



Eggplant

Strategic Agrichemical Review Process
(SARP)

April 2021

Hort Innovation
Project - VG18004

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VG18004 – Vegetable Strategic Agrichemical Review Process (SARP) Report Updates

SARP Service Provider:

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Purpose of the report:

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

Date of report:

April 2021

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**Hort
Innovation**
Strategic levy investment

**VEGETABLE
FUND**

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1. Summary

The strategic levy investment project Vegetable Industry SARP Report Updates (VG18004) is part of the Hort Innovation Vegetable Fund. A Strategic Agrichemical Review Process (SARP), through the process of a desktop audit and industry liaison;

- (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 eggplant 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:

Common name	Scientific name
Bacterial Wilt	<i>Ralstonia solanacearum</i>
Verticillium Wilt	<i>Verticillium dahlia</i>

1.2 Insects and nematodes

The high priority insects, mites and nematodes are:

Common name	Scientific name
Two-Spotted Mites	<i>Tetranychus urticae</i>
Western Flower Thrips	<i>Frankliniella occidentalis</i>
Silverleaf Whitefly	<i>Bemisia tabaci</i>
Greenhouse Whitefly	<i>Trialeurodes vaporariorum</i>
Green Peach Aphid	<i>Myzus persicae</i>
Eggfruit Caterpillar	<i>Sceliodes cordalis</i>

1.3 Weeds

The high priority weeds are:

Common Name	Scientific Name
Blackberry Nightshade	<i>Solanum nigrum</i>
Pigweed	<i>Portulaca spp.</i>

2. The Australian Eggplant Industry

The Australian eggplant industry is a minor horticultural industry.

Most eggplants are field grown, however increasing volumes are being grown year-round in high-tech greenhouses. Production regions include the Bowen/Burdekin region and Bundaberg in Queensland, the Sydney region in New South Wales, and the Goulburn Valley region in Victoria.

Production¹ for the year ending in June 2020 was 10,557 tonnes with a value of \$21.1m. Ninety four percent went to the fresh market, 6 percent was used for processing (mainly canned) and less than 1 percent was exported.

Due to Australia's varying weather conditions, the Australian industry can supply domestic markets with fresh eggplant throughout the year. Southern states are unable to produce eggplant for the colder parts of the year, but this is supplemented by production in high-tech greenhouses and exports from warmer states.

Fresh Eggplant Seasonality by State

State	19/20 t	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
New South Wales (22%)	2,274	High	High	High	Medium	Medium	Low	Low	Low	Low	None	None	None
Victoria (11%)	1,137	None	None	None	None	None	None	None	None	None	None	None	None
Queensland (51%)	5,400	High	High	High	High	High	High	High	High	High	High	High	High
Western Australia (8%)	894	High	High	High	High	High	High	High	High	High	High	High	High
South Australia (5%)	568	High	High	High	High	High	High	High	High	High	High	High	High
Tasmania (3%)	284	None	None	None	None	None	None	None	None	None	None	None	None
Availability legend		High	Medium			Low			None				

Australia is a net exporter of eggplants, typically exporting around one percent of total production. For the year ending in June 2020, Australia exported 7 tonnes. Of this export, forty three percent was destined for Nauru, followed by Hong Kong with thirty four percent.

There are multiple varieties of eggplant grown in Australia. These include African eggplant, scarlet eggplant, pea eggplant, and Thai egg plant. The eggplant species referred to in this report is *Solanum melongena L.* also known as Italian eggplant.

¹ Hort Innovation (2020). Australian Horticulture Statistics Handbook 2019/20. [online] Available at: <https://www.horticulture.com.au/globalassets/hort-innovation/resource-assets/ha18002-australian-horticulture-statistics-handbook-2019-20-vegetables.pdf>

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 Eggplant 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 Eggplant industry regarding pesticide access, Hort Innovation undertook a review of the pesticide requirements via a Strategic Agrichemical Review Process (SARP) in 2014. The current project is to update the SARP with the latest information and progress.

The SARP process identifies diseases, insect pests and weeds of major concern to the Eggplant 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 Eggplant 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 Eggplants but attempts to prioritise the major problems.

Exotic plant pests, not present in Australia, are not addressed in this document. A biosecurity plan² has been developed for the Vegetable Industry in consultation with industry, government and scientists. The Biosecurity Plan for the Vegetable Industry which covers Eggplant 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.

