Olive

Strategic Agrichemical Review Process (SARP)

March 2025

Hort Innovation
Project – MT23001

Hort Innovation Project Number:
MT23001 – Strategic Agrichemical Review Process (SARP) - Updates

SARP Service Provider:
AGK Services

Purpose of the report:
This report was funded by Hort Innovation to investigate the pest problem, agrichemical usage and pest management alternatives for the olive industry across Australia. The information in this report will assist the industry with its agrichemical selection and usage into the future.

Date of report:
March 2025

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Communications Manager
Hort Innovation
Level 7, 141 Walker Street
North Sydney NSW 2060
Australia
Email: communications@horticulture.com.au
Phone: 02 8295 2300

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1. Summary

The strategic levy investment project Strategic Agrichemical Review Process (SARP) - Updates (MT23001) is part of the Hort Innovation Olive Fund. A Strategic Agrichemical Review Process (SARP), through the process of a desktop audit and industry liaison; Assesses the importance of the diseases, insects and weeds (plant pests) that can affect a horticultural industry;

(i) Assesses the importance of the diseases, insects and weeds (plant pests) that can affect a horticultural industry;
(ii) Evaluates the availability and effectiveness of fungicides, insecticides and herbicides (pesticides) to control the plant pests;
(iii) Determines any gaps in the pest control strategy and
(iv) Identifies suitable new or alternatives pesticides to address the gaps.

Alternative pesticides should ideally be selected for benefits of:

- Integrated Pest Management (IPM) compatibility
- Improved scope for resistance management
- Sound biological profile
- Residue and trade acceptance domestically and for export

The results of this process will provide the Olive Industry with sound pesticide usage for the future that the industry can pursue for registration with the manufacturer, or minor-use permits with the Australian Pesticide and Veterinary Medicines Authority (APVMA).

1.1 Diseases

The high priority diseases are:

Disease	Priority
Anthracnose (*Colletotrichum* spp.)	H
Olive Peacock Spot /Olive Leaf Spot (*Spilocaea oleagina*)	H

1.2 Insects and other pests

The high priority insects and other pests are:

Insects and Other Pests	Priority
Olive Lace Bug (*Froggattia olivinia*)	H

1.3 Weeds

The high priority weeds are:

Weeds	Priority
Flaxleaf Fleabane (*Conyza bonariensis*)	H

1.4 Plant Growth Regulator Issues

There were no high priority plant growth regulator issues, but the following were rated as moderate priority:

Weeds	Priority
Fruit loosening prior to harvest	M

2. The Australian Olive Industry

Olives are grown in many Australian states, with the majority of production occurring in Victoria. Almost all olives grown in Australia are for production of olive oil, with a small proportion grown for use as table olives. Most production is consumed in the domestic market, with significant quantities imported each year to augment local production. Import volumes are reducing each year as our domestic production increases.

Production for the year ending June 2023 was 100,536 tonnes. The value of production was $124.7 million, with 97% sent to oil production resulting in 17,509 tonnes of olive oil. Planted areas are increasing over time but production can be significantly affected by seasonal variations.

Fresh Olive Seasonality by State[1]

State	22/23 Tonnes	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
Victoria	69,521												
South Australia	10,958												
Western Australia	10,556												
New South Wales	8,646												
Queensland	724												
Tasmania	131												
Availability Legend			High			Medium			Low			None	

Export volumes are minor with 264 tonnes of table olives and 1,090 tonnes of olive oil exported in the year ending June 2023.

[1] Hort Innovation (2024). Australian Horticulture Statistics Handbook 2022/23. [online] Available at: https://www.horticulture.com.au/growers/help-your-business-grow/research-reports-publications-fact-sheets-and-more/australian-horticulture-statistics-handbook/

3. Introduction

3.1 Background

Growers of some horticultural crops suffer from a lack of legal access to crop protection products (pesticides). The problem may be that whilst a relatively small crop area is valuable in an agricultural sense, it may not be of sufficient size for Agrichemical companies to justify the expense of registering a product use on that crop. Alternately, the disease, pest, or weed problem may be regional or spasmodic, making Agrichemical companies unwilling to bear the initial high cost of registering suitable pesticides.

Growers may face severe losses from diseases, pests and weeds due to a lack of registered or approved (via a permit) chemical control tools.

Environmental concerns, consumer demands, and public opinion are also significant influences in the marketplace related to pest management practices. Industry IPM practitioners must strive to implement best management practices and tools to incorporate a pest management regime where strategies work in harmony with each other to achieve the desired effects while posing the least risks.

In combination with cultural practices, pesticides are important tools in olive production and respective IPM programs. They control the various diseases, insects and weeds that affect the crop and can cause severe economic loss in modern high intensity growing operations. Pesticides are utilised during establishment and development, and to maximise quality and customer appeal.

As a consequence of the issues facing the olive industry regarding pesticide access, Hort Innovation has undertaken the current project to update the Strategic Agrichemical Review Process (SARP) for olive.

The SARP process identifies diseases, insect pests and weeds of major concern to the olive industry. Against these threats, available registered or permitted pesticides are evaluated for overall suitability in terms of IPM, resistance, efficacy, trade, human safety and environmental issues. Where tools are unavailable or unsuitable the process aims to identify potential future solutions. Potential new risks to the industry are also identified.

The results will provide the olive industry with a clear outlook of gaps in existing pest control options. This report is not a comprehensive assessment of ALL pests and control methods used in olive but attempts to prioritise the major problems.

Exotic plant pests, not present in Australia, are not addressed in this document. Biosecurity plans have been developed for the Olive Industry in consultation with industry, government and scientists. The Biosecurity Plan outlines key threats to the industry, risk mitigation plans, identification and categorisation of exotic pests and contingency plans. High priority exotic pests have been assessed based on their potential to enter, establish, and spread in Australia (e.g. environmental factors, host range, vectors) and the cost to industry of control measures. More information is available at this link[2].

[2] https://www.planthealthaustralia.com.au/industries/

3.2 Minor use permits and registration

From a pesticide access perspective, the APVMA classifies olives as a minor crop. Table Olives fit within the APVMA Crop Group 005: Assorted Tropical and Sub-Tropical Fruits – edible peel, Subgroup 005A, Assorted Tropical and Sub-Tropical Fruits, edible peel - small. Olives produced for olive oil also fit within the APVMA Crop Group 023: Oilseed, and Subgroup 023D, Oil fruits. Access to minor use permits can be achieved as long as a reasonable justification is provided in accordance with the APVMA's minor use guidance[3]. Possible justification for future permit applications could be based on:

- New disease, insect or weed identified as a cropping issue
- No pesticide approved for the problem
- Insufficient options for resistance management
- Current pesticides ineffective due to resistance
- Trade risk - current pesticides unsuitable where crop commodities will be exported
- IPM, environment or OH&S issues
- Loss of pesticides due to removal from market or chemical review restrictions
- Opportunity to extrapolate a use pattern when a new, effective pesticide is registered in another crop
- Alternate pesticide has overseas registration or minor use permit
- Market failure – insufficient return on investment for registrant.

With each of these options, sound, scientific argument is required to justify any new permit applications. Another option for the olive industry is for manufacturers to register new pesticides uses in the crop.

3.3 Methods

The current version of the Olive Strategic Agrichemical Review Process (SARP) was conducted by desktop audit and included an online industry survey. The process included gathering, collating and confirming information. The steps in the process were:

Process of Review	Activity / Date
Industry survey	Preparation and circulation of online industry survey to update priority pests and identify priority control gaps. Survey released: 6 November 2023 Survey closed: 30 June 2024. Two responses were received with unanswered priority lists. To address this, consultations with olive industry specialists were undertaken to review and update the priority lists.
SARP data updated via a desktop audit	Updated registrations and permits Updated MRL tables Updated available and potential pesticides against low, moderate and high priority pests, including an assessment of their suitability Included information on regulatory risks from MT20007
Captured industry input	Collated and analysed survey results Consolidated and incorporated industry needs and insights

[3] https://apvma.gov.au/node/10931

3.4 Results and discussions

3.4.1 Detail

Results and discussions are presented in the body of this document.

3.4.2 Appendices

Refer to additional information in the appendices:

Appendix 1. Products available for disease control in olive
Appendix 2. Products available for control of insects and other pests in olive
Appendix 3. Products available for weed control in olive
Appendix 4. Plant Growth Regulators available in olives
Appendix 5. Current permits for use in olive
Appendix 6. Olive Maximum Residue Limits (MRLs)
Appendix 7. Olive regulatory risk assessment

4. Diseases, pests and weeds of olive

Resistance management: To manage the risk of resistance development, integrated disease/pest/weed management (IDM/IPM/IWM) strategies should be adopted. The general principle is to integrate diverse chemical and non-chemical strategies; maximise efficacy; not rely on singular tools and rotate between different modes of action. It is always essential to follow all the label instructions. Specific resistance management strategies may apply. These can be found, along with other useful information, on the CropLife Australia website[4].

Information on regulatory risk derived from project MT20007 (Chapter 4) - Regulatory support and coordination (Appendix 7) has been incorporated. Some of the suggested options have no overseas MRLs (see Appendix 6). If treated fruit is to be exported nil residues at harvest would be needed for these options. While care has been taken to ensure the accuracy of the information provided in this document the APVMA registered label and where relevant the APVMA approved permit must always be followed.

[4] https://www.croplife.org.au/resources/programs/resistance-management/

4.1 Diseases of Olive

4.1.1 Disease priorities

Disease	Priority
Anthracnose (*Colletotrichum* spp.)	H
Olive Peacock Spot /Olive Leaf Spot (*Spilocaea oleagina*)	H
Cercospora Leaf Mould / Olive Leaf Spot or Cercosporiosis (*Cercospora cladosporioides / Pseudocercospora cladosporioides*)	M
Olive Knot (*Pseudomonas savastanoi*)	M
Verticillium Wilt (*Verticillium dahliae*)	M
Bacterial Stem Cankers and Dieback (*Pseudomonas syringae, Xanthomonas campestris, Ralstonia solanacearum*)	M
Phytophthora Root Rot (*Phytophthora* spp.)	L
Pythium Root Rot (*Pythium* spp.)	L
Rhizoctonia Root Rot (*Rhizoctonia* spp.)	L
Fruit Rots (*Botryosphaeria* spp., *Alternaria* spp., *Coleophoma oleae*)	L
Charcoal Root Rot (*Macrophomina phaseolina*)	L
Stem Cankers (*Botryosphaeria* spp.)	L
Fusarium Root Rot (*Fusarium* spp.)	L
Green and Blue Moulds (*Penicillium* spp.)	L

Anthracnose and Olive Peacock Spot / Olive Leaf Spot were identified as high priority diseases of olives. It is recommended that an Integrated Disease Management Strategy is implemented, including a range of cultural practices to support fungicides, and potentially reduce the reliance on fungicides for disease control.

Cultural controls include:

- Biosecurity measures to prevent importing infections from other farms.
- Promoting good drainage and avoid waterlogging through irrigation.
- Farm hygiene – remove dead plant material that could contain disease inoculum.
- Avoid crop stress through good nutrition and water management.

In controlling fungal and bacterial diseases, the industry should be mindful of resistance management. In addition to cultural controls, it is important to include a range of fungicide groups in a foliar spray program, including the use of protectant fungicides. Fungicide programs should be planned at the start of the season to ensure that effective disease control is achieved in conjunction with appropriate product rotation.

CropLife Australia have resistance management strategies[5] available which provide useful guidance for growers when preparing their disease control programs.

[5] https://www.croplife.org.au/resources/programs/resistance-management/

4.1.2 Available and potential products for priority diseases

TABLE KEY: Note that blank fields in the table indicate no information has been provided.

Availability		Regulatory risk (refer to Appendix 7)	
A	Available via either registration or permit approval	R1	Short-term: Critical concern over retaining access
P	Potential - a possible candidate to pursue for registration or permit	R2	Medium-term: Maintaining access of significant concern
P-A	Potential, already approved in the crop for another use	R3	Long-term: Potential issues associated with use - Monitoring required

Withholding Period (WHP) – Number of days from last treatment to harvest (H) or Grazing (G)			
Harvest	H	Not Required when used as directed	NR
Grazing	G	No Grazing Permitted	NG

Disease / Active Ingredient (Trade Name)	Chemical group	Activity	WHP, days	Availability	States	Comments	Regulatory risk
Anthracnose (*Colletotrichum* spp.) **Priority: High**							
Rated as a high priority in olives. Anthracnose is a serious disease and should be managed using an integrated approach including cultural methods and fungicide applications. Fruit can be infected any time from flowering onwards, but symptoms do not usually become visible until the fruit begins to ripen. A planned protectant fungicide program should be used from pre-flowering through to harvest to reduce infections. Cultural practices include minimising periods of leaf wetness and destruction of crop residues.							
Azoxystrobin	11	Protectant & Curative	21	A	ALL	Registered in olives for control of **Anthracnose**. Apply as a foliar spray before disease infection occurs. Use a minimum retreatment interval of 21 days. Maximum of 2 applications per season.	-
Bacillus amyloliquefaciens strain QST713 (Serenade Opti) Bayer	BM02	Biological	NR	A	ALL	Registered in tropical fruit (excluding banana) for control of **Anthracnose** (*Colletotrichum* spp.) and suppression of Stem End Rot. Begin applications as a foliar spray when crop reaches susceptible stage for Anthracnose infection. Use a retreatment interval of 7-21 days. Maximum number of applications per season not specified.	-
Bacillus amyloliquefaciens strain QST713 (Serenade Prime) Bayer	BM02	Biological	NR	A	ALL	Registered in tropical fruit (excluding banana) for control of **Anthracnose** (*Colletotrichum* spp.) and suppression of Stem End Rot. Begin applications as a foliar spray when crop reaches susceptible stage for Anthracnose infection. Use a retreatment interval of 7-21 days. Maximum number of applications per season not specified.	-

Disease / Active Ingredient (Trade Name)	Chemical group	Activity	WHP, days	Availability	States	Comments	Regulatory risk
Copper as Cupric Hydroxide Tribasic Copper Sulfate	M1	Protectant	1	A	ALL	Registered in olives for control of Peacock Spot (*Spilocia oleaginea*) and **Anthracnose** (*Colletotrichum* spp.) Apply as a foliar spray prior to the onset of disease. Retreatment interval and maximum number of applications per season not specified.	-
Copper Oxychloride						Registered in olives for control of Peacock Spot (*Spilocia oleaginea*), Grey Leaf Spot (*Cercospora cladosporiodes Sacc.*), Fruit Round Spot (*Sphaeropsis dalmatica Thum*), **Anthracnose** (*Gloeosporium olivarum Alm*) and Fruit Rots (*Penicillium sp.*, *Fusarium sp.*, *Cladosporium sp.*) Apply as a foliar spray in autumn before winter rain and again as fruit colour changes. Retreatment interval and maximum number of applications per season not specified.	
Fluopyram + Tebuconazole (Luna Experience) Bayer	7+3	Protectant & Curative	14 NG	A	ALL	Registered in olives for control of **Anthracnose** (*Colletotrichum* spp.) Apply as a foliar spray as soon as crop development has reached susceptible stages for disease infection. Use a retreatment interval of 14-21 days. Maximum of 2-3 applications per season, not exceeding a total of 2.5L/ha.	R3
Mancozeb PER88358	M3	Protectant	14	A	ALL	Permitted in olives for control of **Anthracnose** (*Colletotrichum gleosporioides*). Apply as a foliar spray before infection occurs. Treatment timing should be at pruning (Jun-Jul), before flowering (Oct-Nov) and early fruit set (Dec-Jan). Use a minimum retreatment interval of 14 days. Maximum of 4 applications per season.	R2
Metiram + Pyraclostrobin (Aero) PER87332	M3+11	Protectant & Curative	21 NG	A	ALL (excl. VIC)	Permitted in olives for control of **Anthracnose** (*Colletotrichum gleosporioides*). Apply as a foliar spray before infection occurs. Spraying prior to flowering is a good guide, and again just after fruit set. Use a minimum retreatment interval of 21 days. Maximum of 2 applications per season.	R2
Aureobasidium pullulans Strain DSM 14940 & DSM 14941 (Botector) Nufarm	-	Biological / Protectant	NR	P		Registered for control of Botrytis and other diseases in grapes, berries and fruiting vegetables, including the suppression of **Anthracnose Fruit Rot** in berries.	-

Disease / Active Ingredient (Trade Name)	Chemical group	Activity	WHP, days	Availability	States	Comments	Regulatory risk
Benzovindiflupyr + Propiconazole (Elatus) Syngenta	7+3	Protectant & Curative		P		Registered for control of various disease in wheat and barley. US registration for **Anthracnose** in sweet corn.	R3
BLAD (Problad Plus)	BM 01	Biological	NR	P		Registered in stone fruit for suppression of Brown Rot. US registration for control of **Anthracnose** in grapes and strawberries.	-
Dimethomorph (Acrobat)	40	Protectant		P		Registered for control of **Anthracnose** in cucurbits and lettuce.	-
Fludioxonil + Azoxystrobin (Graduate A+) Syngenta	12+11	Protectant / Post-harvest treatment		P		Registered for post-harvest control of **Anthracnose** in avocado.	R3
Fluxapyroxad + Pyraclostrobin (Merivon) BASF	7+11	Protectant & Curative		P		Registered in almonds, cherries and macadamia for control of various leaf diseases. Registered for control of **Anthracnose** in almonds.	-
Isofetamid (Kenja) ISK / AgNova	7	Protectant & Curative		P		Registered in strawberries for control of Botrytis Grey Mould. US registration for control of Grey Mould, Powdery Mildew and **Anthracnose** in low-growing berries.	-
Mefentrifluconazole (Belanty) BASF	3	Protectant & Curative		P		Registered for control of Powdery Mildew in grapes, control of Black Spot and Powdery Mildew and suppression of Alternaria in apples, control of Blossom Blight and suppression of Leaf Rust, Shot Hole and Hull Rot in almonds, control of Husk Spot in macadamias, control of Powdery Mildew and Gummy Stem Blight in cucurbits, and control of Powdery Mildew and Target Spot in fruiting vegetables. US registration for control of **Anthracnose** in fruiting vegetables and tree nuts.	-
Pydiflumetofen + Fludioxonil (Miravis Prime) Syngenta	7+12	Protectant / Curative		P		Registered for control of various diseases in grapes, berries, leafy vegetables, lettuce and potato. US registration for control of **Anthracnose** in grape and small fruit vine climbing (except fuzzy kiwifruit), lemon & lime, low-growing berries, specific tree nuts, almonds and bushberries.	R3

