymetrozine	9B	Green peach aphid	APVMA: nominated for reconsideration (reassessment in residues). Also nominated for spray drift assessment and possible spray drift review. Codex: No registrant support. Canada: Cancelled for all outdoor uses due to human health concerns but greenhouse uses still approved. Never approved for use on almonds. EU: Not approved (approval not renewed in 2018). UK: Not approved (2022). USA: Approved for use on almonds.
Pyriproxyfen	7C	Invasive and nuisance ants including Red imported fire ant, tropical fire ant, bigheaded ant (Coastal brown ant), yellow crazy ant, black ants, Singapore ant and other <i>Monomorium spp.</i> , pony ants (incl. green ants), meat ants, tyrant ants, green tree ants, longlegged ants, sugar ants and pennant ants	
Spinetoram	5	Carob moth	Codex: Tree nut MRL set at 0.01 mg/kg (2009). EU and UK: Not approved (expired 2024).
Sulfoxaflor	4C	Aphids (adult & larval)	Codex: Tree nut MRL set at 0.03 mg/kg (2019). Canada: Restricted and approved for use on almonds (bee concerns) EU and UK: Restricted to glasshouses but no use on almonds (bee concerns) USA: Restricted and approved for use on almonds (bee concerns)
		Black peach aphid	
		Green peach aphid	

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Sulfur	UN	Bryobia mite (Brown almond mite)	
		Frosted scale	
		San Jose scale	
Tetraniliprole	28	Carpophilus beetle (Dried fruit beetle)	Codex: Tree nut MRL set at 0.03 mg/kg (2023).
		Carob moth	

DISEASES

Active constituent	MoA Group	Disease	Risks & Comments
Azoxystrobin	11	Anthracnose	Codex: Tree nut MRL set at 0.01 mg/kg (2009).
		Blossom blight / Shoot blight / Brown rot	
		Shot hole	
		Hull rot suppression only	
		Stone fruit rust	
Azoxystrobin + tebuconazole	3 + 11	Brown rot / Blossom blight	APVMA: Tebuconazole removed from nomination list. Canada: Tebuconazole under review – not approved for use on almonds. EU and UK: Tebuconazole is a Candidate for substitution – not approved for use on almonds (PBT criteria – persistent, bioaccumulative, toxic). USA: Tebuconazole under review – approved for use on almonds.
		Hull rot suppression only	
		Rust	
		Shot hole	
Captan	M4	Blossom blight	Codex: MRL set at 0.3 mg/kg (2003). Review scheduled for this year 2025. Canada: Approved but not for use on almonds. UK: Approved but not for use on almonds. USA: Approved for use on almonds. Under review.
		Nut scab	
		Shot hole	
		Anthracnose	
Chlorothalonil	M5	Shot hole	APVMA reconsideration to commence in 2028 (reassessment in chemistry, environment, health, residues and trade). Canada: Cancelled (2020). EU and UK: Not approved (withdrawn 2019-2020).
		Stone fruit rust	
Copper	M1	Shot hole	EU and UK: Approved but not for use on almonds (some restrictions). EU: Candidates for substitution
		Leaf curl	
		Brown rot	
		Freckle	
Cyprodinil	9	Blossom blight / Brown rot	Codex: MRL set at 0.02 mg/kg (2005). Canada: Proposed re-evaluation in Q4 (2025-2026).
		Rust	

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		Shot hole	EU: Candidate for substitution.
Fluopyram + tebuconazole	7 + 3	Blossom blight	APVMA: Tebuconazole removed from nomination list. Canada: Combination not approved for use on almonds. Tebuconazole under review. EU and UK: Combination not approved for use on almonds. Tebuconazole is a Candidate for substitution. USA: Approved for use on almonds. Tebuconazole under review.
		Hull rot suppression only	
		Shot hole	
		Stone fruit rust	
Fluopyram + trifloxystrobin	7 + 11	Blossom blight	
		Hull rot suppression only	
		Shot hole	
		Stone fruit rust	
Fluxapyroxad + pyraclostrobin	7 + 11	Alternaria leaf spot	
		Anthrachnose	
		Blossom blight / Brown rot	
		Hull rot suppression only	
		Scab or freckle	
		Shot hole	
		Leaf rust	
Iprodione	2	Blossom blight	Codex: MRL set at 0.3 mg/kg (2024). Canada: Registered (but in 2018, several uses cancelled due to human health and environmental concerns. Not approved in almonds). 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).
		Brown rot	
Isopyrazam	7	Anthrachnose suppression only	Canada: Limited registration (not in almonds). EU: Not approved (withdrew approval due to concerns over classification as toxic for reproduction (category 1B) and as a suspected carcinogen (category 2) in 2022 – was not approved on almonds). UK: Approved but not on almonds. USA: Not registered.
		Blossom blight / Shoot blight / Brown rot	
		Hull rot suppression only	
		Scab	
		Shot hole	
		Stone fruit rust	
Mancozeb	M3	Brown rot / Blossom blight	APVMA reconsideration to commence Q1 2027 (reassessment in environment, residues and trade). Codex: To be reviewed. Canada: Phasing out (2023, not approved in almonds). EU: Banned in 2021 (in 2020, not renewed due to concerns over classification as toxic for reproduction and potential endocrine-
		Rust	
		Shot hole	
		Freckle	