² <https://ausveg.com.au/app/uploads/2018/06/Industry-Biosecurity-Plan-for-the-Vegetable-Industry.pdf>

3.2 Minor use permits and registration

From a pesticide access perspective, the APVMA classifies Eggplant as a minor crop. The crop fits within the APVMA crop group Crop Group 012: Fruiting vegetables, other than Cucurbits. Therefore, access to minor use permits can be relatively straight forward as long as a reasonable justification is provided in accordance with the APVMA's [minor use guidance](https://apvma.gov.au/node/10931) (<https://apvma.gov.au/node/10931>).

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 Eggplant industry is for manufacturers to register new pesticides uses in the crop.

3.3 Methods

The current update of the Eggplant Strategic Agrichemical Review Process (SARP), which was last updated in 2014, was conducted by desktop audit using industry information gathered during 2011-2014 under MT10029 – Managing pesticide access in horticulture and finalised under VG12081 - Review of vegetable SARP reports. The process included gathering, collating and confirming information:

Hort Innovation Project Reference	Process of Review - Activity
VG16060 - Vegetable Agrichemical Pest Management Needs and Priorities (AUSVEG) - Commenced: 2 May 2017	<p>Engagement and consultation with growers and other relevant stakeholders. Including; Online crop specific surveys, workshops and one on one consultation nationally.</p> <p>Collation of information collected by commodity on applicable pests, diseases and weeds in order of priority.</p>
MT17019 – Regulatory Support & Co-ordination (AKC)	<p>Eggplant Agrichemical Regulatory Risk Assessment Document</p> <p>To assist strategic planning, with respect to future pest management options, this document was developed as part of the Hort Innovation funded project MT17019 to highlight the regulatory threats to agrichemicals currently approved for the management of the pests and diseases in Eggplant as well as current initiatives aimed at addressing identified pest management deficiencies.</p>
VG18004 – Vegetable Strategic Agrichemical Review Process (SARP) Report Updates	<p>SARP updated via a desktop audit:</p> <p>Review list of priorities ranked as high, moderate and low for each plant pest groups (disease, insects and weeds) – provided by VG16060.</p> <p>Identify industries pest priority gaps in order of importance.</p> <p>Update current pesticides available via label registrations or minor use permits.</p> <p>Update available pesticide use patterns, IPM ranking/compatibility, mode of action and chemical group.</p> <p>Identify pesticides at risk (under review and/or limited uses) via MT17019 Regulatory Support & Co-ordination – AKC consulting.</p> <p>Identify any appropriate solutions through the outcomes of the AgChem Forum’s or similar market intelligence and their overall suitability (IPM compatibility, Chemical group to manage resistance, risk profile, existing domestic MRL’s or global MRL’s including any potential trade barriers, efficacy, OH&S, environmental safety and sustainability).</p> <p>Include known pesticide solutions that are currently under development with registrants for new uses in the nominated crops or in current Hort Innovation projects.</p> <p>Update MRL tables to include Australian MRL’s, Codex and any applicable export market MRL’s</p>

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 eggplant

Appendix 2. Products available for control of insects and mites in eggplant

Appendix 3. Products available for weed control in eggplant

Appendix 4. Current permits for use in eggplant

Appendix 5. Eggplant Maximum Residue Limits (MRLs)

Appendix 6. Eggplant Agrichemical Regulatory Risk Assessment

4. Diseases, Pests and Weeds of Eggplant

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.

<https://www.croplife.org.au/resources/programs/resistance-management/>

Information on regulatory risk derived from project MT17019 (Chapter 4) - Regulatory support and coordination (Appendix 6) has been incorporated.

Some of the suggested options have no overseas MRLs (see Appendix 5). 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.