Disease / Active Ingredient (Trade Name)	Chemical group	Activity	WHP, days	Availability	States	Comments	Regulatory risk
Olive Peacock Spot /Olive Leaf Spot (*Spilocaea oleagina*) **Priority: High**							
Rated as a high priority in olives. Peacock Spot causes leaf spots that can grow and merge together. Most infected leaves will fall prematurely by summer. Strategically timed copper sprays have been the major option for protecting against infections.							
Copper as Cupric Hydroxide Tribasic Copper Sulfate	M1	Protectant	1	A	ALL	Registered in olives for control of **Peacock Spot** (*Spilocia oleaginea*) and Anthracnose (*Colletotrichum* spp.) Apply as a foliar spray prior to the onset of disease. Retreatment interval and maximum number of applications per season not specified.	-
Copper Oxychloride						Registered in olives for control of **Peacock Spot** (*Spilocia oleaginea*), Grey Leaf Spot (*Cercospora cladosporiodes Sacc.*), Fruit Round Spot (*Sphaeropsis dalmatica Thum*), Anthracnose (*Gloeosporium olivarum Alm*) and Fruit Rots (*Penicillium sp.*, *Fusarium sp.*, *Cladosporium sp.*) Apply as a foliar spray in autumn before winter rain and again as fruit colour changes. Retreatment interval and maximum number of applications per season not specified.	
Bacillus amyloliquefaciens (strain QST 713) (Serenade Opti) Bayer	BM02	Biological / Protectant	NR	P		Registered for control of various leaf diseases in avocado, fruiting vegetables, grapes, mango and strawberry. Activity on Peacock Spot unknown.	-
Florylpicoxamid (Adavelt) Corteva	21	Protectant & Curative		P		Registered in cucurbits, fruiting vegetables, lettuce and strawberry for control of a range of diseases. Activity on Peacock Spot unknown.	-
Mefentrifluconazole (Belanty) BASF	3	Protectant & Curative		P		Registered for control of Black Spot in apples and Powdery Mildew in grapes. Activity on Peacock Spot unknown.	-

Disease / Active Ingredient (Trade Name)	Chemical group	Activity	WHP, days	Availability	States	Comments	Regulatory risk
Cercospora Leaf Mould / Olive Leaf Spot or Cercosporiosis (*Cercospora cladosporioides / Pseudocercospora cladosporioides*) **Priority: Moderate**							
Rated as a moderate priority in olives. Can cause significant leaf drop and fruit damage under warm, humid conditions. Cultural controls have been successful in controlling husk spot, which is a closely related disease in macadamias. An example has been the use of a mechanical tree shaker to prevent husk spot without the need for fungicides.							
Copper Oxychloride	M1	Protectant	1	A	ALL	Registered in olives for control of Peacock Spot (*Spilocia oleaginea*), **Grey Leaf Spot** (*Cercospora cladosporiodes Sacc.*), Fruit Round Spot (*Sphaeropsis dalmatica Thum*), Anthracnose (*Gloeosporium olivarum Alm*) and Fruit Rots (*Penicillium sp.*, *Fusarium sp.*, *Cladosporium sp.*) Apply as a foliar spray in autumn before winter rain and again as fruit colour changes. Retreatment interval and maximum number of applications per season not specified.	-
Azoxystrobin + Difenoconazole (Amistar Top) Syngenta	3+11	Protectant & Curative		P		Registered for control of Leaf Blight (*Alternaria* and *Cercospora*) in carrots, and various leaf diseases in potatoes and carrots.	R3
Florylpicoxamid (Adavelt) Corteva	21	Protectant & Curative		P		Registered in cucurbits, fruiting vegetables, lettuce and strawberry for control of a range of diseases. Activity on Cercospora unknown.	-
Mefentrifluconazole (Belanty) BASF	3	Protectant & Curative		P		Registered for control of Black Spot in apples and Powdery Mildew in grapes. US registration for control of **Cercospora** in corn, legume vegetables, peanuts, sorghum, millet, soybean and sugar beet.	-
Pydiflumetofen + Fludioxonil (Miravis Prime) Syngenta	7+12	Protectant & Curative		P		Registration pending in Australia for control of Botrytis, Alternaria, Powdery Mildew & Anthracnose in berries. US registration for control of **Cercospora** in brassicas, carrots, cucurbits, stalk vegetables and root and tuber vegetables.	R3

Disease / Active Ingredient (Trade Name)	Chemical group	Activity	WHP, days	Availability	States	Comments	Regulatory risk
Olive Knot (*Pseudomonas savastanoi*) **Priority: Moderate**							
Rated as a moderate priority in olives. Olive Knot causes tumours or galls to form on trees, usually on stems and branches. Wounds caused by harvesting, pruning or weather events can provide an entry point for the pathogen. There are no control options available and management relies on farm hygiene and preventing infection entry points.							
Copper	M1	Protectant	1	P-A	ALL	Registered in olives for control of Peacock Spot (*Spilocia oleaginea*) and Anthracnose (*Colletotrichum* spp.) US registration for control of **Olive Knot** in olive.	-
2,4-Xylenol + Meta-Cresol	-	Protectant		P		US registration for control of **Olive Knot** (*Pseudomonas savastanoi*) in olives.	-
Verticillium Wilt (*Verticillium dahliae*) **Priority: Moderate**							
Rated as a moderate priority in olives. Verticillium Wilt is a soil-borne disease that can lead to tree death and is untreatable once infection has occurred. Infected trees and limbs should be removed and mulched immediately to prevent spread within the orchard.							
Chloropicrin + 1,3-Dichloropropene (Telone C-35)	8B	Soil Fumigant	NR	A	ALL	Registered as a soil fumigant prior to planting for control of soil-borne diseases (including *Fusarium* & *Verticillium Wilts*, *Rhizoctonia*, *Pythium*). Restricted chemical. ***For use by professional and registered fumigators only.***	-
Streptomyces lydicus (Actinovate) Novozymes BioAg	BM02	Biological	NR	P-A	ALL	Registered in all crops as a biological soil amendment to stimulate soil organisms to make nutrients more available for plant growth.	-
Bacterial Stem Cankers and Dieback (*Pseudomonas syringae, Xanthomonas campestris, Ralstonia solanacearum*) **Priority: Moderate**							
Rated as a moderate priority in olives. Infection occurs through wound entry points and can be transmitted by wind, water and soil.							
Copper	M1	Protectant	1	P-A	ALL	Registered in olives for control of Peacock Spot (*Spilocia oleaginea*) and Anthracnose (*Colletotrichum* spp.) US registration for control of Olive Knot in olive.	-

Disease / Active Ingredient (Trade Name)	Chemical group	Activity	WHP, days	Availability	States	Comments	Regulatory risk
2,4-Xylenol + Meta-Cresol (Gallex)	-	Protectant		P		US registration for control of Olive Knot (*Pseudomonas savastanoi*) in olives.	-
Phytophthora Root Rot (*Phytophthora* spp.) **Priority: Low**							
Rated as a low priority in olives. Phytophthora is a widespread soil-borne pathogen that thrives in poorly drained soil and warm temperatures. Severe infections can lead to severe necrosis of roots and subsequent yellowing and wilting of above ground plant parts. Trees can eventually die. Management includes site selection to ensure good drainage, improving soil organic matter, careful irrigation management and fungicide treatments.							
Streptomyces lydicus (Actinovate) Novozymes BioAg	BM02	Biological	NR	P-A	ALL	Registered in all crops as a biological soil amendment to stimulate soil organisms to make nutrients more available for plant growth. Registered for control of **Phytophthora** in strawberries and tomato.	-
Mandipropamid (Revus) Syngenta	40	Curative / Protectant		P		Registered for control of Downy Mildew in grapes, lettuce, leafy vegetables and oilseed poppies. US registration for control of **Phytophthora** in various crops, including as a foliar application for protection of citrus from Phytophthora Root Rot.	-
Metalaxyl-M (Ridomil Gold 25G)	4	Protectant		P		Registered for control of **Phytophthora Root Rot** in avocados, macadamia nuts, peaches and potatoes.	-
Oxathiopiprolin (Zorvec Enicade) Corteva	49	Protectant & Curative		P		Registered for control of Downy Mildew in bulb vegetables, brassicas, cucurbits, leafy vegetables and poppies. Permitted for control of **Phytophthora Root Rot** in raspberries and blackberries. US registration for control of **Phytophthora** Canker and Brown Rot in citrus.	-
Phosphorous Acid	P07	Protectant & Curative		P		Permitted in pawpaw (papaya) for control of **Phytophthora Root Rot** (*Phytophthora palmivora*) and Pythium (*Pythium* spp.) Apply either through fertigation to newly established or damaged established trees, or as a foliar application using a 14 day retreatment interval. Maximum number of treatments per season not specified.	-

Disease / Active Ingredient (Trade Name)	Chemical group	Activity	WHP, days	Availability	States	Comments	Regulatory risk
Pythium Root Rot (*Pythium* spp.) **Priority: Low**							
Rated as a low priority in olives. Pythium Root Rot is a soil-borne disease which can impact new established trees in poorly drained sites.							
Chloropicrin + 1,3-Dichloropropene (Telone C-35)	8B	Soil Fumigant	NR	A	ALL	Registered as a soil fumigant prior to planting for control of soil-borne diseases (including *Fusarium* & *Verticillium Wilts*, *Rhizoctonia*, *Pythium*). Restricted chemical. ***For use by professional and registered fumigators only.***	-
Streptomyces lydicus (Actinovate) Novozymes BioAg	BM02	Biological	NR	P-A	ALL	Registered in all crops as a biological soil amendment to stimulate soil organisms to make nutrients more available for plant growth.	-
Acibenzolar-S-Methyl (Actigard Plant Activator) Syngenta	P01	Protectant		P		Registered in tomatoes for the suppression of Bacterial Speck, Bacterial Spot, Bacterial Canker and Powdery Mildew. US registration (Bion) for control of Damping Off caused by *Rhizoctonia solani*, *Pythium* and *Fusarium* sp. in cotton.	-
Metalaxyl-M (Ridomil Gold 25G)	4	Protectant		P		Registered for control of **Damping Off (*Pythium* spp.)** in cucurbits, capsicums, cabbage, cauliflower, broccoli, brussels sprouts, carrots and tomatoes.	-
Rhizoctonia Root Rot (*Rhizoctonia* spp.) **Priority: Low**							
Rated as a low priority in olives. Rhizoctonia Root Rot is a soil-borne disease which can impact new established trees in poorly drained sites. Judicious use of irrigation and maintaining good soil drainage will assist with reducing the impact of Rhizoctonia. Fungicides used for protection of seedlings from Phytophthora and Pythium will also provide control of Rhizoctonia.							
Chloropicrin + 1,3-Dichloropropene (Telone C-35)	8B	Soil Fumigant	NR	A	ALL	Registered as a soil fumigant prior to planting for control of soil-borne diseases (including *Fusarium* & *Verticillium Wilts*, *Rhizoctonia*, *Pythium*). Restricted chemical. ***For use by professional and registered fumigators only.***	-
Streptomyces lydicus (Actinovate) Novozymes BioAg	BM02	Biological	NR	P-A	ALL	Registered in all crops as a biological soil amendment to stimulate soil organisms to make nutrients more available for plant growth.	-

Disease / Active Ingredient (Trade Name)	Chemical group	Activity	WHP, days	Availability	States	Comments	Regulatory risk
Acibenzolar-S-Methyl (Actigard Plant Activator) Syngenta	P01	Protectant		P		Registered in tomatoes for the suppression of Bacterial Speck, Bacterial Spot, Bacterial Canker and Powdery Mildew. US registration (Bion) for control of Damping Off caused by *Rhizoctonia solani*, *Pythium* and *Fusarium* sp. in cotton.	-
Tolclofos-Methyl (Rizolex) Sumitomo	14	Protectant		P		Registered for control of ***Rhizoctonia* spp.** in cotton, beetroot and potatoes.	-
Fruit Rots (*Botryosphaeria* spp., *Alternaria* spp., *Coleophoma oleae*) **Priority: Low**							
Rated as a low priority in olives. Fruit damaged by weather or mechanical means can be susceptible to infection. Anthracnose can also provide a source of infection if not effectively controlled in crop. Post-Harvest sanitation is an important measure to control infections.							
Bromo Chloro Dimethyl Hydatoin (BCDMH)	-	Sanitiser / Post-Harvest Treatment	NR	A	ALL	Registered in fruit & vegetables for control of bacteria and fungi by post-harvest surface sterilisation of fruit using spray or dip. Minimum contact 60 seconds.	-
Chlorine	-	Sanitiser / Post-Harvest Treatment	NR	A	ALL	Registered in fruit & vegetables for control of bacteria and fungi as a post-harvest spray. Minimum contact 30 seconds.	-
Iodine	-	Sanitiser	NR	A	ALL	Registered in other fruits (smooth skinned) for sanitation of post-harvest decay and diseases. Dip fruit for a minimum of 1 minute.	-
Bacillus amyloliquefaciens Strain QST 713 (Serenade Opti) Bayer	BM02	Biological	NR	P		Registered for control of Anthracnose and suppression of Stem End Rot (*Botryosphaeria* spp.) in avocado and mango. US registration for control of Bot Rot (***Botryosphaeria dothidea***) in pome fruit.	-

Disease / Active Ingredient (Trade Name)	Chemical group	Activity	WHP, days	Availability	States	Comments	Regulatory risk
Pydiflumetofen + Fludioxonil (Miravis Prime) Syngenta	7+12	Protectant / Curative		P		Registered for control of Botrytis in berries, dried grapes, table grapes, wine grapes and strawberries, and for control of Botrytis and Sclerotinia in leafy vegetables, lettuce and potato. US registration for control of **Botryosphaeria Blight** (*Botryosphaeria* spp.) in pistachio.	R3
Mefentrifluconazole (Belanty) BASF	3	Protectant & Curative		P		Registered for control of Powdery Mildew in grapes, control of Black Spot and Powdery Mildew and suppression of Alternaria in apples, control of Blossom Blight and suppression of Leaf Rust, Shot Hole and Hull Rot in almonds, control of Husk Spot in macadamias, control of Powdery Mildew and Gummy Stem Blight in cucurbits, and control of Powdery Mildew and Target Spot in fruiting vegetables. US registration for control of Panicle and Shoot Blight (***Botryosphaeria dothidea***) in tree nuts, and Black Rot (***Botryosphaeria obtusa***) and White Rot (***Botryosphaeria dothidea***) in pome fruit.	-
Charcoal Root Rot (*Macrophomina phaseolina*) **Priority: Low**							
Rated as a low priority in olives. Charcoal Rot is a soil-borne disease with low incidence in Australia.							
Chloropicrin + 1,3-Dichloropropene (Telone C-35)	8B	Soil Fumigant	NR	A	ALL	Registered as a soil fumigant prior to planting for control of soil-borne diseases (including *Fusarium* & *Verticillium Wilts*, *Rhizoctonia*, *Pythium*). Restricted chemical. ***For use by professional and registered fumigators only.***	-
Streptomyces lydicus (Actinovate) Novozymes BioAg	BM02	Biological	NR	P-A	ALL	Registered in all crops as a biological soil amendment to stimulate soil organisms to make nutrients more available for plant growth.	-

Disease / Active Ingredient (Trade Name)	Chemical group	Activity	WHP, days	Availability	States	Comments	Regulatory risk
Stem Cankers (*Botryosphaeria* spp.) **Priority: Low**							
Rated as a low priority in olives. Occasionally found on tree branches, causing yellowing of foliage above the affected area. Avoidance of pruning wounds and removal of affected wood are the only control measures available.							
Bacillus amyloliquefaciens Strain QST 713 (Serenade Opti) Bayer	BM02	Biological	NR	P		Registered for control of Anthracnose and suppression of Stem End Rot (*Botryosphaeria* spp.) in avocado and mango. US registration for control of Bot Rot (***Botryosphaeria dothidea***) in pome fruit.	-
Pydiflumetofen + Fludioxonil (Miravis Prime) Syngenta	7+12	Protectant / Curative		P		Registered for control of Botrytis in berries, dried grapes, table grapes, wine grapes and strawberries, and for control of Botrytis and Sclerotinia in leafy vegetables, lettuce and potato. US registration for control of **Botryosphaeria Blight** (*Botryosphaeria* spp.) in pistachio.	R3
Mefentrifluconazole (Belanty) BASF	3	Protectant & Curative		P		Registered for control of Powdery Mildew in grapes, control of Black Spot and Powdery Mildew and suppression of Alternaria in apples, control of Blossom Blight and suppression of Leaf Rust, Shot Hole and Hull Rot in almonds, control of Husk Spot in macadamias, control of Powdery Mildew and Gummy Stem Blight in cucurbits, and control of Powdery Mildew and Target Spot in fruiting vegetables. US registration for control of Panicle and Shoot Blight (***Botryosphaeria dothidea***) in tree nuts, and Black Rot (***Botryosphaeria obtusa***) and White Rot (***Botryosphaeria dothidea***) in pome fruit.	-
Fusarium Root Rot (*Fusarium* spp.) **Priority: Low**							
Rated as a low priority in olives. Fusarium Root Rot is a soil-borne disease with low incidence in Australia. The pathogen can remain in the soil for many years so emphasis should be on ensuring that infected material is not introduced to the farm.							
Chloropicrin + 1,3-Dichloropropene (Telone C-35)	8B	Soil Fumigant	NR	A	ALL	Registered as a soil fumigant prior to planting for control of soil-borne diseases (including *Fusarium* & *Verticillium Wilts*, *Rhizoctonia*, *Pythium*). Restricted chemical. ***For use by professional and registered fumigators only.***	-

Disease / Active Ingredient (Trade Name)	Chemical group	Activity	WHP, days	Availability	States	Comments	Regulatory risk
Streptomyces lydicus (Actinovate) Novozymes BioAg	BM02	Biological	NR	P-A	ALL	Registered in all crops as a biological soil amendment to stimulate soil organisms to make nutrients more available for plant growth.	-
Green and Blue Moulds (*Penicillium* spp.) **Priority: Low**							
Rated as a low priority in olives. Green and Blue Moulds can cause spoilage of table olives by affecting appearance and producing mycotoxins which make them unsafe to eat. Post-Harvest treatments will protect fruit from infection.							
Bromo Chloro Dimethyl Hydatoin (BCDMH)	-	Sanitiser / Post-Harvest Treatment	NR	A	ALL	Registered in fruit & vegetables for control of bacteria and fungi by post-harvest surface sterilisation of fruit using spray or dip. Minimum contact 60 seconds.	-
Chlorine	-	Sanitiser / Post-Harvest Treatment	NR	A	ALL	Registered in fruit & vegetables for control of bacteria and fungi as a post-harvest spray. Minimum contact 30 seconds.	-
Iodine	-	Sanitiser	NR	A	ALL	Registered in other fruits (smooth skinned) for sanitation of post-harvest decay and diseases. Dip fruit for a minimum of 1 minute.	-

4.2 Insect and other pests of Olive

4.2.1 Insect and other pest priorities

Insects and Other Pests	Priority
Olive Lace Bug (*Froggattia olivinia*)	H
Black Scale (*Saissetia oleae*)	M
Curculio Beetle / Apple Weevil (*Otiorhynchus cribricollis*)	M
Armoured Scales (Diaspididae)	L
Olive Bud Mite (*Oxycenus maxwelli*)	L
Plague Thrips (*Thrips imaginis*)	L
Western Flower Thrips (*Frankliniella occidentalis*)	L
Rutherglen Bug (*Nysius vinitor*)	L
Olive Fruit Caterpillar (*Cryptoblabes* spp.)	L
Garden Weevil (*Phlyctinus callosus*)	L
Root Knot Nematode (*Meloidogyne* spp.)	L
Citrus Nematode (*Tylenchulus semipenetrans*)	L
Root Lesion Nematode (*Pratylenchus* spp.)	L
African Black Beetle (*Heteronychus arator*)	L
Australian Plague Locusts (*Chortoicetes terminifera*)	L
Spur-Throated Locust (*Austracris guttulosa*)	L
Migratory Locust (*Locusta migratoria*)	L
Wingless Grasshopper (*Phaulacridium vittatum*)	L
Queensland Fruit Fly (*Bactrocera tryoni*)	L
Mediterranean Fruit Fly (*Ceratitis capitata*)	L
Green Vegetable Bug (*Nezara viridula*)	L
Light Brown Apple Moth (*Epiphyas postvittana*)	L
Cutworms (*Agrostis* spp.)	L
Slugs and Snails (Gastropoda)	L
Green Tree Ant (*Oecophylla smaragdina*)	L

Olive crops are impacted by a relatively small number insect and other pests, with Olive Lace Bug rated as a high priority pest. It is important to take an Integrated Pest Management (IPM) approach to pest control in olives. A range of control measures should be used, including cultural controls, biological controls and insecticides. Beneficial insects such as predators, parasitoids and pollinators should be encouraged and can be introduced artificially if required. Insecticide choice should be made with regard to preserving the beneficial insects that play an important role in the crop.