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			<p>disrupting properties but in October 2024, the Cour of Justice of the EU annulled the non-renewal decision and now is pending outcome of reassessment, so status is under review).</p> <p>UK: Approval expired May 2024 (final use-up date is 31/10/2025. No approval in almonds).</p> <p>USA: Under review (restrictions pending – approved on almonds).</p>
Mefentrifluconazole	3	Blossom blight / Brown rot Leaf rust suppression only Shot hole suppression only	Codex: Tree nut MRL set at 0.06 mg/kg (2023).
Metalaxyl-M	4	Collar rot, crown rot & root rot (PER94212)	PER94212 expires 30/11/2025.
Penthiopyrad	7	Blossom blight / Brown rot	Codex: Tree nut MRL set at 0.05 mg/kg (2013).
Phosphorous (phosphonic) acid	33	Phytophthora spp. suppression only	
Polyoxin D zinc salt	19	Shot hole suppression only Hull rot suppression only	
Propiconazole	3	Blossom blight & anthracnose (PER12989)	<p>PER12989 expires 31/08/2026.</p> <p>APVMA: nominated for reconsideration (reassessment in environment, residues and trade). Also nominated for spray drift assessment and possible spray drift review.</p> <p>Canada: Under review – not approved on almonds.</p> <p>EU: Not approved (approval not renewed in 2018).</p> <p>UK: Not approved (approval expired May 2024 with final use-up date of 31/10/2025).</p> <p>USA: Under review (currently approved on almonds).</p>
Pyraclostrobin	11	Rust	Codex: Tree nut MRL set at 0.02 mg/kg (2012 except pistachio nuts).
Rhizobium rhizogenes strain K1026	NC	Crown gall	
Sulfur	M2	Freckle Leaf curl Rust Shot hole Blossom blight / Brown rot	
Tebuconazole	3	Botryosphaeria dothidea Dying arm disease (Eutypa dieback)	<p>APVMA: Tebuconazole removed from nomination list.</p> <p>Codex: Tree nut MRL set at 0.05 mg/kg (2012).</p> <p>Canada: Review completed late 2024. Not approved for use on</p>

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			<p>almonds.</p> <p>EU and UK: Candidate for substitution (not approved for use on almonds).</p> <p>USA: Under review (approved for use on almonds).</p>
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PLANT GROWTH REGULATORS

Active constituent	Claim	Risks & Comments
Aminoethoxyvinylglycine (AVG)	Extend flower life	<p>Canada: Limited registration (not on almonds).</p> <p>EU and UK: Not approved.</p> <p>USA: Registered for almonds in California (ReTain)</p>
Cyanamide	Regulation of bud dormancy	<p>Canada: Not registered.</p> <p>EU: Not approved (withdrawn in 2013 – health and environmental concerns).</p> <p>UK: Not approved (withdrawn – health and environmental concerns).</p> <p>USA: Registered for use on almonds (limited states).</p>

WEEDS

Active constituent	MoA Group	Weed	Risks & Comments
Carfentrazone-ethyl	14	Various broadleaf weeds.	
Diquat	22	Various broadleaf weeds and grasses.	<p>APVMA proposed decisions July 2024 (use in orchards to be removed including tree nuts December 2025).</p> <p>Australia: No current uses on almonds.</p> <p>EU: Not approved (withdrawn in 2018).</p> <p>UK: Not approved.</p> <p>USA: Registered on almonds (under review).</p>
Flumioxazin	14	Various broadleaf weeds and grasses.	Codex: Tree nut MRL set at 0.02 mg/kg (2016).
Glufosinate-ammonium	10	Various annual and perennial weeds including broadleaf weeds and grasses.	<p>APVMA: Nominated for targeted spray drift reconsideration (potential risk to vegetation, natural aquatic and bystander areas).</p> <p>Codex: Tree nut MRL set at 0.1 mg/kg (2013).</p> <p>Canada: Under re-evaluation (approved on almonds – Ignite SN Herbicide)</p> <p>EU: Not approved (approval expired 2018. Candidate for substitution</p>

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			due to reproductive toxicity concerns). UK: Not approved for any uses. USA: Registered for use on almonds (under review).
Glyphosate	9	Various annual and perennial weeds including broadleaf weeds, grasses and woody weeds.	Canada: Approved but no uses on almonds. EU: Approved for use on almonds (under review). USA: Registered for use on almonds (litigation ongoing).
Haloxypop-P	1	Various grasses including annual and perennial weeds.	Canada: Limited registration (not on almonds). EU: Not approved (withdrawn (2020)). UK: Not approved. USA: Registered on almonds.
Indaziflam	29	Various broadleaf weeds and grasses.	
Isoxaben	29	Various broadleaf weeds.	
Napropamide	0	Various broadleaf weeds and grasses.	
Norflurazon	12	Various broadleaf weeds and grasses	Canada: Not approved. EU and UK: Not approved. USA: Registered for use on almonds.
Oryzalin	3	Various broadleaf weeds and grasses.	
Oxyfluorfen	14	Various broadleaf weeds and grasses.	USA: Registered for use on almonds (under review).
Paraquat	22	Various broadleaf weeds and grasses	APVMA proposed decisions July 2024 (use in orchards to be removed including tree nuts December 2025). Australia: No current uses on almonds. Codex: Tree nut MRL set at 0.05 mg/kg (2006). Canada: Not approved. EU and UK: Not approved (2007). USA: Restricted use but approved on almonds (under review).
Pendimethalin	3	Various perennial weeds including broadleaf weeds and grasses.	Codex: Tree nut MRL set at 0.05 mg/kg (2017).
Saflufenacil	14	Various broadleaf weeds and grasses.	Codex: Tree nut MRL set at 0.01 mg/kg (2012).
Simazine	5	Various broadleaf weeds and grasses.	Not prioritised for APVMA review before 2029 Canada: Registered for use on almonds (under review).

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			EU: Not approved (2016). UK: Not approved. USA: Registered for use on almonds (under review).
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