4.1 Diseases of eggplant

4.1.1 Disease priorities

Common name	Scientific name
High	
Bacterial Wilt	<i>Ralstonia solanacearum</i>
Verticillium Wilt	<i>Verticillium dahlia</i>
Moderate	
Fusarium Rot	<i>Fusarium</i> spp.
Phomopsis Fruit Rot	<i>Phomopsis</i> spp.
Sclerotinia Rot	<i>Sclerotinia</i> spp.
Anthracnose	<i>Colletotrichum</i> spp.
Powdery Mildew	<i>Leveillula taurica</i>
Tomato Spotted Wilt Virus	<i>Tospovirus</i>

Common name	Scientific name
Low	
Grey Mould	<i>Botrytis cinerea</i>
Damping Off	<i>Pythium</i> spp., <i>Rhizoctonia solani</i> & <i>Phytophthora</i> spp.
Bacterial Spot	<i>Xanthomonas campestris</i> pv. <i>vesicatoria</i>
Cercospora Leaf Spot	<i>Cercospora</i> spp.
Irish (Late) Blight	<i>Phytophthora infestans</i>
Septoria	<i>Septoria</i> spp.
Target Spot (Early Blight)	<i>Alternaria solani</i>

Bacterial diseases are difficult to control using fungicide treatments. Standard management practices to minimise bacterial infection spread include good sanitation for farm equipment and use of clean seeds. Crop rotation or tillage helps degrade infected crop debris and reduce the surviving bacteria.

No antiviral cures have been developed for plants infected with a Tospovirus, and infected plants should be removed from a field and destroyed to prevent the spread of the disease. Many plant families are known to be affected by the Tospovirus group.

Control measures are needed to prevent or reduce the levels of disease in crops by removing or avoiding sources of virus infection and minimising spread by thrips. Old, infected crops infested by thrips are a major source of virus and should be sprayed for thrips and removed as soon as possible, particularly if young crops are to be planted nearby.

Management methods that promote clean seeds and transplant material, early detection and disposal of infected seedlings will keep most of these diseases in check. Eliminating alternative hosts, crop rotation, cover crops, bio fumigation and farm hygiene are also important to prevent spread between sites. Taking precautions to prevent spread of disease from nursery to field will also help reduce infections.

Resistance Management

Powdery Mildew is considered to have a high risk of resistance development. There are several disease strategies that apply to vegetables on the CropLife website³, including Powdery Mildew.

³ 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 6)	
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
Bacterial Wilt (<i>Ralstonia solanacearum</i>)							
Priority: High							
Bacterial Wilt was ranked as a high priority in QLD, NSW & WA and as a moderate priority in VIC & SA. <i>Ralstonia solanacearum</i> is an aerobic, non-spore-forming, plant pathogenic, soil-borne bacterium. It colonises the xylem, causing bacterial wilt in a very wide range of vegetable host plants. The bacteria infect plants through roots, natural openings and wounds, often resulting in plant death.							
1,3-Dichloropropene + Chloropicrin (Telone C-35)	8B	Fumigant	NR	A	ALL	Registered in vegetables for pre-planting control of Soil Borne Diseases. <i>For use by professional and registered fumigators only.</i>	-
Chloropicrin (Agrocelhone NE Soil Fumigant)	-	Fumigant	NR	A	ALL	Registered in vegetables for pre-planting control of Soil-Borne Fungus Diseases and Bacteria. <i>For use by professional and registered fumigators only.</i>	-
<i>Bacillus amyloliquefaciens</i> Strain QST 713 (Serenade Prime Soil Ameliorant and Biofungicide) Bayer	BM 02	Biological	NR	P-A	ALL	Registered in vegetables for application to soil to improve bioavailability of soil resources to horticultural crops.	-