The diverse range of insect and mite pests in olives necessitates careful planning with resistance management. Growers should refer to resistance management strategies listed on the CropLife website[6] when planning their pest management programs.

[6] https://www.croplife.org.au/resources/programs/resistance-management/

4.2.2 Available and potential products for priority insects and other pests

TABLE KEY: Note that blank fields in the table indicate no information has been provided.

Availability		Regulatory risk (refer to Appendix 7)	
A	Available via either registration or permit approval	R1	Short-term: Critical concern over retaining access
P	Potential - a possible candidate to pursue for registration or permit	R2	Medium-term: Maintaining access of significant concern
P-A	Potential, already approved in the crop for another use	R3	Long-term: Potential issues associated with use - Monitoring required
Withholding Period (WHP) – Number of days from last treatment to harvest (H) or Grazing (G)			
Harvest	H	Not Required when used as directed	NR
Grazing	G	No Grazing Permitted	NG
IPM – indicative overall impact on beneficials (based on the Cotton Pest Management Guide 2019-20 and cotton use patterns)			
VL – Very low; L – Low; M – Moderate; H – High; VH – Very High; - not specified			

Pest / Active Ingredient (Trade Name)	Chemical group	Activity	WHP, days	Availability	States	Comments	Impact on beneficials	Regulatory risk
Olive Lace Bug (*Froggattia olivinia*) **Priority: High**								
Rated as a high priority in olives. Olive Lace Bug is a widespread pest that feeds on the underside of leaves. Severe infestations can cause significant defoliation of trees leading to reduced fruit yield. Can be present throughout the whole growing season and regular control is required based on pest incidence.								
Acetamiprid + Pyriproxyfen (Trivor) Adama PER89943	4A+7C	Contact & Ingestion	28 NG	A	ALL (excl. VIC)	Permitted in olives for control of **Olive Lace Bug** (*Froggattia olivinia*) and Scale Insects (Coccoidea). Apply as a foliar spray when numbers exceed local threshold. Use a minimum retreatment interval of 14 days. Maximum of 2 applications per season.	M Bee:H	R2
Clothianidin (Samurai) PER14897	4A	Contact & Ingestion	56 NG	A	ALL (excl. VIC)	Permitted in olives for control of **Olive Lace Bug** (*Froggattia olivinia*). Apply as a foliar spray when pest is first noticed and is still at the nymphal stage. Maximum of 1 application per season.	M Bee:VH	R2
Dimethoate PER13999	1B	Contact	42 NG	A	ALL (excl. VIC)	Permitted in olives (oil production only) for control of **Olive Lace Bug** (*Froggattia olivinia*), Green Vegetable Bug (*Nezara viridula*) and Rutherglen Bug (*Nysius vinitor*). Apply as a foliar spray when insects are first noticed and whilst still in the nymphal stage. Retreatment interval not specified. Maximum of 4 applications per season.	H Bee:H	R2

Pest / Active Ingredient (Trade Name)	Chemical group	Activity	WHP, days	Availability	States	Comments	Impact on beneficials	Regulatory risk
Esfenvalerate (Sumi-Alpha)	3A	Contact	14 NG	A	ALL	Registered in olives for control of **Olive Lace Bug** (*Froggattia olivinia*). Apply as a foliar spray at first sign of infestation and while pest is still in the nymphal stage. Retreatment interval not specified. Maximum of 4 applications per season.	VH Bee:H	-
Flupyradifurone (Sivanto Prime) Bayer	4D	Contact & Ingestion	14 NG	A	ALL	Registered in olives for control of **Olive Lace Bug** and Black Scale. Apply as a foliar spray once local thresholds have been reached. Use a minimum retreatment interval of 60 days. Maximum of 2 applications per season.	L Bee:L	-
Potassium Salts of Fatty Acid (Natrasoap) PER14414	-	Contact	NR	A	ALL (excl. VIC)	Permitted in olives for control of **Lace Bug** (*Froggattia olivinia*). Apply as a foliar spray aiming to treat the first nymph instars just prior to the oldest nymphs developing wings. Apply a second spray 7-10 days after the initial treatment. Maximum number of treatments not specified.	L Bee:L	-
Pyrethrins (Pyganic) PER81870	3A	Contact	1	A	ALL	Permitted in olives for control of **Olive Lace Bug** (*Froggattia olivinia*). Apply as a foliar spray when damaging levels of the pest occur. Use a minimum retreatment interval of 14 days. Maximum of 6 applications per season.	VH Bee:H	-
Isocycloseram (Simodis) Syngenta	30	Ingestion		P		Registered for control of Diamond Back Moth, Cabbage White Butterfly and suppression of Heliothis in brassica vegetables and brassica leafy vegetables, suppression of Onion Thrips and Plague Thrips in bulb vegetables, control of Two Spotted Mite and Cucumber Moth and suppression of Broad Mite, Bean Red Spider Mite, Western Flower Thrips, Tomato Thrips, Melon Thrips, Plague Thrips and Heliothis in cucurbits, and control of Two Spotted Mite and Broad Mite and suppression of Tomato Russet Mite, Western Flower Thrips, Tomato Thrips, Melon Thrips, Plague Thrips and Heliothis in fruiting vegetables. No current registrations for control of Hemiptera but there is international research that indicates some activity on bug species.	H Bee:VH	-

Pest / Active Ingredient (Trade Name)	Chemical group	Activity	WHP, days	Availability	States	Comments	Impact on beneficials	Regulatory risk
Sulfoxaflor (Transform) Corteva	4C	Ingestion & Contact		P		Registered for control of Rutherglen Bug in cucurbits, fruiting vegetables, leafy vegetables, root & tuber vegetables, brassica vegetables, cane berries and strawberries, and for control of Fruit Spotting Bugs in assorted tropical & sub-tropical fruits (inedible peel), avocado, citrus, macadamia and persimmons.	M Bee:H	-
Black Scale (*Saissetia oleae*) **Priority: Moderate**								
Rated as a moderate priority in olives. Several species of scale can infest olives but Black Scale is the most significant. It is present in all growing regions. They excrete honeydew which promotes development of sooty mould on leaves, branches and fruit. This can lead to reduced fruit yields and quality.								
Acetamiprid + Pyriproxyfen (Trivor) Adama PER89943	4A+7C	Contact & Ingestion	28 NG	A	ALL (excl. VIC)	Permitted in olives for control of Olive Lace Bug (*Froggattia olivinia*) and **Scale Insects** (Coccoidea). Apply as a foliar spray when numbers exceed local threshold. Use a minimum retreatment interval of 14 days. Maximum of 2 applications per season.	M Bee:H	R2
Botanical Oil (Eco-Oil)	-	Contact	NR	A	ALL	Registered in olive trees for control of **Black Scale**. Apply as a foliar spray at onset of crawler release. Apply consecutive applications using a retreatment interval of 7 days. Repeat as necessary based on reinfestation. Maximum number of treatments per season not specified.	L Bee:L	-
Fenoxycarb (Insegar)	7B	Contact & Ingestion	56	A	ALL	Registered in olives for control of **Black Scale** (*Saissetia oleae*). Apply as a foliar spray, starting when scale hatchings are at 75%, and the second application when hatchings are at 100%. Use a minimum retreatment interval of 10 days. Maximum of 2 applications per season.	L Bee:VL	-
Flupyradifurone (Sivanto Prime) Bayer	4D	Contact & Ingestion	14 NG	A	ALL	Registered in olives for control of Olive Lace Bug and **Black Scale**. Apply as a foliar spray once local thresholds have been reached. Use a minimum retreatment interval of 60 days. Maximum of 2 applications per season.	L Bee:L	-

Pest / Active Ingredient (Trade Name)	Chemical group	Activity	WHP, days	Availability	States	Comments	Impact on beneficials	Regulatory risk
Petroleum Oil	-	Contact	NR	A	ALL	Registered in olives for control of **Black Scale**, Olive Scale and California Red Scale. Apply as a foliar spray when pest is present. Do not spray in winter. Retreatment interval and maximum number of applications per season not specified.	L Bee:L	-
Pyriproxyfen (Admiral)	7C	Ingestion / IGR	7 NG	A	ALL	Registered in olive for control of **Black Scale** (*Saissetia oleae*). Apply as a foliar spray at the time of crawler release, usually December to January but may also occur in autumn. Retreatment interval not specified. Maximum of 2 applications per season.	VL Bee:L	-
Pyriproxyfen + Piperonyl Butoxide (Patriarch RMR) Imtrade	7C	Ingestion / IGR	7 NG	A	ALL	Registered in olive for control of **Black Scale** (*Saissetia oleae*). Apply as a foliar spray at the time of crawler release, usually December to January but may also occur in autumn. Retreatment interval not specified. Maximum of 2 applications per season.	VL Bee:L	-
Buprofezin (Applaud)	16	Ingestion		P		Registered for control of **Scale Insects** in citrus, custard apples, grapes, mangoes, passionfruit and persimmons.	L Bee:L	-
Spirotetramat (Movento) Bayer	23	Ingestion		P		Registered for control of **Scale Insects** in blueberries, citrus, grapes, mangoes, passionfruit, pome fruit and stone fruit.	M Bee:L	-
Sulfoxaflor (Transform) Corteva	4C	Ingestion & Contact		P		Registered for control of **Scale Insects** in cane berries, citrus, lychees, macadamia, mango, papaya, passionfruit, persimmon, pome fruit and nursery stock.	M Bee:H	-
Curculio Beetle / Apple Weevil (*Otiorhynchus cribricollis*) **Priority: Moderate**								
Rated as a moderate priority in olives. Severe infestations of adults can damage growing tips, especially in young trees. The larvae are soil-dwelling and may damage the plant roots. An alternative to insecticide butt treatment is the use of a sticky or fibrous barrier applied to the tree trunk.								
Alpha-Cypermethrin PER14791	3A	Contact	NR NG	A	ALL (excl. VIC)	Permitted in olives for control of **Curculio Beetle** / **Apple Weevil** (*Otiorhynchus cribicollis*) and Cutworms (*Agrostis* spp.) Drench spray to the butts of trees and ground around the butt. Retreatment interval not specified. Maximum of 2 applications per season to trees that are of fruit-bearing age.	VH Bee:H	-
Indoxacarb (Avatar)	22A	Ingestion		P		Registered for control of various weevils in asparagus, celery, pome fruit, stone fruit, strawberries, grape and macadamia.	M Bee:H	R3

Pest / Active Ingredient (Trade Name)	Chemical group	Activity	WHP, days	Availability	States	Comments	Impact on beneficials	Regulatory risk
Tetraniliprole (Vayego) Bayer	28	Ingestion		P		Registered for control of various weevils and beetles in almonds, macadamias, pome and stone fruit.	L-M Bee:VH	-
Armoured Scales (Diaspididae) **Priority: Low**								
Rated as a low priority in olives. Several species of scale can infest olives with Armoured Scales causing less impact than Black Scale. No honeydew or sooty mould occurs. Can cause fruit marking and scale-encrusted fruit. No specific control measures available but options to control Black Scale will provide control of Armoured Scale if present.								
Acetamiprid + Pyriproxyfen (Trivor) Adama PER89943	4A+7C	Contact & Ingestion	28 NG	A	ALL (excl. VIC)	Permitted in olives for control of Olive Lace Bug (*Froggattia olivinia*) and **Scale Insects** (Coccoidea). Apply as a foliar spray when numbers exceed local threshold. Use a minimum retreatment interval of 14 days. Maximum of 2 applications per season.	M Bee:H	R2
Botanical Oil (Eco-Oil)	-	Contact	NR	P-A	ALL	Registered in olive trees for control of Black Scale.	L Bee:L	-
Fenoxycarb (Insegar)	7B	Contact & Ingestion	56	P-A	ALL	Registered in olives for control of Black Scale (*Saissetia oleae*).	L Bee:VL	-
Flupyradifurone (Sivanto Prime) Bayer	4D	Contact & Ingestion	14 NG	P-A	ALL	Registered in olives for control of Olive Lace Bug and Black Scale.	L Bee:L	-
Petroleum Oil	-	Contact	NR	P-A	ALL	Registered in olives for control of Black Scale, Olive Scale and California Red Scale.	L Bee:L	-
Pyriproxyfen (Admiral)	7C	Ingestion / IGR	7 NG	P-A	ALL	Registered in olive for control of Black Scale (*Saissetia oleae*).	VL Bee:L	-
Pyriproxyfen + Piperonyl Butoxide (Patriarch RMR) Imtrade	7C	Ingestion / IGR	7 NG	P-A	ALL	Registered in olive for control of Black Scale (*Saissetia oleae*).	VL Bee:L	-
Buprofezin (Applaud)	16	Ingestion		P		Registered for control of **Scale Insects** in citrus, custard apples, grapes, mangoes, passionfruit and persimmons.	L Bee:L	-

Pest / Active Ingredient (Trade Name)	Chemical group	Activity	WHP, days	Availability	States	Comments	Impact on beneficials	Regulatory risk
Spirotetramat (Movento) Bayer	23	Ingestion		P		Registered for control of **Scale Insects** in blueberries, citrus, grapes, mangoes, passionfruit, pome fruit and stone fruit.	M Bee:L	-
Sulfoxaflor (Transform) Corteva	4C	Ingestion & Contact		P		Registered for control of **Scale Insects** in cane berries, citrus, lychees, macadamia, mango, papaya, passionfruit, persimmon, pome fruit and nursery stock.	M Bee:H	-
Olive Bud Mite (*Oxycenus maxwelli*) **Priority: Low**								
Rated as a low priority in olives. Olive Bud Mite feed on developing buds, shoots and leaves, causing malformations and shortening of internodes between young leaves.								
Petroleum Oil	-	Contact	NR	P-A	ALL	Registered in olives for control of Black Scale, Olive Scale and California Red Scale. Registered for control of **Mites** in apples, pears, apricots, cherries, almonds, peaches, nectarines, plums, prunes, pecans and ornamentals.	L Bee:L	-
Potassium Salts of Fatty Acid (Natrasoap)	-	Contact	NR	P-A	ALL	Registered in fruit for control of Aphids, Thrips, Mealybug, Two-Spotted Mite, Spider Mite and Whitefly.	L Bee:L	-
Abamectin	6	Ingestion		P		Registered for control of mites in apples, pears, avocados, blackcurrants, blackberries, raspberries, citrus, cucumber, squash, zucchini, spring onions, shallots, snow peas, sugar snap peas, sweet corn, fruiting vegetables, custard apple, duboisia, hops, lettuce, lychees, mushrooms, ornamentals, papaya / pawpaw, passionfruit, rhubarb and strawberries.	M Bee:H	-
Bifenazate (Acramite)	20D	Contact & Ingestion		P		Registered for control of mites in apples, pears, apricots, nectarines, peaches, plums, almonds, fruiting vegetables, cucurbits, papaya and strawberries.	L Bee:H	-
Etoxazole (Paramite)	10B	IGR / Contact		P		Registered for control of mites in pome fruit, stone fruit (except cherries), almonds, table grapes, wine grapes, citrus, tomatoes, capsicum, bananas and turf.	L Bee:VL	-
Fenbutatin Oxide (Torque)	12	Contact		P		Registered for control of mites in apples, pears, peaches, nectarines, hops, avocados, bananas, citrus, strawberries and ornamentals.	L Bee:L	R2

Pest / Active Ingredient (Trade Name)	Chemical group	Activity	WHP, days	Availability	States	Comments	Impact on beneficials	Regulatory risk
Acequinocyl (Kanemite) UPL	20B	Contact & Ingestion		P		Registered for control of mites in pome fruit and stone fruit.	L Bee:L	-
Cyflumetofen (Danisaraba) BASF	25A	Contact		P		Registered for control of mites in pome fruit, almond, citrus, grapes, strawberries, fruiting vegetables and ornamentals.	L Bee:L	-
Hexythiazox (Calibre)	10A	IGR / Contact		P		Registered for control of mites in apples, pears, stone fruit, strawberries and ornamentals.	L Bee:L	-
Isocycloseram (Simodis) Syngenta	30	Ingestion		P		Registered for control of Diamond Back Moth, Cabbage White Butterfly and suppression of Heliothis in brassica vegetables and brassica leafy vegetables, suppression of Onion Thrips and Plague Thrips in bulb vegetables, control of Two Spotted Mite and Cucumber Moth and suppression of Broad Mite, Bean Red Spider Mite, Western Flower Thrips, Tomato Thrips, Melon Thrips, Plague Thrips and Heliothis in cucurbits, and control of Two Spotted Mite and Broad Mite and suppression of Tomato Russet Mite, Western Flower Thrips, Tomato Thrips, Melon Thrips, Plague Thrips and Heliothis in fruiting vegetables. No current registrations for control of Hemiptera but there is international research that indicates some activity on bug species.	H Bee:VH	-
Magnesium Hydroxide (Magnera) UPL	-	Contact		P		Registered for suppression of Two-Spotted Mite in tomatoes and cucurbits.	L Bee:L	-
Propargite	12C	Contact		P		Registered for control of mites in stone fruit, apples, pears, strawberries, bananas, passionfruit, beans, tomatoes & other vegetables, hops and ornamentals.	M Bee:L	R3
Spiromesifen (Interrupt) Bayer	23	Ingestion		P		Registered for control of Two Spotted Mite in pome fruit and stone fruit.	M Bee:VL	-

Pest / Active Ingredient (Trade Name)	Chemical group	Activity	WHP, days	Availability	States	Comments	Impact on beneficials	Regulatory risk
Plague Thrips (*Thrips imaginis*) **Western Flower Thrips** (*Frankliniella occidentalis*) **Priority: Low**								
Rated as a low priority in olives. Nymphs and adults feed on flowers which can lead to deformities in the fruit.								
Potassium Salts of Fatty Acid (Natrasoap)	-	Contact	NR	A	ALL	Registered in fruit for control of Aphids, **Thrips**, Mealybug, Two-Spotted Mite, Spider Mite and Whitefly. Apply as a cover spray. Retreatment interval and maximum number of treatments not specified.	L Bee:L	-
Acetamiprid + Pyriproxyfen (Trivor) Adama PER89943	4A+7C	Contact & Ingestion	28 NG	P-A	ALL (excl. VIC)	Permitted in olives for control of Olive Lace Bug (*Froggattia olivinia*) and Scale Insects (Coccoidea). Registered for control of Kelly's Citrus Thrips in citrus.	M Bee:H	R2
Beauveria bassiana (Velifer) BASF	UN			P		Registered for suppression of Onion Thrips and Western Flower Thrips in protected vegetables and ornamentals.	L Bee:L	-
Cyantraniliprole (Benevia) FMC	28	Ingestion		P		Registered for suppression of thrips in bulb vegetables, fruiting vegetables, cucurbits, potatoes and strawberries.	L-M Bee:VH	-
Flonicamid (Mainman) UPL	29	Ingestion		P		Registered for suppression of thrips in nursery stock.	M Bee:VL	-