Disease / Active Ingredient (Trade Name)	Chemical group	Activity	WHP, days	Availability	States	Comments	Regulatory risk
Copper PER14038	M1	Protective	1	P-A	ALL (Excl. VIC)	Permitted in eggplant for control of Bacterial Spot, Speck and Canker. Expected to have activity on Bacterial Wilt .	-
Verticillium Wilt (<i>Verticillium dahlia</i>)							
Priority: High							
Verticillium Wilt was ranked as a high priority in VIC, QLD & SA and as a moderate priority in NSW & WA. <i>Verticillium dahlia</i> is a fungal plant pathogen which causes leaves to curl and discolour. It is spread by contaminated soil, with the fungus entering the plant through the roots to the vascular system. It may cause death in some plants.							
1,3-Dichloropropene + Chloropicrin (Telone C-35)	8B	Fumigant	NR	A	ALL	Registered in vegetables for pre-planting control of Soil Borne Diseases including <i>Fusarium</i> , Verticillium Wilts, <i>Rhizoctonia</i> and <i>Pythium</i> . For use by professional and registered fumigators only.	-
Chloropicrin (Agrocelhone NE Soil Fumigant)	-	Fumigant	NR	A	ALL	Registered in vegetables for pre-planting control of Soil-Borne Diseases, including <i>Fusarium</i> , Verticillium wilts, <i>Rhizoctonia</i> and <i>Pythium</i> . For use by professional and registered fumigators only.	-
Dazomet (Basamid, Cerlong)	8F	Fumigant	NR	A	ALL	Registered as a pre-plant fumigant in seed beds for control of soil fungi including <i>Pythium</i> , <i>Phytophthora</i> , <i>Sclerotinia</i> , <i>Sclerotium</i> , <i>Rhizoctonia</i> , Verticillium , <i>Plasmodiophora</i> , <i>Armillaria</i> and <i>Fusarium</i> spp. Apply granules to the soil surface and incorporate and seal the soil surface immediately. Do not plant into soil until a positive germination test has been conducted.	-
Metham Sodium	-	Fumigant	NR	A	ALL	Registered in food crops as a pre-plant fumigant for control of fungus diseases including <i>Rhizoctonia</i> , <i>Pythium</i> , <i>Fusarium</i> , <i>Phytophthora</i> , Verticillium , <i>Sclerotinia</i> and Club Root of crucifers. Applied as a soil injection, soil surface spray in front of a rotary tiller or through approved trickle irrigation systems.	-
<i>Bacillus amyloliquefaciens</i> Strain QST 713 (Serenade Prime Soil Ameliorant and Biofungicide) Bayer	BM 02	Biological	NR	P-A	ALL	Registered in vegetables for application to soil to improve bioavailability of soil resources to horticultural crops.	-

Disease / Active Ingredient (Trade Name)	Chemical group	Activity	WHP, days	Availability	States	Comments	Regulatory risk
Fusarium Rot (<i>Fusarium</i> spp.)							
Priority: Moderate							
Fusarium Rot was ranked as a moderate priority in VIC, QLD, NSW, WA & SA. <i>Fusarium</i> is a fungal plant pathogen that infest the vascular system, impeding the uptake of water and nutrients by the crop. It will often cause death of plants in patches and will be spread by water movement in fields.							
1,3-Dichloropropene + Chloropicrin (Telone C-35)	8B	Fumigant	NR	A	ALL	Registered in vegetables for pre-planting control of Soil Borne Diseases including <i>Fusarium</i> , <i>Verticillium</i> Wilts, <i>Rhizoctonia</i> and <i>Pythium</i> . <i>For use by professional and registered fumigators only.</i>	-
Chloropicrin (Agrocelhone NE Soil Fumigant)	-	Fumigant	NR	A	ALL	Registered in vegetables for pre-planting control of Soil-Borne Diseases, including <i>Fusarium</i> , <i>Verticillium</i> Wilts, <i>Rhizoctonia</i> and <i>Pythium</i> . <i>For use by professional and registered fumigators only.</i>	-
Dazomet (Basamid, Cerlong)	8F	Fumigant	NR	A	ALL	Registered as a pre-plant fumigant in seed beds for control of soil fungi including <i>Pythium</i> , <i>Phytophthora</i> , <i>Sclerotinia</i> , <i>Sclerotium</i> , <i>Rhizoctonia</i> , <i>Verticillium</i> , <i>Plasmodiophora</i> , <i>Armillaria</i> and <i>Fusarium</i> spp. Apply granules to the soil surface and incorporate and seal the soil surface immediately. Do not plant into soil until a positive germination test has been conducted.	-
Metham Sodium	-	Fumigant	NR	A	ALL	Registered in food crops as a pre-plant fumigant for control of fungus diseases including <i>Rhizoctonia</i> , <i>Pythium</i> , <i>Fusarium</i> , <i>Phytophthora</i> , <i>Verticillium</i> , <i>Sclerotinia</i> and Club Root of crucifers. Applied as a soil injection, soil surface spray in front of a rotary tiller or through approved trickle irrigation systems.	-
<i>Bacillus amyloliquefaciens</i> Strain QST 713 (Serenade Prime Soil Ameliorant and Biofungicide) Bayer	BM 02	Biological	NR	P-A	ALL	Registered in vegetables for application to soil to improve bioavailability of soil resources to horticultural crops.	-

Disease / Active Ingredient (Trade Name)	Chemical group	Activity	WHP, days	Availability	States	Comments	Regulatory risk
Fludioxonil + Sedaxane (Vibrance Premium) Syngenta	7+12	Protective seed treatment		P		Registered in potatoes for control of Black Scurf, Silver Surf, Black Rot, Gangrene & <i>Fusarium</i> & suppression of Scab.	R3
Phomopsis Fruit Rot (<i>Phomopsis</i> spp.)							
Priority: Moderate							
Phomopsis Fruit Rot was ranked as a moderate priority in QLD, VIC, NSW, WA & SA. It is favoured by warm, wet conditions and is more prevalent in field-grown eggplant. It can also be a problem post-harvest. Management should include the use of disease-free seed, hot water treatment of seeds, and the use of crop rotation and cover crops.							
<i>Aureobasidium pullulans</i> (Botector) Nufarm	-	Biological		P		Registered in grapes and berries for control of <i>Botrytis</i> and suppression of several other fungal pathogens (<i>Anthraco</i> se, <i>Phomopsis</i> and <i>Rhizopus</i>) in berries.	
Sclerotinia Rot (<i>Sclerotinia</i> spp.)							
Priority: Moderate							
Sclerotinia Rot was ranked as a moderate priority in QLD, VIC, NSW, WA & SA. <i>Sclerotinia</i> is a soil-borne fungal pathogen that attacks a wide range of vegetables. The fungus can survive in the soil for many years.							
Dazomet (Basamid, Cerlong)	8F	Fumigant	NR	A	ALL	Registered as a pre-plant fumigant in seed beds for control of soil fungi including <i>Pythium</i> , <i>Phytophthora</i> , <i>Sclerotinia</i> , <i>Sclerotium</i> , <i>Rhizoctonia</i> , <i>Verticillium</i> , <i>Plasmodiophora</i> , <i>Armillaria</i> and <i>Fusarium</i> spp. Apply granules to the soil surface and incorporate and seal the soil surface immediately. Do not plant into soil until a positive germination test has been conducted.	-
Metham Sodium	-	Fumigant	NR	A	ALL	Registered in food crops as a pre-plant fumigant for control of fungus diseases including <i>Rhizoctonia</i> , <i>Pythium</i> , <i>Fusarium</i> , <i>Phytophthora</i> , <i>Verticillium</i> , <i>Sclerotinia</i> and Club Root of crucifers. Applied as a soil injection, soil surface spray in front of a rotary tiller or through approved trickle irrigation systems.	-
Boscalid (Filan) BASF	7	Protective	14	P-A	ALL	Registered in eggplant for control of Early Blight. Registered in Brassica vegetables for the control of Sclerotinia Rot .	-

Disease / Active Ingredient (Trade Name)	Chemical group	Activity	WHP, days	Availability	States	Comments	Regulatory risk
<i>Bacillus amyloliquefaciens</i> Strain QST 713 (Serenade Prime Soil Ameliorant and Biofungicide) Bayer	BM 02	Biological	NR	P-A	ALL	Registered in vegetables for application to soil to improve bioavailability of soil resources to horticultural crops.	-
Cyprodinil + Fludioxonil (Switch) Syngenta	9+12	Protective & Curative		P		Registered in several vegetable crops including leafy vegetables (including spinach, silverbeet, kale, endive, mustard, cress chard, rocket, Asian leafy greens and Chinese cabbage), peas, beans, leafy vegetables and lettuce for control of <i>Sclerotinia</i> , <i>Botrytis</i> and other diseases.	R3
Fluopyram + Tebuconazole (Luna Experience) Bayer	3+7	Protective		P		Registered in bananas for control of Yellow Sigatoka, Leaf Speckle and Cordana Leaf Spot. US registration for use in almond, brassica leafy vegetables, legume vegetables, melons and various fruit crops for control of a variety of diseases including Powdery Mildew, Alternaria Leaf Spot, Gummy Stem Blight, <i>Septoria</i> , <i>Botrytis</i> , <i>Cladosporium</i> , <i>Cercospora</i> , <i>Sclerotinia</i> , Rust and Anthracnose and suppression of <i>Rhizoctonia</i> .	R3
NUL3446	TBC			P		Fungicide in development from Nufarm with activity on <i>Sclerotinia</i> spp.	-
Anthracnose (<i>Colletotrichum</i> spp.)							
Priority: Moderate							
Anthracnose was ranked as a moderate priority in VIC, QLD, WA & SA and as a low priority in NSW. It requires both pre- and post-harvest treatments. This fungus can be seed-borne and carry over on crop residue in the soil. It is spread in water droplets and is favoured by warm, humid weather. No fungicides are registered for control although it is thought that protectants that target Downy Mildew and Botrytis will have some effect and post-harvest treatments would afford protection as well. Regular spraying and orchard hygiene are important to prevent crop damage.							
Mancozeb PER14593	M3	Protective	7 G:14	A	ALL (excl. VIC)	Permitted for use in eggplant for control of Downy Mildew, Anthracnose & Alternaria. [Max no. of applications & re-treatment interval not specified]	R2