Pest / Active Ingredient (Trade Name)	Chemical group	Activity	WHP, days	Availability	States	Comments	Impact on beneficials	Regulatory risk
Isocycloseram (Simodis) Syngenta	30	Ingestion		P		Registered for control of Diamond Back Moth, Cabbage White Butterfly and suppression of Heliothis in brassica vegetables and brassica leafy vegetables, suppression of Onion Thrips and Plague Thrips in bulb vegetables, control of Two Spotted Mite and Cucumber Moth and suppression of Broad Mite, Bean Red Spider Mite, Western Flower Thrips, Tomato Thrips, Melon Thrips, Plague Thrips and Heliothis in cucurbits, and control of Two Spotted Mite and Broad Mite and suppression of Tomato Russet Mite, Western Flower Thrips, Tomato Thrips, Melon Thrips, Plague Thrips and Heliothis in fruiting vegetables. No current registrations for control of Hemiptera but there is international research that indicates some activity on bug species.	H Bee:VH	-
Spinetoram (Success Neo) Corteva	5	Contact & Ingestion		P		Registered for control of thrips in brassica vegetables, bulb vegetables, cucurbits, fruiting vegetables, leafy vegetables, legume vegetables and ornamentals.	M Bee:VH	-
Spinosad (Entrust Organic) Corteva	5	Contact & Ingestion		P		Registered for control of thrips in banana, brassica vegetables, bulb vegetables, cucurbits, fruiting vegetables, leafy vegetables, legume vegetables, ornamentals, berryfruit, pome fruit and stone fruit.	L Bee:H	-
Spirotetramat (Movento) Bayer	23	Ingestion		P		Registered for control of thrips in green beans, celery, rhubarb, eggplant, peppers, tomatoes, herbs, lettuce, bulb onions, bulb vegetables, citrus and grapes.	M Bee:L	-
Sulfoxaflor (Transform) Corteva	4C	Ingestion & Contact		P		Registered for control of Kelly's Citrus Thrips in citrus.	M Bee:H	-

Pest / Active Ingredient (Trade Name)	Chemical group	Activity	WHP, days	Availability	States	Comments	Impact on beneficials	Regulatory risk
Rutherglen Bug (*Nysius vinitor*) **Priority: Low**								
Rated as a low priority in olives. Rutherglen Bug are a sporadic pest that can cause direct feeding damage to leaves and twigs, particularly in younger trees. The canopy on larger trees is generally higher than the bugs will travel.								
Dimethoate PER13999	1B	Contact	42 NG	A	ALL (excl. VIC)	Permitted in olives (oil production only) for control of Olive Lace Bug (*Froggattia olivinia*), Green Vegetable Bug (*Nezara viridula*) and **Rutherglen Bug** (*Nysius vinitor*). Apply as a foliar spray when insects are first noticed and whilst still in the nymphal stage. Retreatment interval not specified. Maximum of 4 applications per season.	H Bee:H	R2
Acetamiprid + Pyriproxyfen (Trivor) Adama PER89943	4A+7C	Contact & Ingestion	28 NG	P-A	ALL (excl. VIC)	Permitted in olives for control of Olive Lace Bug (*Froggattia olivinia*) and Scale Insects (Coccoidea).	M Bee:H	R2
Clothianidin (Samurai) PER14897	4A	Contact & Ingestion	56 NG	P-A	ALL (excl. VIC)	Permitted in olives for control of Olive Lace Bug (*Froggattia olivinia*).	M Bee:VH	R2
Esfenvalerate (Sumi-Alpha)	3A	Contact	14 NG	P-A	ALL	Registered in olives for control of Olive Lace Bug (*Froggattia olivinia*).	VH Bee:H	-
Flupyradifurone (Sivanto Prime) Bayer	4D	Contact & Ingestion	14 NG	P-A	ALL	Registered in olives for control of Olive Lace Bug and Black Scale.	L Bee:L	-
Potassium Salts of Fatty Acid (Natrasoap) PER14414	-	Contact	NR	P-A	ALL (excl. VIC)	Permitted in olives for control of Lace Bug (*Froggattia olivinia*).	L Bee:L	-
Pyrethrins (Pyganic) PER81870	3A	Contact	1	P-A	ALL	Permitted in olives for control of Olive Lace Bug (*Froggattia olivinia*).	VH Bee:H	-

Pest / Active Ingredient (Trade Name)	Chemical group	Activity	WHP, days	Availability	States	Comments	Impact on beneficials	Regulatory risk
Isocycloseram (Simodis) Syngenta	30	Ingestion		P		Registered for control of Diamond Back Moth, Cabbage White Butterfly and suppression of Heliothis in brassica vegetables and brassica leafy vegetables, suppression of Onion Thrips and Plague Thrips in bulb vegetables, control of Two Spotted Mite and Cucumber Moth and suppression of Broad Mite, Bean Red Spider Mite, Western Flower Thrips, Tomato Thrips, Melon Thrips, Plague Thrips and Heliothis in cucurbits, and control of Two Spotted Mite and Broad Mite and suppression of Tomato Russet Mite, Western Flower Thrips, Tomato Thrips, Melon Thrips, Plague Thrips and Heliothis in fruiting vegetables. No current registrations for control of Hemiptera but there is international research that indicates some activity on bug species.	H Bee:VH	-
Sulfoxaflor (Transform) Corteva	4C	Ingestion & Contact		P		Registered for control of Rutherglen Bug in cucurbits, fruiting vegetables, leafy vegetables, root & tuber vegetables, brassica vegetables, cane berries and strawberries, and for control of Fruit Spotting Bugs in assorted tropical & sub-tropical fruits (inedible peel), avocado, citrus, macadamia and persimmons.	M Bee:H	-
Olive Fruit Caterpillar (*Cryptoblabes* spp.) **Priority: Low**								
Rated as a low priority in olives. Olive Fruit Caterpillar are thought to be a problem in olive groves adjacent to cereal crops. Larvae cause direct feeding damage to the fruit.								
Bacillus thuringiensis subsp Kurstaki Strain HD-1 (DiPel)	11	Biological / Ingestion	NR	P-A	ALL	Registered in fruit for control of Armyworm (*Spodoptera* spp.), Cotton Bollworm (*Helicoverpa armigera*), Native Budworm (*Helicoverpa punctigera*), Cabbage Moth (*Plutella xylostella*), Cabbage White Butterfly (*Pieris rapae*), Green Looper (*Chrysodeixis eriosoma*), Light Brown Apple Moth (*Epiphyas postvittana*), Pear Looper (*Ectropis excursaria*), Soybean Looper (*Thysanoplusia orichalcea*), Vine Moth (*Phalaenoides glycinae*, *Agarista agricola*) and Tobacco Looper (*Chrysodeixis argentifera*).	VL Bee:VL	-

Pest / Active Ingredient (Trade Name)	Chemical group	Activity	WHP, days	Availability	States	Comments	Impact on beneficials	Regulatory risk
Chlorantraniliprole (Coragen) FMC	28	Ingestion		P		Registered for control of various lepidoptera in brassica vegetables, brassica leafy vegetables, stalk & stem vegetables, leafy vegetables, lettuce, fruiting vegetables, cucurbits, legume vegetables, potatoes, strawberries and sweet corn.	L Bee:VL	-
Emamectin (Proclaim) Syngenta	6	Ingestion		P		Registered for control of various lepidoptera in brassica vegetables, root & tuber vegetables (except potato), leafy vegetables and brassica leafy vegetables (except lettuce), sweet corn, strawberries, lettuce, cucurbits, legume vegetables, fruiting vegetables and grapes.	M Bee:H	-
Indoxacarb (Avatar)	22A	Ingestion		P		Registered for control of various lepidoptera in brassica vegetables, leafy vegetables, fruiting vegetables, celery, cucurbits, sweet corn, blueberries, rubus, pome fruit, stone fruit and grapes.	M Bee:H	R3
Isocycloseram (Simodis) Syngenta	30	Ingestion		P		Registered for control of various lepidoptera in brassica vegetables, brassica leafy vegetables, cucurbits and fruiting vegetables.	H Bee:VH	-
Methoxyfenozide (Prodigy) Corteva	18	Ingestion		P		Registered for control of various lepidoptera in almonds, pome fruit, avocado, blueberry, citrus, coffee, custard apple, grapevines, kiwifruit, longan, lychee, macadamia, tomatoes, peppers, eggplant and okra.	VL Bee:VL	-
Spinetoram (Success Neo) Corteva	5	Ingestion		P		Registered for control of various lepidoptera in brassica vegetables, bulb vegetables, cucurbits, culinary herbs, fruiting vegetables, leafy vegetables, legume vegetables, root & tuber vegetables, stalk & stem vegetables, sweet corn, ornamentals, avocados, bananas, berryfruit, carob, cocoa, citrus, coffee, kiwifruit, mango, tropical & sub-tropical fruit (inedible peel), macadamias and pistachios.	M Bee:VH	-
Spinosad (Entrust Organic) Corteva	5	Ingestion		P		Registered for control of various lepidoptera in banana, brassica vegetables, cucurbits, culinary herbs, fruiting vegetables, leafy vegetables, legume vegetables, root & tuber vegetables, stalk & stem vegetables, sweet corn, ornamentals, avocados, berryfruit, citrus, coffee, grapes, kiwifruit, mango, pome fruit, stone fruit and tropical & sub-tropical fruit (inedible peel).	L Bee:H	-

Pest / Active Ingredient (Trade Name)	Chemical group	Activity	WHP, days	Availability	States	Comments	Impact on beneficials	Regulatory risk
Tebufenozide (Mimic) Corteva	16A	Ingestion		P		Registered for control of various lepidoptera in apples, pears, avocado, citrus, custard apple, grapevines, kiwifruit, longan, lychee and macadamia.	L Bee:L	-
Garden Weevil (*Phlyctinus callosus*) **Priority: Low**								
Rated as a low priority in olives. Severe infestations of adults can damage growing tips, especially in young trees. The larvae are soil-dwelling and may damage the plant roots. An alternative to insecticide butt treatment is the use of a sticky or fibrous barrier applied to the tree trunk.								
Alpha-Cypermethrin PER14791	3A	Contact	NR NG	P-A	ALL (excl. VIC)	Permitted in olives for control of Curculio Beetle / Apple Weevil (*Otiorhynchus cribicollis*) and Cutworms (*Agrostis* spp.)	VH Bee:H	-
Indoxacarb (Avatar)	22A	Ingestion		P		Registered for control of various weevils in asparagus, celery, pome fruit, stone fruit, strawberries, grape and macadamia.	M Bee:H	R3
Tetraniliprole (Vayego) Bayer	28	Ingestion		P		Registered for control of various weevils and beetles in almonds, macadamias, pome and stone fruit.	L-M Bee:VH	-
Root Knot Nematode (*Meloidogyne* spp.) **Citrus Nematode** (*Tylenchulus semipenetrans*) **Root Lesion Nematode** (*Pratylenchus* spp.) **Priority: Low**								
Rated as a low priority in olives. Nematodes are soil-borne pests that feed on roots and reduce the efficiency of roots in foraging for water and nutrients. They do not usually impact on olive production, although they can damage young trees if present in large numbers.								
1,3-Dichloropropene	-	Soil Fumigant	NR	A	ALL	Registered as a soil fumigant prior to planting for control of plant-parasitic nematodes. Restricted chemical. ***For use by professional and registered fumigators only.***	-	-
Chloropicrin + 1,3-Dichloropropene (Telone C-35)	8B	Soil Fumigant	NR	A	ALL	Registered as a soil fumigant prior to planting for control of Plant Parasitic Nematodes, Symphylans and Wireworms. Restricted chemical. ***For use by professional and registered fumigators only.***	-	-
Abamectin (Tervigo) Syngenta	6	Contact		P		Registered for control of **Root Knot Nematode** in fruiting vegetables, cucurbits, potato and sweet potato.	M Bee:H	-

Pest / Active Ingredient (Trade Name)	Chemical group	Activity	WHP, days	Availability	States	Comments	Impact on beneficials	Regulatory risk
Cyclobutrifluram (Tymirium)	N-3	Contact		P		Nematicide in development from Syngenta.	-	-
Fluazaindolizine (Salibro Reklemel) Corteva	N-UN	Contact		P	ALL	Registered in for control of Nematodes in cucurbits, fruiting vegetables, root & tuber vegetables and sweet potato.	-	-
Fluensulfone (Nimitz) Adama	N-UN	Contact		P	ALL	Registered for control of **Root Knot Nematode** in cucurbits, fruiting vegetables, carrots, potato, sweet potato and sugarcane.	-	-
Fluopyram (Velum Prime) Bayer	N-3	Contact		P		Hort Innovation is generating data to support registration for control of nematodes in strawberries. US registration for control of Nematodes in brassica leafy vegetables, bulb vegetables, cucurbits, fruiting vegetables, hops, legume vegetables, pome fruit, potato, sweet potato, small berries, sorghum, stone fruit, strawberries and other low-growing berries, sunflower, tobacco and tree nuts.	-	-
African Black Beetle (*Heteronychus arator*) **Priority: Low**								
Rated as a low priority in olives. African Black Beetle is a soil-dwelling beetle that can cause significant damage to young trees. Larger trees can withstand feeding damage to roots and shoots.								
Chlorpyrifos PER14575	1B	Contact	NR /365[7] NG	A	ALL (excl. VIC)	Permitted in olives for control of Ants, **African Black Beetle** and Light Brown Apple Moth. Apply as a soil drench around the base of the tree. Retreatment interval not specified. Maximum of 2 applications per year to trees of fruit-bearing age.	H Bee:H	R1
Alpha-Cypermethrin PER14791	3A	Contact	NR NG	P-A	ALL (excl. VIC)	Permitted in olives for control of Curculio Beetle / Apple Weevil (*Otiorhynchus cribicollis*) and Cutworms (*Agrostis* spp.)	VH Bee:H	-
Indoxacarb (Avatar)	22A	Ingestion		P		Registered for control of various weevils in asparagus, celery, pome fruit, stone fruit, strawberries, grape and macadamia.	M Bee:H	R3
Tetraniliprole (Vayego) Bayer	28	Ingestion		P		Registered for control of various weevils and beetles in almonds, macadamias, pome and stone fruit.	L-M Bee:VH	-

[7] NR for ground treatment; 12 month harvest WHP for foliar application

Pest / Active Ingredient (Trade Name)	Chemical group	Activity	WHP, days	Availability	States	Comments	Impact on beneficials	Regulatory risk
Australian Plague Locust (*Chortoicetes terminifera*) **Spur-Throated Locust** (*Austracris guttulosa*) **Migratory Locust** (*Locusta migratoria*) **Wingless Grasshopper** (*Phaulacridium vittatum*) **Priority: Low**								
Rated as a low priority in olives. Locusts and grasshoppers can cause direct feeding damage to foliage, which requires urgent treatment in cases of locust swarms. Permits for pesticide use are normally issued in years of locust outbreaks.								
Fipronil (Regent) BASF	2B	Contact & Ingestion		P		Registered in swede and turnip for control of Diamondback Moth. Registered for control of **Locusts** in forestry plantations, pasture and sorghum.	M Bee:VH	R3
Queensland Fruit Fly (*Bactrocera tryoni*) **Mediterranean Fruit Fly** (*Ceratitis capitata*) **Priority: Low**								
Rated as a low priority in olives. Fruit Fly can cause direct damage to fruit. Eggs are laid and larvae develop in the fruit. Damaged fruit may prematurely ripen or fall.								
Dimethoate PER13859	1B	Contact	NR	A	ALL	Permitted in non-bearing fruit fly host crops for control of **Fruit Fly**. Apply as a foliar and/or ground cover spray to both fallen and retained fruit after final harvest. Do not use more than 2 applications per season.	H Bee:H	R2
Fipronil	2B	Lure	NR	A	ALL	Registered in fruit fly susceptible fruit crops as a lure for control of **Queensland Fruit Fly** (*Bactrocera tryoni*) and Lesser Queensland Fruit Fly (*Bactrocera neohumeralis*). Must be used in conjunction with other control methods. Commence placement of lures in field 6-8 weeks prior to stage at which crop becomes susceptible to attack.	M Bee:VH	R3
Maldison	1B	Bait / Contact	3	A	ALL	Registered in fruit trees as a bait for control of **Fruit Fly**. Apply as a coarse foliar, spot or strip spray throughout the orchard or in fruit fly hot spots. Do not apply directly to fruit. Use a retreatment interval of 7 days. Maximum number of applications per season not specified.	H Bee:H	R3

Pest / Active Ingredient (Trade Name)	Chemical group	Activity	WHP, days	Availability	States	Comments	Impact on beneficials	Regulatory risk
Spinosad (Naturalure) Corteva	5	Bait / Ingestion	NR	A	ALL	Registered in tree crops for control of Fruit Flies including **Queensland Fruit Fly** and Mediterranean Fruit Fly. Apply as either a band or a spot spray to the lower canopy of fruiting plants. Begin applications as soon as monitoring traps indicate flies are present and fruit is at a susceptible stage. Repeat applications every 7 days, re-applying sooner if rain washes off the deposit. Avoid spraying the fruit as phytotoxicity may occur.	L Bee:H	-
Acetamiprid + Pyriproxyfen (Trivor) Adama PER89943	4A+7C	Contact & Ingestion	28 NG	P-A	ALL (excl. VIC)	Permitted in olives for control of Olive Lace Bug (*Froggattia olivinia*) and Scale Insects (Coccoidea). Registered for control of **Fruit Fly** in avocados, citrus and mangoes.	M Bee:H	R2
Green Vegetable Bug (*Nezara viridula*) **Priority: Low**								
Rated as a low priority in olives. Green Vegetable Bug is a sporadic pest. Can cause feeding damage to fruit but this is rare in olives.								
Dimethoate PER13999	1B	Contact	42 NG	A	ALL (excl. VIC)	Permitted in olives (oil production only) for control of Olive Lace Bug (*Froggattia olivinia*), **Green Vegetable Bug** (*Nezara viridula*) and Rutherglen Bug (*Nysius vinitor*). Apply as a foliar spray when insects are first noticed and whilst still in the nymphal stage. Retreatment interval not specified. Maximum of 4 applications per season.	H Bee:H	R2
Acetamiprid + Pyriproxyfen (Trivor) Adama PER89943	4A+7C	Contact & Ingestion	28 NG	P-A	ALL (excl. VIC)	Permitted in olives for control of Olive Lace Bug (*Froggattia olivinia*) and Scale Insects (Coccoidea).	M Bee:H	R2
Clothianidin (Samurai) PER14897	4A	Contact & Ingestion	56 NG	P-A	ALL (excl. VIC)	Permitted in olives for control of Olive Lace Bug (*Froggattia olivinia*).	M Bee:VH	R2
Esfenvalerate (Sumi-Alpha)	3A	Contact	14 NG	P-A	ALL	Registered in olives for control of Olive Lace Bug (*Froggattia olivinia*).	VH Bee:H	-