Disease / Active Ingredient (Trade Name)	Chemical group	Activity	WHP, days	Availability	States	Comments	Regulatory risk
Zineb PER14839	M3	Protective	7	A	ALL (excl. VIC)	Permitted for use in eggplant for control of Anthracnose . [Max. no. of applications not specified; re-treatment interval: 7 d]	R2
<i>Bacillus amyloliquefaciens</i> Strain QST 713 (Serenade Opti) Bayer PER88032	BM 02	Biological	NR	P-A	ALL (excl. VIC)	Permitted in eggplant for control of Alternaria Early Blight, Botrytis Grey Mould, Powdery Mildew and suppression of Bacterial Spot. Registered for control of Anthracnose in avocado and several tropical fruits. Registered in US for control of various fungal diseases in a range of fruits and vegetables.	-
<i>Aureobasidium pullulans</i> (Botector) Nufarm	BM 02	Biological		P		Registered in grapes and berries for control of <i>Botrytis</i> and suppression of several other fungal pathogens (Anthracnose , <i>Phomopsis</i> and <i>Rhizopus</i>) in berries.	-
Benzovindiflupyr + Propiconazole (Elatus) Syngenta	7+3	Protectant & Curative		P		Current AU registration 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 , Grey Mould and Powdery Mildew. No MRLs required for biological product.	-
Copper Oxychloride	M1	Protective		P		Registered in cucurbits for control of Angular Leaf Spot, Bacterial Leaf Spot, Downy Mildew, Anthracnose , Gummy Stem Blight.	-
Florypicoxamid (Adavelt) Corteva	21	Protectant & Curative		P		New Mode of Action fungicide being developed in AU. Corteva claim activity on Anthracnose . Scheduled for JMPR evaluation in 2023.	-
Fluopyram + Tebuconazole (Luna Experience) Bayer	7+3	Protectant & Curative		P		Registered in bananas for control of Yellow Sigatoka, Leaf Speckle and Cordana Leaf Spot. US registration for use in almond, brassica leafy vegetables, legume vegetables, melons and various fruit crops for control of a variety of diseases including Powdery Mildew, Alternaria Leaf Spot, Gummy Stem Blight, <i>Septoria</i> , <i>Botrytis</i> , <i>Cladosporium</i> , <i>Cercospora</i> , <i>Sclerotinia</i> , Rust and Anthracnose and suppression of <i>Rhizoctonia</i> .	R3