Pest / Active Ingredient (Trade Name)	Chemical group	Activity	WHP, days	Availability	States	Comments	Impact on beneficials	Regulatory risk
Flupyradifurone (Sivanto Prime) Bayer	4D	Contact & Ingestion	14 NG	P-A	ALL	Registered in olives for control of Olive Lace Bug and Black Scale.	L Bee:L	-
Potassium Salts of Fatty Acid (Natrasoap) PER14414	-	Contact	NR	P-A	ALL (excl. VIC)	Permitted in olives for control of Lace Bug (*Froggattia olivinia*).	L Bee:L	-
Pyrethrins (Pyganic) PER81870	3A	Contact	1	P-A	ALL	Permitted in olives for control of Olive Lace Bug (*Froggattia olivinia*).	VH Bee:H	-
Isocycloseram (Simodis) Syngenta	30	Ingestion		P		Registered for control of Diamond Back Moth, Cabbage White Butterfly and suppression of Heliothis in brassica vegetables and brassica leafy vegetables, suppression of Onion Thrips and Plague Thrips in bulb vegetables, control of Two Spotted Mite and Cucumber Moth and suppression of Broad Mite, Bean Red Spider Mite, Western Flower Thrips, Tomato Thrips, Melon Thrips, Plague Thrips and Heliothis in cucurbits, and control of Two Spotted Mite and Broad Mite and suppression of Tomato Russet Mite, Western Flower Thrips, Tomato Thrips, Melon Thrips, Plague Thrips and Heliothis in fruiting vegetables. No current registrations for control of Hemiptera but there is international research that indicates some activity on bug species.	H Bee:VH	-
Sulfoxaflor (Transform) Corteva	4C	Ingestion & Contact		P		Registered for control of Rutherglen Bug in cucurbits, fruiting vegetables, leafy vegetables, root & tuber vegetables, brassica vegetables, cane berries and strawberries, and for control of Fruit Spotting Bugs in assorted tropical & sub-tropical fruits (inedible peel), avocado, citrus, macadamia and persimmons.	M Bee:H	-

Pest / Active Ingredient (Trade Name)	Chemical group	Activity	WHP, days	Availability	States	Comments	Impact on beneficials	Regulatory risk
Light Brown Apple Moth (*Epiphyas postvittana*) **Priority: Low**								
Rated as a low priority in olives. Olives are not a preferred host of Light Brown Apple Moth. Larvae can cause feeding damage to the growing tips and flowers in rare cases.								
Bacillus thuringiensis subsp Kurstaki Strain HD-1 (DiPel)	11	Biological / Ingestion	NR	A	ALL	Registered in fruit for control of Armyworm (*Spodoptera* spp.), Cotton Bollworm (*Helicoverpa armigera*), Native Budworm (*Helicoverpa punctigera*), Cabbage Moth (*Plutella xylostella*), Cabbage White Butterfly (*Pieris rapae*), Green Looper (*Chrysodeixis eriosoma*), **Light Brown Apple Moth** (*Epiphyas postvittana*), Pear Looper (*Ectropis excursaria*), Soybean Looper (*Thysanoplusia orichalcea*), Vine Moth (*Phalaenoides glycinae*, *Agarista agricola*) and Tobacco Looper (*Chrysodeixis argentifera*). Time spraying to coincide with egg hatch. Treatments per season not limited.	VL Bee:VL	-
Chlorpyrifos PER14575	1B	Contact	NR /365[8] NG	A	ALL (excl. VIC)	Permitted in olives for control of Ants, African Black Beetle and **Light Brown Apple Moth**. Apply as a foliar spray to non-bearing fruit trees only. Retreatment interval and maximum number of applications per season not specified.	H Bee:H	R1
Chlorantraniliprole (Coragen) FMC	28	Ingestion		P		Registered for control of various lepidoptera in brassica vegetables, brassica leafy vegetables, stalk & stem vegetables, leafy vegetables, lettuce, fruiting vegetables, cucurbits, legume vegetables, potatoes, strawberries and sweet corn.	L Bee:VL	-
Emamectin (Proclaim) Syngenta	6	Ingestion		P		Registered for control of various lepidoptera in brassica vegetables, root & tuber vegetables (except potato), leafy vegetables and brassica leafy vegetables (except lettuce), sweet corn, strawberries, lettuce, cucurbits, legume vegetables, fruiting vegetables and grapes.	M Bee:H	-
Indoxacarb (Avatar)	22A	Ingestion		P		Registered for control of various lepidoptera in brassica vegetables, leafy vegetables, fruiting vegetables, celery, cucurbits, sweet corn, blueberries, rubus, pome fruit, stone fruit and grapes.	M Bee:H	R3

[8] NR for ground treatment; 12 month harvest WHP for foliar application

Pest / Active Ingredient (Trade Name)	Chemical group	Activity	WHP, days	Availability	States	Comments	Impact on beneficials	Regulatory risk
Isocycloseram (Simodis) Syngenta	30	Ingestion		P		Registered for control of various lepidoptera in brassica vegetables, brassica leafy vegetables, cucurbits and fruiting vegetables.	H Bee:VH	-
Methoxyfenozide (Prodigy) Corteva	18	Ingestion		P		Registered for control of various lepidoptera in almonds, pome fruit, avocado, blueberry, citrus, coffee, custard apple, grapevines, kiwifruit, longan, lychee, macadamia, tomatoes, peppers, eggplant and okra.	VL Bee:VL	-
Spinetoram (Success Neo) Corteva	5	Ingestion		P		Registered for control of various lepidoptera in brassica vegetables, bulb vegetables, cucurbits, culinary herbs, fruiting vegetables, leafy vegetables, legume vegetables, root & tuber vegetables, stalk & stem vegetables, sweet corn, ornamentals, avocados, bananas, berryfruit, carob, cocoa, citrus, coffee, kiwifruit, mango, tropical & sub-tropical fruit (inedible peel), macadamias and pistachios.	M Bee:VH	-
Spinosad (Entrust Organic) Corteva	5	Ingestion		P		Registered for control of various lepidoptera in banana, brassica vegetables, cucurbits, culinary herbs, fruiting vegetables, leafy vegetables, legume vegetables, root & tuber vegetables, stalk & stem vegetables, sweet corn, ornamentals, avocados, berryfruit, citrus, coffee, grapes, kiwifruit, mango, pome fruit, stone fruit and tropical & sub-tropical fruit (inedible peel).	L Bee:H	-
Tebufenozide (Mimic) Corteva	16A	Ingestion		P		Registered for control of various lepidoptera in apples, pears, avocado, citrus, custard apple, grapevines, kiwifruit, longan, lychee and macadamia.	L Bee:L	-

Pest / Active Ingredient (Trade Name)	Chemical group	Activity	WHP, days	Availability	States	Comments	Impact on beneficials	Regulatory risk
Cutworm (*Agrotis* spp.) **Priority: Low**								
Rated as a low priority in olives. Cutworms are a soil borne pest. The larvae are most active at night, when they will chew off young trees at the base. Natural predators and early control of summer and autumn weeds will help reduce larval survival prior to crop emergence. If required, cutworms can be controlled with insecticides; spot spraying may provide adequate control.								
Alpha-Cypermethrin PER14791	3A	Contact	NR NG	A	ALL (excl. VIC)	Permitted in olives for control of Curculio Beetle / Apple Weevil (*Otiorhynchus cribicollis*) and **Cutworms** (*Agrostis* spp.) Drench spray to the butts of trees and ground around the butt. Retreatment interval not specified. Maximum of 2 applications per season to trees that are of fruit-bearing age.	VH Bee:H	-
Carbaryl	1A	Contact		P		Registered for control of **Cutworms** in grapes, beetroot, cucurbits, rosella, potatoes, turnips, cereals, pastures and ornamentals.	H Bee:H	R3
Clothianidin + Imidacloprid (Poncho Plus) BASF	4A	Protectant / Seed Treatment		P		Registered for control of **Cutworms** as a seed treatment in sweet corn, sunflower, canola & forage brassica.	M Bee:VH	R2
Slugs and Snails (Gastropoda) **Priority: Low**								
Rated as a low priority in olives. Slugs and snails can be a problem in some areas of SA and WA. In large numbers they can smother branches and cause broken limbs due to excess weight for the branches to bear.								
Metaldehyde	-	Contact	7	A	ALL	Registered in horticultural crops for control of **Slugs and Snails**. Broadcast evenly over the surface of the ground around trees to be protected and in areas where slugs and snails congregate.	-	-

Pest / Active Ingredient (Trade Name)	Chemical group	Activity	WHP, days	Availability	States	Comments	Impact on beneficials	Regulatory risk
Green Tree Ant (*Oecophylla smaragdina*) **Priority: Low**								
Rated as a low priority in olives. Green Tree Ant are a nuisance pest in orchards. The ants do not cause damage to trees.								
Chlorpyrifos PER14575	1B	Contact	NR /365[9] NG	A	ALL (excl. VIC)	Permitted in olives for control of **Ants**, African Black Beetle and Light Brown Apple Moth. Apply as a soil drench around the base of the tree. Retreatment interval not specified. Maximum of 2 applications per year to trees of fruit-bearing age.	H Bee:H	R1
Pyriproxyfen (Distance Ant Bait) Sumitomo	7C	IGR / Bait	NR	A	ALL	Registered in olives for control of invasive and nuisance **ants**. Apply baits in early spring or summer at first sign of ant activity. DO NOT exceed 3 applications per year and a minimum of 3 months between each treatment.	VL Bee:L	-

[9] NR for ground treatment; 12 month harvest WHP for foliar application

4.3 Weeds of Olive

4.3.1 Weed priorities

Weeds	Priority
Flaxleaf Fleabane (*Conyza bonariensis*)	H
Barnyard Grass (*Echinochloa colona*)	M
Crowsfoot Grass (*Dactyloctenium aegyptium*)	M
Blackberry Nightshade (*Solanum nigrum*)	L
Pigweed (*Portulaca* spp.)	L

Weed priorities can vary substantially between regions, and weed management generally is guided more by cultural methods than by specific problem weed species. An integrated weed management program incorporating mulch and inter-row grass cover should be used to reduce the need for herbicides in plantations. Our industry consultation Flaxleaf Fleabane as a high priority. This is an invasive species which is difficult to kill and must be managed using a sustained management program incorporating multiple control measures.

The risk of herbicide resistance should also be considered in devising a weed management program. Specific resistance management strategies for high resistance risk (1 and 2) and moderate resistance risk (3, 4, 6, 9, 10, 12, 13, 14, 15, 18, 19, 22, 23, 27, 29, 30 and 31) herbicide modes of action are available on the CropLife Australia webpage[10].

[10] https://www.croplife.org.au/resources/programs/resistance-management/

4.3.2 Available and potential products for weed control

TABLE KEY: Note that blank fields in the table indicate no information has been provided.

Availability			
A	Available via either registration or permit approval		
P	Potential – a possible candidate to pursue for registration or permit		
P-A	Potential, already approved in the crop for another use		
Resistance risk		**Regulatory risk (refer to Appendix 7)**	
		R1	Short-term: Critical concern over retaining access
**	Moderate resistance risk	R2	Medium-term: Maintaining access of significant concern
***	High resistance risk	R3	Long-term: Potential issues associated with use - Monitoring required
Withholding Period (WHP) – Number of days from last treatment to harvest (H) or Grazing (G)			
Harvest	H	Not Required when used as directed	NR
Grazing	G	No Grazing Permitted	NG

Active ingredient (Trade Name)	Chemical Group	Crop/ Situation	Comment / Use / Weed	WHP (days)	Availability	States	Regulatory risk
Flaxleaf Fleabane (*Conyza bonariensis*) **Priority: High**							
Rated as a high priority in olives. Flaxleaf Fleabane is a widespread weed that is difficult to control with herbicides. It seeds prolifically and can germinate year-round. Weed control should be targeted at small, actively growing weeds and usually multiple applications will be required. A combination of residual and knockdown herbicides should form part of an integrated approach to managing Flaxleaf Fleabane.							
Carfentrazone + Glufosinate (Hellcat) AgNova	14**+ 10**	Olive Plantations / Directed or shielded spray	Registered in olive plantations for control of various grass and broadleaf weeds, including **Flaxleaf Fleabane** (*Conyza bonariensis*). Apply as a directed or shielded spray. Do not allow spray to contact any part of the tree, including the trunk.	NR G:56	A	ALL	R3
Flazasulfuron (Katana)	2***	Olive Groves / > 3 years old	Registered in olive groves for control of various grass and broadleaf weeds, including **Fleabane** (*Conyza* sp.) Use either as pre-emergent or post-emergent application. Apply as a directed spray, ensuring that spray does not contact crop foliage, bark, roots or fruit. Maximum of 1 application per year.	28 NG	A	ALL	-

Active ingredient (Trade Name)	Chemical Group	Crop/ Situation	Comment / Use / Weed	WHP (days)	Availability	States	Regulatory risk
Flumioxazin (Chateau)	14**	Olives / Directed Spray / Residual Weed Control	Registered in olives for control of various grass and broadleaf weeds, including **Fleabane** (*Conyza bonariensis*). Apply to bare soil using a directed spray at the base of the trees. Requires at least 15mm of irrigation or rain to activate. Maximum of 1 application per year.	98 G:28	A	ALL	-
Paraquat + Amitrole (Guerilla) Imtrade	22** + 34**	Orchards / Directed Spray	Registered in orchards for control of annual grass and broadleaf weeds, including **Flaxleaf Fleabane**. Apply as a directed spray and avoid contact with crop foliage. NOTE: This use pattern is not supported under the current draft APVMA review.	NR G:1	A	ALL	R1
Amitrole	34**		Registered for control of **Fleabane** in fallow and pine plantations.		P		-
Saflufenacil (Sharpen) BASF	14**		Registered for control of **Flaxleaf Fleabane** in citrus, pome fruit & almonds.		P		-
S-Metolachlor (Dual Gold) Syngenta	15**		Registered for control of grass and broadleaf weeds in Brassica vegetables, Brassica leafy vegetables, sweet potatoes, spring onions, shallots, spinach, silverbeet, rhubarb, culinary herbs and beans.		P		-
Barnyard Grass (*Echinochloa colona*) **Priority: Moderate**							
Rated as a moderate priority in olives. Barnyard Grass is a summer annual grass weed that is a prolific seeder, is highly competitive and is difficult to control with herbicides. It is prone to development of herbicide resistance, with confirmed cases of resistance to Group 9 and Group 5 herbicides.							
Carfentrazone + Glufosinate (Hellcat) AgNova	14**+ 10**	Olive Plantations / Directed or shielded spray	Registered in olive plantations for control of various grass and broadleaf weeds, including **Awnless Barnyard Grass** (*Echinochloa colona*). Apply as a directed or shielded spray. Do not allow spray to contact any part of the tree, including the trunk.	NR G:56	A	ALL	R3

Active ingredient (Trade Name)	Chemical Group	Crop/ Situation	Comment / Use / Weed	WHP (days)	Availability	States	Regulatory risk
Clethodim (Select)	1***	Non-Bearing Fruit Trees	Registered in non-bearing fruit trees for control of grass weeds, including **Barnyard Grass**. Apply as a directed spray to young, actively growing weeds	NR	A	ALL	-
Flazasulfuron (Katana)	2***	Olive Groves / > 3 years old	Registered in olive groves for control of various grass and broadleaf weeds, including **Awnless Barnyard Grass** (*Echinochloa crus-galli*). Use either as pre-emergent or post-emergent application. Apply as a directed spray, ensuring that spray does not contact crop foliage, bark, roots or fruit. Maximum of 1 application per year.	28 NG	A	ALL	-
Fluazifop-P (Fusilade)	1***	Olives / Directed Spray	Registered in olives as a directed spray for the control of grass weeds, including **Barnyard Grass**. Apply to young, actively growing weeds.	14	A	QLD, WA & NT	-
Flumioxazin (Chateau)	14**	Olives / Directed Spray / Residual Weed Control	Registered in olives for control of various grass and broadleaf weeds, including **Barnyard Grass** (*Echinochloa colona*). Apply to bare soil using a directed spray at the base of the trees. Requires at least 15mm of irrigation or rain to activate. Maximum of 1 application per year.	98 G:28	A	ALL	-
Glufosinate (Basta)	10**	Olive plantations / Post-emergent directed spray	Registered in olive plantations for control of various grass and broadleaf weeds, including **Awnless Barnyard Grass** (*Echinochloa colona*). Do not allow spray to contact any part of the tree, including the trunk.	21 G:56	A	ALL	R3
Glyphosate (Roundup)	9**	Tree Crops / Post-emergence directed spray	Registered in tree crops for control of various grass and broadleaf weeds, including **Barnyard Grass**. Do not allow spray to contact any part of the tree, including the trunk. Time application to flowering nutgrass. Multiple applications will be required.	NR	A	ALL	R3
Haloxyfop (Verdict)	1***	Orchard, Vine & Plantation Crops / Directed Spray	Registered in orchard, vine & plantation crops for control of various grass weeds, including **Barnyard Grass**. Apply as a directed spray to the base of the tree avoiding contact with fruit and foliage.	NR	A	ALL	-

Active ingredient (Trade Name)	Chemical Group	Crop/ Situation	Comment / Use / Weed	WHP (days)	Availability	States	Regulatory risk
Oryzalin	3**	Olive / Non-Bearing / directed spray	Registered in non-bearing olives for control of grass and broadleaf weeds, including **Barnyard Grass**. Apply to bare soil using a directed spray at the base of the trees. Requires at least 15mm of irrigation or rain to activate.	NR	A	ALL	-
Pendimethalin	3**	Olives / Residual weed control	Registered in olives for control of various grass and broadleaf weeds, including **Barnyard Grass**. Apply to soil surface that is free of weeds, surface litter and clods, and ensure incorporation by a minimum of 5mm of rainfall or spray irrigation within 10 days.	NR	A	ALL	-
S-Metolachlor (Dual Gold) Syngenta	15**		Registered for control of grass and broadleaf weeds in Brassica vegetables, Brassica leafy vegetables, sweet potatoes, spring onions, shallots, spinach, silverbeet, rhubarb, culinary herbs and beans.		P		-
Crowsfoot Grass (*Dactyloctenium aegyptium*) **Priority: Moderate**							
Rated as a moderate priority in olives. Crowsfoot Grass is a summer annual grass weed that is a prolific seeder, is highly competitive and is difficult to control with herbicides.							
Carfentrazone + Glufosinate (Hellcat) AgNova	14**+ 10**	Olive Plantations / Directed or shielded spray	Registered in olive plantations for control of various grass and broadleaf weeds, including **Crowsfoot Grass** (*Eleusine indica*). Apply as a directed or shielded spray. Do not allow spray to contact any part of the tree, including the trunk.	NR G:56	A	ALL	R3
Clethodim (Select)	1***	Non-Bearing Fruit Trees	Registered in non-bearing fruit trees for control of grass weeds, including **Crowsfoot Grass**. Apply as a directed spray to young, actively growing weeds	NR	A	ALL	-
Fluazifop-P (Fusilade)	1***	Olives / Directed Spray	Registered in olives as a directed spray for the control of grass weeds, including **Crowsfoot Grass**. Apply to young, actively growing weeds.	14	A	QLD, WA & NT	-

Active ingredient (Trade Name)	Chemical Group	Crop/ Situation	Comment / Use / Weed	WHP (days)	Availability	States	Regulatory risk
Flumioxazin (Chateau)	14**	Olives / Directed Spray / Residual Weed Control	Registered in olives for control of various grass and broadleaf weeds, including **Crowsfoot** (*Eleusine indica*). Apply to bare soil using a directed spray at the base of the trees. Requires at least 15mm of irrigation or rain to activate. Maximum of 1 application per year.	98 G:28	A	ALL	-
Glufosinate (Basta)	10**	Olive plantations / Post-emergent directed spray	Registered in olive plantations for control of various grass and broadleaf weeds, including **Crowsfoot Grass** (*Eleusine indica*). Do not allow spray to contact any part of the tree, including the trunk.	21 G:56	A	ALL	R3
Haloxyfop (Verdict)	1***	Orchard, Vine & Plantation Crops / Directed Spray	Registered in orchard, vine & plantation crops for control of various grass weeds, including **Crowsfoot Grass**. Apply as a directed spray to the base of the tree avoiding contact with fruit and foliage.	NR	A	ALL	-
Pendimethalin	3**	Olives / Residual weed control	Registered in olives for control of various grass and broadleaf weeds, including **Crowsfoot Grass**. Apply to soil surface that is free of weeds, surface litter and clods, and ensure incorporation by a minimum of 5mm of rainfall or spray irrigation within 10 days.	NR	A	ALL	-
Dimethenamid-P (Outlook) BASF	15**		Registered for control of grass and broadleaf weeds, including **Crowsfoot Grass** in sweet corn, green beans, navy beans, green peas, pumpkins and kabocha.		P		-
S-Metolachlor (Dual Gold) Syngenta	15**		Registered for control of grass and broadleaf weeds in Brassica vegetables, Brassica leafy vegetables, sweet potatoes, spring onions, shallots, spinach, silverbeet, rhubarb, culinary herbs and beans.		P		-

Active ingredient (Trade Name)	Chemical Group	Crop/ Situation	Comment / Use / Weed	WHP (days)	Availability	States	Regulatory risk
Blackberry Nightshade (*Solanum nigrum*) **Priority: Low**							
Rated as a low priority in olives. Blackberry Nightshade is a competitive weed that is widespread in all regions. Herbicide control is effective but requires timely application and avoidance of seed set over several years to bring the soil seed bank down.							
Flumioxazin (Chateau)	14**	Olives / Directed Spray / Residual Weed Control	Registered in olives for control of various grass and broadleaf weeds, including **Blackberry Nightshade** (*Solanum nigrum*). Apply to bare soil using a directed spray at the base of the trees. Requires at least 15mm of irrigation or rain to activate. Maximum of 1 application per year.	98 G:28	A	ALL	-
Isoxaben (Gallery)	29**	Tree Fruits / Non-Bearing	Registered in non-bearing tree fruits for control of various broadleaf weeds, including **Black Nightshade** (*Solanum nigrum*). Apply prior to weed emergence. Must be activated by at least 12.5mm of rainfall or sprinkler irrigation within 21 days of application.	NR	A	ALL	-
Oryzalin	3**	Olive / Non-Bearing / directed spray	Registered in non-bearing olives for control of grass and broadleaf weeds, including **Blackberry Nightshade**. Apply to bare soil using a directed spray at the base of the trees. Requires at least 15mm of irrigation or rain to activate.	NR	A	ALL	-
Aclonifen (Emerger) Bayer	32**	Pre-Emergence	Bayer is expected to seek registration for pre-emergent control of grass and broadleaf weeds in various vegetable crops. Registered in Europe for use in potatoes, legume vegetables and cereals. **Blackberry Nightshade** is listed as moderately susceptible at a high rate.		P		-
Dimethenamid-P (Outlook) BASF	15**		Registered for control of grass and broadleaf weeds, including **Blackberry Nightshade** in sweet corn, green beans, navy beans, green peas, pumpkins and kabocha.		P		-
Fluroxypyr (Starane) Corteva	4**		Registered for control of **Blackberry Nightshade** in non-crop areas and pastures.		P		-

Active ingredient (Trade Name)	Chemical Group	Crop/ Situation	Comment / Use / Weed	WHP (days)	Availability	States	Regulatory risk
Norflurazon (Zoliar) AgNova	12**		Registered for control of **Blackberry Nightshade** in citrus, grapes, almonds, pome fruit and stone fruit.		P		-
S-Metolachlor (Dual Gold) Syngenta	15**		Registered for control of grass and broadleaf weeds in Brassica vegetables, Brassica leafy vegetables, sweet potatoes, spring onions, shallots, spinach, silverbeet, rhubarb, culinary herbs and beans.		P		-
Pigweed (*Portulaca* spp.) **Priority: Low**							
Rated as a low priority in olives. Summer growing broadleaf weed that competes aggressively in-crop and can be difficult to control with herbicides.							
Carfentrazone + Glufosinate (Hellcat) AgNova	14**+ 10**	Olive Plantations / Directed or shielded spray	Registered in olive plantations for control of various grass and broadleaf weeds, including **Pigweed** (*Portulaca oleracea*). Apply as a directed or shielded spray. Do not allow spray to contact any part of the tree, including the trunk.	NR G:56	A	ALL	R3
Flumioxazin (Chateau)	14**	Olives / Directed Spray / Residual Weed Control	Registered in olives for control of various grass and broadleaf weeds, including **Pigweed** (*Portulaca oleracea*). Apply to bare soil using a directed spray at the base of the trees. Requires at least 15mm of irrigation or rain to activate. Maximum of 1 application per year.	98 G:28	A	ALL	-
Glufosinate (Basta)	10**	Olive plantations / Post-emergent directed spray	Registered in olive plantations for control of various grass and broadleaf weeds, including **Pigweed** (*Portulaca oleracea*). Do not allow spray to contact any part of the tree, including the trunk.	21 G:56	A	ALL	R3
Glyphosate (Roundup)	9**	Tree Crops / Post-emergence directed spray	Registered in tree crops for control of various grass and broadleaf weeds, including **Pigweed**. Do not allow spray to contact any part of the tree, including the trunk. Time application to flowering nutgrass. Multiple applications will be required.	NR	A	ALL	R3

Active ingredient (Trade Name)	Chemical Group	Crop/ Situation	Comment / Use / Weed	WHP (days)	Availability	States	Regulatory risk
Isoxaben (Gallery)	29**	Tree Fruits / Non-Bearing	Registered in non-bearing tree fruits for control of various broadleaf weeds, including **Pigweed** (*Portulaca oleracea*). Apply prior to weed emergence. Must be activated by at least 12.5mm of rainfall or sprinkler irrigation within 21 days of application.	NR	A	ALL	-
Oryzalin	3**	Olive / Non-Bearing / directed spray	Registered in non-bearing olives for control of grass and broadleaf weeds, including Portulaca (**Pigweed**). Apply to bare soil using a directed spray at the base of the trees. Requires at least 15mm of irrigation or rain to activate.	NR	A	ALL	-
Pendimethalin	3**	Olives / Residual weed control	Registered in olives for control of various grass and broadleaf weeds, including **Pigweed** (*Portulaca oleracea*). Apply to soil surface that is free of weeds, surface litter and clods, and ensure incorporation by a minimum of 5mm of rainfall or spray irrigation within 10 days.	NR	A	ALL	-
Fluroxypyr (Starane) Corteva	4**		Registered for control of **Pigweed** in sorghum, maize, sweet corn, millet, summer fallow and lucerne.		P		-
Dimethenamid-P (Outlook) BASF	15**		Registered for control of grass and broadleaf weeds, including **Pigweed** in sweet corn, green beans, navy beans, green peas, pumpkins and kabocha.		P		-
Norflurazon (Zoliar) AgNova	12**	Pre-Emergence Weed Control	Registered for control of **Pigweed** in citrus, grapes, almonds, pome fruit and stone fruit.		P		-
S-Metolachlor (Dual Gold) Syngenta	15**		Registered for control of grass and broadleaf weeds in Brassica vegetables, Brassica leafy vegetables, sweet potatoes, spring onions, shallots, spinach, silverbeet, rhubarb, culinary herbs and beans.		P		-

4.4 Plant Growth Regulators in Olives

4.4.1 Plant Growth Regulator Priorities

Plant Growth Regulator Issue	Priority
Fruit loosening prior to harvest	M

Plant Growth Regulators (PGR) do not play a significant role in the management of olives. There were no high priority issues nominated for PGRs. Fruit loosening prior to harvest was identified as moderate priority.

4.4.2 Available and Potential Plant Growth Regulators

TABLE KEY: Note that blank fields in the table indicate no information has been provided.

Availability		Regulatory risk (refer to Appendix 7)	
A	Available via either registration or permit approval	R1	Short-term: Critical concern over retaining access
P	Potential - a possible candidate to pursue for registration or permit	R2	Medium-term: Maintaining access of significant concern
P-A	Potential, already approved in the crop for another use	R3	Long-term: Potential issues associated with use - Monitoring required

Withholding Period (WHP) – Number of days from last treatment to harvest (H) or Grazing (G)			
Harvest	H	Not Required when used as directed	NR
Grazing	G	No Grazing Permitted	NG

Active ingredient (Trade Name)	Chemical Group	Crop/ Situation	Comment / Use	WHP (days)	Availability	States	Regulatory risk
Fruit Loosening **Priority: Moderate**							
Rated as a high priority in SA, and as a low priority in NSW, QLD, TAS & VIC. Post-harvest sprouting will reduce shelf-life and marketability of onions.							
Ethephon PER14460	PGR	Olives	Permitted in olives for fruit loosening prior to mechanical harvesting. Apply a single application as a foliar spray 2 weeks prior to harvest.	7 NG	A	ALL (excl. VIC)	-

5. References

5.1 Information:

AgChem Access Priority Access Forum	https://www.agrifutures.com.au/national-rural-issues/agvet-chemicals/
Australian Pesticide and Veterinary Medicines Authority	www.apvma.gov.au
APVMA Chemical review	https://apvma.gov.au/chemicals-and-products/chemical-review/listing
APVMA MRLs	www.legislation.gov.au/F2023L01350/latest/text
APVMA Permit search	Agricultural And Veterinary Permits Search - portal.apvma.gov.au
APVMA Product search	Public Chemical Registration Information System Search - portal.apvma.gov.au
Codex MRL database	http://www.fao.org/fao-who-codexalimentarius/codex-texts/dbs/pestres/en/
Cotton Pest Management Guide 2023-24	https://www.cottoninfo.com.au/publications/cotton-pest-management-guide
CropLife Australia	https://www.croplife.org.au/
Hort Innovation	www.horticulture.com.au

5.2 Abbreviations and Definitions:

APVMA	Australian Pesticides and Veterinary Medicines Authority
IPM	Integrated pest management
LOQ	Limit of quantification
MRL	Maximum residue limit (mg/kg or ppm)
Pesticides	Plant protection products (fungicide, insecticide, herbicide, nematicides, rodenticides, etc.).
Plant pests	Diseases, insects, nematodes, rodents, viruses, weeds, etc.
SARP	Strategic Agrichemical Review Process
TBC	To be confirmed
WHP	Withholding Period

5.3 Acknowledgements:

Thanks go to the many industry people who contributed information and collaborated on the review of this report.

6. Appendices

Appendix 1. Products available for disease control in olive
Appendix 2. Products available for control of insects and other pests in olive
Appendix 3. Products available for weed control in olive
Appendix 4. Plant Growth Regulators available in olives
Appendix 4. Current permits for use in olive
Appendix 5. Olive Maximum Residue Limits (MRLs)
Appendix 6. Olive regulatory risk assessment

Appendix 1. Products available for disease control in olives

Active Ingredient (Trade Name)	Chemical Group	Situation	Diseases / Comments	States	WHP Days	Regulatory Risk
Azoxystrobin	11	Olives	Anthracnose	ALL	21	-
Bromo Chloro Dimethyl Hydatoin (BCDMH)	-	Sanitiser / Post-Harvest Treatment	External Rot Causing Organisms	ALL	NR	-
Chlorine	-	Sanitiser / Post-Harvest Treatment	Bacteria and Fungi	ALL	NR	-
Chloropicrin + 1,3-Dichloropropene (Telone C-35)	8B	Soil Fumigant	Soil-borne diseases (including *Fusarium* & *Verticillium* Wilts, *Rhizoctonia*, *Pythium*)	ALL	NR	-
Copper as Cupric Hydroxide Tribasic Copper Sulfate	M1	Olives	Peacock Spot (*Spilocia oleaginea*) Anthracnose (*Colletotrichum* spp.)	ALL	1	-
Copper Oxychloride			Peacock Spot (*Spilocia oleaginea*) Grey Leaf Spot (*Cercospora cladosporiodes Sacc.*) Fruit Round Spot (*Sphaeropsis dalmatica Thum*) Anthracnose (*Gloeosporium olivarum Alm*) Fruit Rots (*Penicillium sp.*, *Fusarium sp.*, *Cladosporium sp.*)			
Fluopyram + Tebuconazole (Luna Experience) Bayer	7+3	Olives	Anthracnose (*Colletotrichum* spp.)	ALL	14 NG	R3
Iodine	-	Sanitiser / Other Smooth Skinned Fruit	Bacteria & Fungi	ALL	NR	-
Mancozeb PER88358	M3	Olives	Anthracnose (*Colletotrichum gleosporioides*)	ALL	14	R2
Metiram + Pyraclostrobin (Aero) PER87332	M3+11	Olives	Anthracnose (*Colletotrichum gleosporioides*)	ALL (excl. VIC)	21 NG	R2

Active Ingredient (Trade Name)	Chemical Group	Situation	Diseases / Comments	States	WHP Days	Regulatory Risk
Peroxyacetic Acid	-	Sanitiser / Post-Harvest Treatment	Bacteria	ALL	NR	-
Streptomyces lydicus (Actinovate) Novozymes BioAg	BM02	All Crops	Biological soil amendment to stimulate soil organisms to make nutrients more available for plant growth	ALL	NR	-

Appendix 2. Products available for control of insects and other pests in olives

Active Ingredient (Trade Name)	Chemical group	Situation	Pests / Comments	States	WHP Days	Regulatory Risk
1,3-Dichloropropene	-	Soil Fumigant	Plant parasitic nematodes	ALL	NR	-
Acetamiprid + Pyriproxyfen (Trivor) Adama PER89943	4A+7C	Olives	Olive Lace Bug (*Froggattia olivinia*) Scale Insects (Coccoidea)	ALL (excl. VIC)	28 NG	R2
Alpha-Cypermethrin PER14791	3A	Olives	Curculio Beetle / Apple Weevil (*Otiorhynchus cribicollis*) Cutworms (*Agrostis* spp.)	ALL (excl. VIC)	NR NG	-
Bacillus thuringiensis subsp Kurstaki Strain HD-1 (DiPel)	11	Fruit	Armyworm (*Spodoptera* spp.) Cotton Bollworm (*Helicoverpa armigera*) Native Budworm (*Helicoverpa punctigera*) Cabbage Moth (*Plutella xylostella*) Cabbage White Butterfly (*Pieris rapae*) Green Looper (*Chrysodeixis eriosoma*) Light Brown Apple Moth (*Epiphyas postvittana*) Pear Looper (*Ectropis excursaria*) Soybean Looper (*Thysanoplusia orichalcea*) Vine Moth (*Phalaenoides glycinae*, *Agarista agricola*) Tobacco Looper (*Chrysodeixis argentifera*)	ALL	NR	-
Chloropicrin + 1,3-Dichloropropene (Telone C-35)	8B	Soil Fumigant	Plant Parasitic Nematodes Symphylans Wireworms	ALL	NR	-
Botanical Oil (Eco-Oil)	-	Olive Trees	Black Scale	ALL	NR	-

Active Ingredient (Trade Name)	Chemical group	Situation	Pests / Comments	States	WHP Days	Regulatory Risk
Chlorpyrifos PER14575	1B	Olives	Ants African Black Beetle Light Brown Apple Moth	ALL (excl. VIC)	NR/365[11] NG	R1
Clothianidin (Samurai) PER14897	4A	Olives	Olive Lace Bug (*Froggattia olivinia*)	ALL (excl. VIC)	56 NG	R2
Dimethoate PER13999	1B	Olives / Oil Production Only	Olive Lace Bug (*Froggattia olivinia*) Green Vegetable Bug (*Nezara viridula*) Rutherglen Bug (*Nysius vinitor*)	ALL (excl. VIC)	42 NG	R2
Dimethoate PER13859	1B	Fruit Fly Host Crops / Orchard Cleanup	Fruit Fly	ALL	NR	R2
Esfenvalerate (Sumi-Alpha)	3A	Olives	Olive Lace Bug (*Froggattia olivinia*)	ALL	14 NG	-
Fenoxycarb (Insegar)	7B	Olives	Black Scale (*Saissetia oleae*)	ALL	56	-
Fipronil	2B	Fruit Fly Susceptible Fruit Crops / Lure	Queensland Fruit Fly (*Bactrocera tryoni*) Lesser Queensland Fruit Fly (*Bactrocera neohumeralis*)	ALL	NR	R3
Flupyradifurone (Sivanto Prime) Bayer	4D	Olives	Olive Lace Bug Black Scale	ALL	14 NG	-
Petroleum Oil	-	Olives	Black Scale Olive Scale California Red Scale	ALL	NR	-
Maldison	1B	Fruit Trees / Bait	Fruit Fly	ALL	3	R3
Metaldehyde	-	Horticultural Crops	Snails & Slugs	ALL	7	-

[11] NR for ground treatment; 12 month harvest WHP for foliar application

Active Ingredient (Trade Name)	Chemical group	Situation	Pests / Comments	States	WHP Days	Regulatory Risk
Potassium Salts of Fatty Acid (Natrasoap)	-	Fruit	Aphids Thrips Mealybug Two-Spotted Mite Spider Mite Whitefly	ALL	NR	-
Potassium Salts of Fatty Acid (Natrasoap) PER14414	-	Olives	Lace Bug (*Froggattia olivinia*)	ALL (excl. VIC)	NR	-
Pyrethrins (Pyganic) PER81870	3A	Olives	Olive Lace Bug (*Froggattia olivinia*)	ALL	1	-
Pyriproxyfen (Admiral)	7C	Olive	Black Scale (*Saissetia oleae*)	ALL	7 NG	-
Pyriproxyfen + Piperonyl Butoxide (Patriarch RMR) Imtrade	7C	Olive	Black Scale (*Saissetia oleae*)	ALL	7 NG	-
Pyriproxyfen (Distance Ant Bait) Sumitomo	7C	Olives	Invasive & Nuisance Ants	ALL	NR	-
Spinosad (Naturalure) Corteva	5	Tree, Fruit, Nut, Vine & Vegetable Crops / Fruit Fly Bait	Queensland Fruit Fly (*Bactrocera tryoni*) Mediterranean Fruit Fly (*Ceratitis capitata*)	ALL	NR	-

Appendix 3. Products available for weed control in olives

Active ingredient (Trade Name)	Chemical Group	Situation	Comment / Use / Weed	WHP (days)	States	Regulatory Risk
Carfentrazone (Hammer)	14**	Tropical & Sub-Tropical Fruits	Australian Crassula / Stonecrop (*Crassula* sp.), Bifora (*Bifora testiculata*), Capeweed (*Arctotheca calendula*), Chickweed (*Stellaria media*), Common Storksbill (*Erodium cicutarium*), Spiny Emex (*Emex australis*), Marshmallow (*Malva parviflora*), Paterson's Curse (*Echium plantagineum*), Sub Clover (*Trifolium subterraneum*), Wild Radish (*Raphanus raphanistrum*)	NR G:14	ALL	-
Carfentrazone + Glufosinate (Hellcat) AgNova	14**+10**	Olive Plantations	Amaranthus (*Amaranthus* spp.), Apple of Peru (*Nicandra physalodes*), Argentinian Peppercress (*Lepidium bonariense*), Australian Crassula (*Crassula* spp.), Awnless Barnyard Grass (*Echinochloa colona*), Barley Grass (*Hordeum leporinum*), Barnyard Grass (*Echinochloa crus galli*), Bellvine (*Ipomea plebia*), Billy Goat Weed (*Ageratum conyzoides*), Bittercress (*Cardamine hirsute*), Black Bindweed (*Fallopia convolvulus*), Bladder Ketmia (*Hibiscus trionum*), Bordered Panic (*Entolasia marginata*), Brome Grass (*Bromus* spp.), Calopo (*Calopogonium mucunoides*), Caltrop (*Tribulus terrestris*), Capeweed (*Arctotheca calendula*), Chickweed (*Stellaria media*), Clover (*Trifolium subterraneum*), Cobbler's Peg (*Bidens pilosa*), Common Morning Glory (*Ipomea purpurea*), Common Storksbill (*Erodium cicutarium*), Crabgrass (*Digitaria sanguinalis*), Crowsfoot Grass (*Eleusine indica*), Deadnettle (*Lamium amplexicaule*), Dwarf Crumbweed (*Chenopodium pumilo*), Fat Hen (*Chenopodium album*), Flaxleaf Fleabane (*Conyza bonariensis*), Fumitory (*Fumaria officinalis*), Green Crumbweed (*Chenopodium carinatum*), Lesser Canary Grass (*Phalaris minor*), Lesser Swinecress (*Coronopus didymus*), Liverseed Grass (*Urochloa panicoides*), Marshmallow (*Malva parviflora*), Annual Medics (*Medicago* spp.), Milk Thistle / Sowthistle (*Sonchus oleraceus*), Milkweed (*Euphorbia heterophylla*), Mintweed (*Salvia reflexa*), New Zealand Spinach (*Tetragona tetragoniodes*), Paterson's Curse (*Echium plantagineum*), Peanuts (*Arachis hypogaea*), Pigweed (*Portulaca oleracea*), Pinkburr (*Urena lobata*), Potato Weed (*Galinsoga parviflora*), Prairie Grass (*Bromus unioloides*), Prickly Lettuce (*Lactuca serriola*), Prickly Sowthistle (*Sonchus asper*), Red Natal Grass (*Rhynchelytrum repens*), Rhodes Grass (*Chloris gayana*), Annual Ryegrass (*Lolium rigidum*), Saffron Thistle (*Carthamus*	NR G:56	ALL	R3

Active ingredient (Trade Name)	Chemical Group	Situation	Comment / Use / Weed	WHP (days)	States	Regulatory Risk
			lanatus), St Barnaby's Thistle (*Centaurea solstitialis*), Sago Weed (*Plantago cunninghamii*), Scarlet Pimpernel (*Anagallis arvensis*), Setaria (*Setaria italica*), Sheep Thistle (*Carduus tenuiflorus*), Silver Grass (*Vulpia myuros*), Sorghum (*Sorghum bicolor*), Speedwell (*Veronica persica*), Square Weed (*Spermacoce latifolia*), Stagger Weed (*Stachys arvensis*), Star of Bethlehem (*Ipomoea quamoclit*), Summer Grass (*Digitaria ciliaris*), Thickhead (*Crassocephalum crepidioides*), Three Cornered Jack (*Emex australis*), Tomato (*Lycopersicon esculentum*), Townsville Stylo (*Stylosanthes humilis*), Turnip Weed (*Rapistrum rugosum*), Variegated Thistle (*Silybum marianum*), Wall Fumitory (*Fumaria muralis*), Wheat (*Triticum aestivum*), Whorled Pigeon Grass (*Setaria verticillate*), Wild Carrot (*Daucus glochidiatus*), Wild Gooseberry (*Physalis minima*), Wild Mustard (*Sysimbrium orientale*), Wild Oats (*Avena* spp.), Wild Radish (*Raphanus raphanistrum*), Wireweed (*Polygonum aviculare*), Blady Grass (*Imperata cylindrica*), Cape Tulip (*Homeria* spp.), Centro (*Centrosema pubescens*), Clover Glycine (*Glycine latrobeana*), Couch Grass (*Cynodon dactylon*), Cowpea (*Vigna unguiculata*), Giant Sensitive Plant (*Mimosa invisa*), Greenleaf Desmodium (*Desmodium intortum*), Johnson Grass (*Sorghum halepense*), Panicum (*Panicum* spp.), Paspalum (*Paspalum* spp.), Perennial Bindweed (*Convolvulus arvensis*), Perennial Ryegrass (*Lolium perenne*), Shamrock (*Oxalis corymbosa*), Sida Weed (*Sida retusa*), Silverleaf Desmodium (*Desmodium uncinatum*), Siratro (*Macroptilium atropurpureum*), Stink Grass (*Eragrostis cilianensis*), White Clover (*Trifolium repens*), White Eye (*Richardia brasiliensis*), Willow Herb (*Epilobium* spp.)			
Carfentrazone + Glyphosate (Broadway) FMC	14**+9**	Tropical & Sub-Tropical Fruits	Australian Crassula / Stonecrop (*Crassula* spp.), Capeweed (*Arctotheca calendula*), Chickweed (*Stellaria media*), Common Storksbill (*Erodium cicutarium*), Spiny Emex (*Emex australis*), Marshmallow (*Malva parviflora*), Paterson's Curse (*Echium plantagineum*), Sub Clover (*Trifolium subterraneum*), Wild Radish (*Raphanus raphanistrum*)	NR G:14	ALL	R3

Active ingredient (Trade Name)	Chemical Group	Situation	Comment / Use / Weed	WHP (days)	States	Regulatory Risk
Clethodim	1***	Fruit Trees / Non-Bearing	Annual Ryegrass (*Lolium rigidum*), Annual Phalaris (*Phalaris minor*), Barley Grass (*Hordeum leporinum*), Barnyard Grass (*Echinochloa* spp.), Blown Grass (*Agrostis aveacea*), Brome Grass (*Bromus diandrus*), Crowsfoot Grass (*Eleusine indica*), Feathertop Rhodes Grass (*Chloris virgata*), Liverseed Grass (*Urochloa panicoides*), Paradoxa Grass (*Phalaris paradoxa*), Red Sprangletop Grass (*Leptochloa filiformis*), Seedling Johnson Grass (*Sorghum halepense*), Silver Grass (*Vulpia bromoides*) – suppression only (not QLD, WA), Summer Grass (*Digitaria* spp.), Volunteer Sorghum (*Sorghum* spp.), Volunteer Wheat (*Triticum aestivum*), Volunteer Oats (*Avena sativa*), Volunteer Barley (*Hordeum vulgare*), Winter Grass (*Poa annua*)	NR	ALL	-
Flazasulfuron (Katana)	2***	Olive Groves / > 3 years old	Dandelion (*Taraxacum officinale*), Fat Hen (*Chenopodium album*), Marshmallow (*Malva parviflora* & *Althaea officinalis*), Soursob (*Oxalis pes-caprae*), Sowthistle (*Sonchus oleraceus*), Staggerweed (*Stachys arvensis*), Stinging Nettle (*Urtica dioica),* Subterranean Clover (*Trifolium subterraneum*), Turnip Weed (*Rapistrum rugosum),* White Clover (*Trifolium repens*), Wild Radish (*Raphanus raphanistrum),* Wireweed (*Polygonum aviculare*), Barley Grass (*Hordeum* spp.), Awnless Barnyard Grass (Echinochloa crus-galli), Common Paspalum (*Paspalum dilatatum*), Couch Grass (Cynodon dactylon), Perennial Ryegrass (*Lolium perenne*), Toad Rush (*Juncus bufonius*), Winter Grass (*Poa annua*), Capeweed (*Arctotheca calendula*), Dandelion (Taraxacum officinale), Flatweed (*Hypochoeris radicata*), Fleabane (*Conyza* sp.), Marshmallow (*Malva* spp.), Pimpernel (*Anagallis arvensis*), Prickly Lettuce (*Lactuca serriola*), Salvation Jane (*Echium plantagineum*), Shepherd's Purse (*Capsella bursa-pastoris*), Soursob (*Oxalis pes-caprae*), Storksbill (Erodium cicutarium), Subterranean Clover (*Trifolium subterraneum*), White Clover (*Trifolium repens*), Wild Radish (*Raphanus raphanistrum*), Willow Herb (*Epilobium* spp.), Annual Ryegrass (*Lolium rigidum*), Barley Grass (*Hordeum* sp.), Awnless Barnyard grass (*Echinochloa crus-galli*), Great Brome Grass (*Bromus diandrus*), Perennial ryegrass (*Lolium perenne*), Silver Grass (*Vulpia* sp.), Toad Rush (*Juncus bufonius*)	28 NG	ALL	-

Active ingredient (Trade Name)	Chemical Group	Situation	Comment / Use / Weed	WHP (days)	States	Regulatory Risk
Fluazifop-P (Fusilade)	1***	Olives	Annual Ryegrass, Barley Grass, Barnyard Grass, Brome Grasses, Crowsfoot Grass, Johnson Grass, Liverseed Grass, Prairie Grass, Summer Grass (Crabgrass), Wild Oats	14	QLD, WA, & NT	-
Fluazifop-P (Fusilade) PER92476	1***	Olives	Rhodes Grass (*Chloris gayana*)	28 NG	QLD	-
Flumioxazin (Chateau)	14**	Olives / Directed Spray / Residual Weed Control	Annual Ryegrass (*Lolium rigidum*), Barnyard Grass (*Echinochloa colona*), Blackberry Nightshade (*Solanum nigrum*), Bluetop (*Ageratum houstonianum*), Capeweed (*Arctotheca calendula*), Crassula (*Crassula colorata*), Creeping Speedwell (*Veronica persica*), Crowsfoot (*Eleusine indica*), Dwarf Nettle or Stinging Nettle (*Urtica urens*), Fat Hen (*Chenopodium album*), Feathertop Rhodes Grass (*Chloris virgata*), Fleabane (*Conyza bonariensis*), Green Summer Grass (*Brachiaria subquadripara*), Hogweed (*Polygonum aviculare*), Marshmallow (*Malva parviflora*), Milk Thistle (*Sonchus oleraceus*), Pigweed (*Portulaca oleracea*), Small Flowered Mallow (*Modiola caroliniana*), Squirreltail Fescue (*Vulpia bromoides*), Summer Grass (*Digitaria ciliaris*), Toadrush (*Juncus bufonius*), Wild Mustard (*Sinapis arvensis*), Wild Radish (*Raphanus raphanistrum*), Wild Rose (*Cleome aculeate*), Wild Turnip (*Brassica tournefortii*)	98 G:28	ALL	-
Glufosinate	10**	Olive plantations / Post-emergent directed spray	Amaranthus (*Amaranthus* spp.), Apple of Peru (*Nicandra physalodes*), Argentine Peppercress (*Lepidium bonariense*), Awnless Barnyard Grass (*Echinochloa colona*), Barley Grass (Hordeum leporinum), Barnyard Grass (*Echinochloa crus galli*), Billy Goat Weed (*Ageratum conyzoides*), Bitter Cress (*Cardamine hirsute*), Black Bindweed / Buckwheat (*Fallopia convolvulus*), Bladder Ketmia (*Hibiscus trionum*), Bordered Panic (*Entolasia marginata*), Brome Grass (*Bromus* spp.), Calopo (*Calopogonium mucunoides*), Caltrop (*Tribulus terrestris*), Capeweed (*Arctotheca calendula*), Clover (*Trifolium subterraneum*), Cobbler's Peg (*Bidens pilosa*), Common Storksbill (*Erodium cicutarium*), Crowsfoot Grass (*Eleusine indica*), Deadnettle (*Lamium amplexicaule*), Dwarf Crumbweed (*Chenopodium pumilo*), Fat Hen (*Chenopodium album*), Fumitory (*Fumaria officinalis*), Green Crumbweed (*Chenopodium carinatum*), Lesser Canary Grass (*Phalaris minor*), Liverseed Grass (*Urochloa panicoides*), Annual Medics (*Medicago* spp.), Milk	21 G:56	ALL	R3

Active ingredient (Trade Name)	Chemical Group	Situation	Comment / Use / Weed	WHP (days)	States	Regulatory Risk
			Thistle (*Sonchus oleraceus*), Mintweed (*Salvia reflexa*), New Zealand Spinach (*Tetragonia tetragoniodes*), Patterson's Curse (*Echium plantagineum*), Peanuts (*Arachis hypogaea*), Pigweed (*Portulaca oleracea*), Pinkburr (*Urena lobata*), Potato Weed (*Galinsoga parviflora*), Prairie Grass (*Bromus unioloides*), Prickly Lettuce (*Lactuca serriola*), Red Natal Grass (*Rhynchelytrum repens*), Annual Ryegrass (*Lolium rigidum*), Saffron Thistle (*Carthamus lanatus*), St. Barnaby's Thistle (*Centaurea solstitialis*), Sago Weed (*Plantago cunninghamii*), Scarlet Pimpernel (*Anagallis arvensis*), Setaria (Setaria italica), Sheep Thistle (*Carduus tenuiflorus*), Silver Grass (*Vulpia myuros*), Sorghum (*Sorghum bicolor*), Square Weed (*Spermacoce latifolia*), Stagger Weed (*Stachys arvensis*), Star of Bethlehem (*Ipomoea quamoclit*), Summer Grass (*Digitaria ciliaris*), Thickhead (*Crassocephalum crepidioides*), Three Cornered Jack (*Emex australis*), Tomato (*Lycopersicon esculentum*), Turnip Weed (*Rapistrum rugosum*), Variegated Thistle (*Silybum marianum*), Wheat (*Triticum aestivum*), Wild Carrot (*Daucus glochidiatus*), Wild Gooseberry (*Physalis minima*), Wild Mustard (*Sysimbrium orientale*), Wild Oats (*Avena* spp.), Wild Radish (*Raphanus raphanistrum*), Wireweed (*Polygonum aviculare*), Blady Grass (*Imperata cylindrica*), Cape Tulip (*Homeria* spp.), Clover Glycine (*Glycine latrobeana*), Couch Grass (*Cynodon dactylon*), Cow Pea (*Vigna unguiculata*), Giant Sensitive Plant (*Mimosa invisa*), Greenleaf Desmodium (*Desmodium intortum*), Johnson Grass (*Sorghum halepense*), Panicum (*Panicum* spp.), Paspalum (*Paspalum* spp.), Perennial Bindweed (*Convolvulus arvensis*), Shamrock (*Oxalis corymbosa*), Sida Weed (*Sida retusa*), Silver Leaf Desmodium (*Desmodium uncinatum*), Stink Grass (*Eragrostis cilianensis*), White Clover (*Trifolium repens*), White Eye (*Richardia brasiliensis*), Willow Herb (*Epilobium* spp.)			
Glyphosate	9**	Tree Crops / Post-emergence directed spray	Amaranth, Barley Grass, Brome Grass, Barnyard Grass, Caltrop, Canary Grass, Capeweed, Chickweed, Deadnettle, Double Gee, Liverseed Grass, Mintweed, Paterson's Curse, Pigweed, Ryegrass, Silver Grass, Spear Thistle, Thornapple, Wild Mustard, Wild Oats, Wild Turnip, Winter Grass, Variegated Thistle	NR	ALL	R3

Active ingredient (Trade Name)	Chemical Group	Situation	Comment / Use / Weed	WHP (days)	States	Regulatory Risk
Haloxyfop (Verdict)	1***	Orchard, Vine & Plantation Crops / Directed Spray	Couch Grass, Rhodes Grass, Slender Rats Tail Grass, Buffel Grass, Green Panic, Johnson Grass, Kikuyu, Paspalum, Setaria, Annual Ryegrass, Barley Grass, Barnyard Grass, Brome Grass, Crowsfoot Grass, Lesser Canary Grass, Liverseed Grass, Mossman River Grass, Paradoxa Grass, Summer Grass, Volunteer Cereals, Wild Oats.	NR	ALL	-
Isoxaben (Gallery)	29**	Tree Fruits / Non-Bearing	Amaranths (*Amaranthus* spp.), Black Nightshade (*Solanum nigrum*), Caltrop (*Tribulus terrestris*), Capeweed (*Arctotheca calendula*), Chickweed (*Stellaria media*), Clovers (*Trifolium* spp.), Deadnettle (*Lamium* spp.), Erodium (*Erodium* spp.), Fat Hen (*Chenopodium album*), Flat Weed (*Hypochaeris radicata*), Indian Hedge Mustard (*Sysimbrium orientale*), Milk Thistle (*Sonchus oleraceus*), Ox Tongue (*Picris echioides*), Peppercress (*Lepidium* spp.), Pigweed (*Portulaca oleracea*), Plantains (*Plantago* spp.), Salvation Jane (*Echium plantagineum*), Scarlet Pimpernel (*Anagallis arvensis*), Small Flowered Mallow (*Malva parviflora*), Volunteer Canola (*Brassica* spp.), Wild Radish (*Raphanus raphanistrum*), Wireweed (*Polygonum aviculare*)	NR	ALL	-
Oryzalin	3**	Olive / Non-Bearing	Barnyard Grass, Guinea Grass, Love Grass, Paradoxa Grass, Pigeon Grass, Spiny Burr (Gentle Annie, Innocent Weed), Summer Grass, Crab Grass, Deadnettle, Fat Hen, Fumitory, Portulaca (Pigweed), Sowthistle, Wireweed (Hogweed), Brassica species, Blackberry Nightshade, Caltrop, Paddymelon, Silverleaf Nightshade	NR	ALL	-
Oxyfluorfen (Goal)	14**	Olive Trees / directed spray / Tank mix with glyphosate, paraquat or paraquat / diquat	Grass & Broadleaf Weeds	NR NG	ALL	-
Paraquat (Gramoxone)	22**	Orchards / directed spray or spot spray	Annual Grass & Broadleaf Weeds	NR G:1	ALL	R1

Active ingredient (Trade Name)	Chemical Group	Situation	Comment / Use / Weed	WHP (days)	States	Regulatory Risk
Paraquat + Amitrole (Guerilla) Imtrade	22** + 34**	Orchards / Directed Spray	Annual grass and broadleaf weeds Flaxleaf Fleabane	NR G:1	ALL	R1
Paraquat + Diquat (SpraySeed)	22**	Orchards / directed spray or spot spray	Grass and Broadleaf Weeds	NR G:1	ALL	R1
Paraquat + Diquat (SpraySeed) PER85411	22**	Olives	Broadleaf & Grass Weeds	NR G:7	ALL	R1
Pendimethalin	3**	Olives	Dwarf Amaranth, Green Amaranth, Annual Ryegrass, Asthma Plant (*Euphorbia hirta*), Barnyard Grass, Chickweed (*Stellaria media*), Crowsfoot Grass, Deadnettle (*Lamium amplexicaule*), Fat Hen (*Chenopodium album*), Pigeon Grass, Pigweed (*Portulaca oleracea*), Prickly Lettuce (*Lactuca serriola*), Sowthistle, Summer Grass, Winter Grass, Wireweed, Prairie Grass (*Bromus unioloides*), Spotted Medic (*Medicago arabica*)	NR	ALL	-
Simazine	5**	Nursery Stock / Seedlings / Non-Bearing Fruit Trees	Annual Ryegrass, Annual Thistles, Barley Grass, Bindy-Eye, Brome Grass, Capeweed, Chickweed, Common Sow Thistle, Creeping Oxalis, Fathen, Geranium, Ivy-Leaf Speedwell, Nettles, Potato Weed, Powell's Amaranth, Red Root Amaranth, Redshank, Shepherds Purse, Slim Amaranth, Wild Mustard, Wild Oats, Wimmera Ryegrass Winter Grass, Suppression: Soursob	NR	ALL	-
			Turnips		ALL (excl. NSW)	
			Wireweed		ALL (excl. TAS)	

Chemical Group Resistance Risk: ** Moderate, *** High

Appendix 4. Plant Growth Regulators available in olives

Active ingredient (Trade Name)	Chemical Group	Situation	Comment / Use	WHP (days)	States	Regulatory Risk
Ethephon (PER14460)	PGR	Olives	Fruit loosening prior to mechanical harvest	7 NG	ALL (excl. VIC)	-

Appendix 5. Current permits for use in olives

Permit ID	Description	Date Issued	Expiry Date	Permit holder
PER14575 Version 3	Chlorpyrifos / Olives / Ants, African Black Beetle and Light Brown Apple Moth	23-Dec-13	31-Mar-25	Hort Innovation
PER13859 Version 3	Dimethoate / Orchard cleanup - fruit fly host crops following harvest / Fruit Fly	09-Feb-15	30-Jun-25	Hort Innovation
PER85411 Version 3	Paraquat + Diquat (Spray.Seed) / Olives / Broadleaf & Grass Weeds	01-Nov-17	30-Sep-25	Hort Innovation
PER92476	Fluazifop-P (Fusilade) / Olive Trees / Rhodes Grass	04-Nov-22	30-Nov-25	Comvita Aust
PER89943 Version 2	Acetamiprid + Pyriproxyfen (Trivor) / Olives / Fruit Spotting Bugs, Olive Lace Bug, Fruit Fly suppression, Mealybugs, Scale Insects, Plant Hoppers, Leafhoppers & Light Brown Apple Moth	29-Jan-21	30-Nov-25	Hort Innovation
PER14897 Version 3	Clothianidin (Samurai) / Olives / Olive Lace Bug	04-Mar-15	31-Jan-26	Hort Innovation
PER13999 Version 8	Dimethoate / Olives / Various Insect Pests	19-Apr-13	31-Jul-26	Hort Innovation
PER14791 Version 4	Alpha-Cypermethrin / Olives / Various Insect Pests	06-May-14	30-Nov-26	Hort Innovation
PER14460 Version 3	Ethephon / Olives / Fruit Loosening	01-Jun-14	30-Apr-27	Hort Innovation
PER88358 Version 2	Mancozeb/Olives/Anthracnose	02-Jul-20	31-May-28	Hort Innovation
PER14414 Version 2	Potassium Salts of Fatty Acids / Olives / Lace Bug	04-Oct-13	31-Jul-28	Hort Innovation
PER87332 Version 2	Metiram + Pyraclostrobin (Aero) / Olives / Anthracnose	01-Jul-19	31-May-29	Hort Innovation
PER81870 Version 3	Pyrethrins (Pyganic) / Olives / Olive Lace Bug	17-Dec-16	31-Jul-29	Hort Innovation

Appendix 6. Olive Maximum Residue Limits (MRLs)

CODEX commodity groupings of olive and subgroups:

	Fruits
SO 0088	Oilseeds
SO 0089	Oilseed, except peanut
SO 2093	Oilfruits
SO 0305	Olives for oil production
FT 0305	Table Olives
FT 0026	Assorted tropical & sub-tropical fruit – edible peel
FT 2011	Assorted tropical & sub-tropical, edible peel – small

Note: All Australian olive production is essentially consumed in the domestic market. Available information indicates that in the absence of specific limits in legislation, that some countries defer to Codex, followed by EU MRL standards, or apply a 0.01ppm default value. Food exported to New Zealand from Australia may be legally sold if it complies with Australian requirements. MRLs and legislation are subject to change; the values presented should not be relied on.

Chemical	Codex Code	Description	APVMA MRL mg/kg	Codex MRL mg/kg
Acetamiprid	SO 0305	Olives for oil production	T0.5	-
	FT 0305	Table Olives	T0.5	-
Aldrin & Dieldrin		Fruits	E0.05	-
Amitrole	SO 0088	Oilseeds	*0.01	-
Azoxystrobin	FT 0305	Table Olives	T2	-
Bifenthrin	FT 0305	Table Olives	T0.5	-
Bixafen	SO 0088	Oilseeds {except cotton seed}	*0.01	-
Boscalid	SO 0088	Oilseeds	-	1
Buprofezin	SO 0088	Oilseeds {except cotton seed}	*0.01	-
	FT 0305	Table Olives	-	5
Butroxydim	SO 0088	Oilseeds	*0.01	-
Carbaryl	SO 0088	Oilseeds {except cotton seed}	0.1	-
	FT 0305	Table Olives	-	30
Carfentrazone-ethyl	FT 0026	Assorted tropical & sub-tropical fruit – edible peel	*0.05	-
Chlorpyrifos	SO 0088	Oilseeds {except peanut}	T0.01	-
	FT 0305	Table Olives	T*0.05	-
Chlorpyrifos-methyl	SO 0088	Oilseeds {except cotton seed}	0.15	-
Clothianidin	SO 0305	Olives for oil production	T0.3	-
	FT 0305	Table Olives	T0.3	-
	SO 0088	Oilseeds	-	*0.02
Cyhalothrin	FT 0305	Table Olives	-	1
	SO 0088	Oilseeds	-	0.2
Cypermethrins	FT 0305	Table Olives	T*0.05	*0.05
	SO 0088	Oilseeds	-	0.1
2,4-D	SO 0088	Oilseeds	*0.05	-
DDT		Fruits	E1	-
Deltamethrin	SO 0088	Oilseeds	0.1	-
	FT 0305	Table Olives	-	1

Chemical	Codex Code	Description	APVMA MRL mg/kg	Codex MRL mg/kg
Dichlorvos	SO 0088	Oilseeds	*0.01	-
Diclofop-methyl	SO 0088	Oilseeds	0.1	-
Dicofol		Fruits {except strawberry}	5	-
Difenoconazole	FT 0305	Table Olives	-	2
Dimethoate	SO 0088	Oilseeds {except cotton seed; peanut}	0.2	-
	SO 0305	Olives for oil production	T3	-
Diphenylamine		Fruits {except apple, pear}	0.5	-
Diquat		Fruits	*0.05	-
	SO 0088	Oilseeds {except linseed; poppy seed}	5	-
Dithianon		Fruits {except blueberries}	2	-
Dithiocarbamates	SO 0305	Olives for oil production	T30	-
	FT 0305	Table Olives	T30	-
Diuron	SO 0088	Oilseeds	0.5	-
EPTC	SO 0088	Oilseeds	0.1	
Ethephon	FT 0305	Table Olives	T20	7
Fenvalerate	SO 0088	Oilseeds {except peanut}	0.5	-
Fenitrothion	SO 0088	Oilseeds	0.1	-
Fenthion	FT 0305	Table Olives	-	1
Fenoxycarb	SO 0305	Olives for oil production	2	-
	FT 0305	Table Olives	2	-
Fenvalerate	SO 0305	Olives for oil production	T1	-
	FT 0305	Table Olives	T1	-
Flazasulfuron	SO 0305	Olives for oil production	*0.01	-
	FT 0305	Table Olives	*0.01	-
Fluazaindolizine	SO 0088	Oilseeds	-	0.04
Fluazifop-p-butyl	SO 0088	Oilseeds	0.5	-
	SO 0305	Olives for oil production	0.05	*0.01
	FT 0305	Table Olives	0.05	*0.01
Fluensulfone	SO 0088	Oilseeds	0.05	-
Flumioxazin	SO 0088	Oilseeds	*0.01	-
	FT 0305	Table Olives	*0.02	*0.02
Fluopyram	SO 0088	Oilseeds	0.03	-
	SO 0305	Olives for oil production	3	-
	FT 0305	Table Olives	3	-
Flupyradifurone	SO 0305	Olives for oil production	1	-
	FT 0305	Table Olives	1	-
Flutriafol	SO 0088	Oilseeds {except mustard seeds; rape seed (canola)}	0.05	-
Fluxapyroxad	SO 0088	Oilseeds {except peanuts, cotton}	-	0.8
Glufosinate and Glufosinate-ammonium	SO 0088	Oilseeds {except mustard seeds; rape seed (canola)}	T*0.1	-
	FT 0305	Table Olives	*0.1	-
	FT 0026	Assorted tropical & sub-tropical fruit – edible peel	-	0.1

Chemical	Codex Code	Description	APVMA MRL mg/kg	Codex MRL mg/kg
Glyphosate	SO 0088	Oilseeds {except cotton seed; linseed; mustard seeds; peanut; poppy seed; rape seed (canola); sesame seed; sunflower seed}	T*0.1	-
	FT 0305	Table Olives	*0.1	-
Imidacloprid	FT 0305	Table Olives	-	2
	SO 0305	Olives for oil production	-	2
Inorganic Bromide		Fruits {except avocado, citrus fruits, dried fruits, strawberry}	20	-
Isoxaben	FT 0026	Assorted tropical & sub-tropical fruit – edible peel	*0.01	-
Kresoxim-Methyl	FT 0305	Table Olives	-	0.2
	SO 0305	Olives for oil production	-	0.2
Lindane	SO 0088	Oilseeds {except peanut}	E0.05	-
Maldison		Fruits {except berries & other small fruits, citrus fruits, dried fruits, stone fruits}	2	-
Metaldehyde		Fruits	1	-
	SO 0088	Oilseeds	1	-
Metazachlor	SO 0088	Oilseeds	*0.03	-
Methiocarb		Fruits {except citrus fruits, grapes}	T0.1	-
	SO 0088	Oilseeds	*0.06	-
Methoprene	SO 0089	Oilseed, except peanut	-	Po4
Omethoate	SO 0088	Oilseeds {except cotton seed; peanut}	0.05	-
	SO 0305	Olives for oil production	T2	-
Oryzalin		Fruits	0.1	-
Oxyfluorfen	FT 0305	Table Olives	0.05	-
Paraquat	SO 0088	Oilseeds {except cotton seed; peanut}	*0.05	
	FT 0305	Table Olives	1	0.1
Pendimethalin	SO 0088	Oilseeds	*0.05	-
	FT 0305	Table Olives	*0.05	-
Permethrin	FT 0305	Table Olives	-	1
Phosphine	SO 0088	Oilseeds	*0.01	-
Piperonyl butoxide		Fruits	8	-
	SO 0088	Oilseeds	8	-
Pirimicarb		Fruits {except blackberries}	0.5	-
Propaquizafop	SO 0088	Oilseeds	*0.05	-
Pyraclostrobin	SO 0305	Olives for oil production	T0.3	0.01
	FT 0305	Table Olives	T0.3	0.01
	SO 0089	Oilseed, except peanut	-	0.4
Pyrethrins		Fruits	1	-
	SO 0088	Oilseeds	1	-
Pyriproxyfen	SO 0305	Olives for oil production	1	-
	FT 0305	Table Olives	1	-
Simazine		Fruits	*0.1	-
Spinetoram	SO 0305	Olives for oil production	T0.07	-
	FT 0305	Table Olives	T0.07	0.07

Chemical	Codex Code	Description	APVMA MRL mg/kg	Codex MRL mg/kg
Tebuconazole	SO 0305	Olives for oil production	2	-
	FT 0305	Table Olives	2	*0.05
Thiamethoxam	SO 0088	Oilseeds	-	*0.02
Triallate	SO 0088	Oilseeds	0.1	-
Trichlorfon	SO 0088	Oilseeds {except peanut}	0.1	-
	FT 0026	Assorted tropical & sub-tropical fruit – edible peel	T3	-
Trifloxystrobin	FT 0305	Table Olives	-	0.3
Trifluralin		Fruits	*0.05	-
	SO 0088	Oilseeds	*0.05	-

NOTE: MRLs are constantly under review and subject to change. Check for current MRLs and do not rely on the values stated above.
Note: Available information indicates that in the absence of specific limits in legislation, some countries defer to Codex, followed by EU MRL standards or apply a 0.01ppm default value. Food exported to New Zealand from Australia may be legally sold if it complies with Australian requirements. MRLs and legislation are subject to change; the values presented should not be relied on.

* Indicates that an MRL is at the Limit of Quantitation (LOQ)
T = Temporary MRL
E = The MRL is based on extraneous residues
Po = The MRL accommodates post-harvest treatment of the commodity

Sources:
APVMA MRLs: Agricultural and Veterinary Chemicals Code (MRL Standard) Instrument 2023. Compilation 7. Prepared 6 December 2024.
CODEX MRLs: CODEX Alimentarius International Food Standards database (January 2025), http://www.fao.org/fao-who-codexalimentarius/codex-texts/dbs/pestres/en/

Appendix 7. Olive regulatory risk assessment

Olive
Agrichemical Regulatory
Risk Assessment

March 2024

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 requiring 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 so as 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. As a consequence it is possible that 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 as well as current initiatives aimed at addressing identified pest management deficiencies.

Olive Agrichemical Regulatory Risk Assessment

R1	**Short-term: Critical concern over retaining access**
R2	**Medium-term: Maintaining access of significant concern**
R3	**Long-term: Potential issues associated with use - Monitoring required**

Active Constituents	Chemical group	Problem	Comment
INSECT AND OTHER PESTS			
Acetamiprid + pyriproxyfen	**4A + 7C**	Olive lace bug (PER89943)	Acetamiprid APVMA: Under review
		Scale insects (PER89943)	
Alpha-cypermethrin	**3A**	Apple weevil(PER14791)	EU/UK: No authorisation
		Curculio beetle (PER14791)	
		Cutworms (PER14791)	
B thuringiensis	**11A**	Armyworms	EU: Under review for renewal
		Cabbage white butterfly	
		Grapevine moth	
		Green looper	
		Helicoverpa species	
		Lightbrown apple moth	
		Looper caterpillars	
		Painted vine moth	
		Soybean looper	
		Tobacco looper	
		Twig (pear) looper	
Bifenthrin	**3A**	Termites (Tree establishment, non-fruit bearing)	Canada: Not authorised EU/UK: Not authorised
Botanical oil	**UNE**	Black (Brown olive) scale	
Chlorpyrifos	**1B**	African black beetle(PER14575)	APVMA: Proposed deletion of uses. Codex: All MRLs revoked Canada: Cancellation of all uses. EU/UK: No authorisation in place USA: EPA decision to cancel use on food crops
		Ants (PER14575)	
		Lightbrown apple moth (PER14575)	

Olive Agrichemical Regulatory Risk Assessment

Active Constituents	Chemical group	Problem	Comment
Clothianidin	**4A**	Olive lace bug (PER14897)	APVMA: Under review Canada: Field uses cancelled or amended EU/UK: Not authorised USA: Re-registration with new risk mitigation measures
Dimethoate	**1B**	Green vegetable bug (PER13999)	Codex: No MRL. EU/UK: Not authorised
		Olive lace bug (PER13999)	
		Rutherglen bug (PER13999)	
		Fruit fly orchard clean-up following harvest (PER13859)	
Fatty acids - K salt	**UNE**	Olive lace bug (PER14414)	
Fenoxycarb	**7B**	Black (Brown olive) scale	EU/UK: No authorisation in place
Fipronil lure traps	**2B**	Lesser Queensland fruit fly	APVMA: Under review Codex: Re-evaluation underway EU/UK: No authorisation in place USA: Under review
		Queensland fruit fly	
Flupyradifurone	**4D**	Black scale	EU: Under review
		Olive lace bug	
Indoxacarb	**22A**	Red imported fire ant	Canada: No authorisation EU/UK: No authorisation
Malathion/maldison	**1B**	Queensland fruit fly	APVMA: Under review Codex: Re-evaluation scheduled for 2023/24 EU: Restricted use to permanent greenhouses
		Papaya fruit fly (PER1205 Qld only)	
		Papaya fruit fly (PER80877 SA only)	
		Queensland fruit fly (PER80877 SA only)	
		Fruit flies (attractant)	
Paraffinic oil	**UN**	Black (Brown olive) scale	
		Olive parlatoria scale	
		Red scale	
		Scale insects	
		Soft brown scale	

Active Constituents	Chemical group	Problem	Comment
Pyrethrins	**3A**	Ants	Canada: Under review
		Brown marmorated stink bug	
		Caterpillars	
		Earwigs	
		Leafhoppers	
		Yellow spotted stink bug	
		Olive lace bug (PER81870)	
Pyriproxyfen	**7C**	Ants	
		Black (Brown olive) scale	
S-methoprene	**7A**	Red imported fire ant	EU/UK: No authorisations
Spinosad	**5**	Mediterranean fruit fly	
		Queensland fruit fly	
		Fruit fly baits	
DISEASES			
Azoxystrobin	**11**	Anthracnose	Canada: Review proposed
Copper	**M1**	Anthracnose	EU: Candidates for substitution
		Blue & green moulds	
		Fruit rot - Cladosporium	
		Leaf mould (Olive leaf spot)	
		Phomopsis fruit rot	
		Fruit rot/spots	
		Fruit round rot	
		Fusarium fruit rot	
		Geotrichum fruit rot/s	
		Peacock spot	
		Alternaria fruit rot	
Fluopyram + tebuconazole	**7 + 3**	Anthracnose	Tebuconazole APVMA: nominated for review EU: Candidate for substitution

Olive Agrichemical Regulatory Risk Assessment

Active Constituents	Chemical group	Problem	Comment
Mancozeb	**M3**	Anthracnose (PER88358)	APVMA: nominated for review Canada: Many uses cancelled Codex: To be reviewed EU/UK: Authorisation not renewed
Metiram + pyraclostrobin	**M3 + 11**	Anthracnose (PER87332)	Metiram APVMA: nominated for review Canada: All foliar uses, except potato, cancelled Codex: To be reviewed EU/UK: No authorisation

Active Constituents	Chemical Group	Comment
WEEDS		
Carfentrazone-ethyl	**14**	
Clethodim (Non-bearing trees)	**1**	
Diquat (PER85411)	**22**	APVMA: Currently under review EU/UK: No authorisation in place
Flazasulfuron	**2**	
Fluazifop-P (PER92476)	**1**	
Flumioxazin	**14**	EU: Candidate for substitution
Glufosinate-ammonium	**10**	Canada: Review proposed EU/UK: No authorisation in place
Glyphosate	**9**	Ongoing issues internationally
Oryzalin	**3**	EU/UK: No authorisation in place
Oxyfluorfen	**14**	EU: Candidate for substitution USA: Interim review decision Label amendments proposed
Paraquat	**22**	APVMA: Currently under review Canada: Review initiated EU/UK: No authorisation in place Rotterdam Convention - nomination
Pendimethalin	**3**	EU: Candidate for substitution
Plant growth regulators		
Ethephon (PER14460)		

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Olive Agrichemical Regulatory Risk Assessment

Communications Manager
Hort Innovation
Level 7, 141 Walker Street
North Sydney NSW 2060
Australia
Email: communications@horticulture.com.au
Phone: 02 8295 2300