Disease / Active Ingredient (Trade Name)	Chemical group	Activity	WHP, days	Availability	States	Comments	Regulatory risk
Fluopyram + Trifloxystrobin (Luna Sensation) Bayer	7+11	Protective & Curative		P		Registered in Tropical and Sub-tropical Fruit for control of Anthracnose and Stem End Rot.	-
Isofetamid (Kenja) ISK / AgNova	7	Protective & Curative		P	ALL	Registered in berries for control of Botrytis Grey Mould. US registration for control of Grey Mould, Powdery Mildew and Anthracnose in low-growing berries.	-
Powdery Mildew (<i>Leveillula taurica</i>)							
Priority: Moderate							
Powdery Mildew was ranked as a moderate priority in QLD, WA & SA and as a low priority in VIC & NSW. The characteristic white, powdery growth occurs on plants infected by this fungus. Photosynthetic efficiency is reduced in affected leaves and fruit can be scarred and damaged, causing produce to be downgraded. Severe outbreaks can cause defoliation, exposing fruit to sunburn and predisposing them to secondary rots.							
<i>Bacillus amyloquefaciens</i> Strain QST 713 (Serenade Opti) PER88032	BM 02	Biological	NR	A	ALL (excl. VIC)	Permitted for use in eggplant for control of Alternaria Early Blight, Botrytis Grey Mould, Powdery Mildew & suppression of Bacterial Spot (<i>Xanthomonas</i> spp.) [Max. no. of applications not specified; re-treatment interval 5-7 d]	-
Bupirimate (Nimrod)	8	Protective & Curative	1	A	ALL	Registered in eggplant for control of Powdery Mildew . [Max. 3 applications per crop; re-treatment interval 7-14 d]	-
Hydrogen Peroxide + Peroxyacetic Acid (Peratec Plus)	M	Non-Selective Surface Sterilant	1	A	ALL	Registered in eggplant for control of Powdery Mildew . Uses subject to CropLife resistance management strategies. [Max. 4 applications per crop; re-treatment interval not specified]	-
Penthiopyrad (Fontelis) Corteva	7	Systemic	NR NG	A	ALL	Registered in eggplant for control of Powdery Mildew , Grey Mould and Early Blight. Uses subject to CropLife resistance management strategies. [Max 2 sequential treatments; re-treatment interval 7-10 d]	-
Sulphur	M2	Contact	NR	A	ALL	Registered in vegetables for control of Powdery Mildew . Apply when disease is first seen [Max. no. of applications not specified; retreatment interval 7-21 d]	-
Triadimenol (Bayfidan) Bayer	3	Protective & Curative	1	A	ALL	Registered in eggplant for control of Powdery Mildew . Apply when disease first appears. [Max 4 applications per crop; re-treatment interval 5-10 d]	R3

Disease / Active Ingredient (Trade Name)	Chemical group	Activity	WHP, days	Availability	States	Comments	Regulatory risk
ADM1700F Adama	TBC			P		Fungicide in development from Adama with Powdery Mildew activity	-
Azoxystrobin + Difenconazole (Amistar Top) Syngenta	3+11	Protective & Curative		P		Registered in carrots for control of <i>Alternaria</i> , <i>Cercospora</i> and Powdery Mildew ; <i>Alternaria</i> and <i>Phytophthora</i> in potatoes; <i>Alternaria</i> , <i>Phytophthora</i> , <i>Sclerotinia</i> and Powdery Mildew in tomatoes.	R3
BLAD (Problad Plus)	BM 01	Biological	NR	P		Registered in stone fruit for control of Brown Rot and Blossom Blight. Pending US registration in several crops for control of a variety of fungal diseases including <i>Botrytis</i> and Powdery Mildew .	-
Cyflufenamid (Flute) AgNova	U6	Protective & Curative		P		Registered in strawberries and strawberry runners for control of Powdery Mildew .	-
Florypicoxamid (Adavelt) Corteva	21	Protective & Curative		P		New Mode of Action fungicide being developed in AU. Corteva claim activity on Powdery Mildew . Scheduled for JMPR evaluation in 2023.	-
Fluopyram + Tebuconazole (Luna Experience) Bayer	7+3	Protective & Curative		P		Registered in bananas for control of Yellow Sigatoka, Leaf Speckle and Cordana Leaf Spot. US registration for use in almond, brassica leafy vegetables, legume vegetables, melons and various fruit crops for control of a variety of diseases including Powdery Mildew , <i>Alternaria</i> Leaf Spot, Gummy Stem Blight, <i>Septoria</i> , <i>Botrytis</i> , <i>Cladosporium</i> , <i>Cercospora</i> , <i>Sclerotinia</i> , Rust and Anthracnose and suppression of <i>Rhizoctonia</i> .	R3
Fluopyram + Trifloxystrobin (Luna Sensation) Bayer	7+11	Protective & Curative		P		Registered in apples for control of Powdery Mildew , Black Spot and <i>Alternaria</i> .	-
Isofetamid (Kenja) ISK / AgNova	7	Protective & Curative		P		Registered in berries for control of Botrytis Grey Mould. US registration for control of Grey Mould, Powdery Mildew and Anthracnose in low-growing berries.	-
NUL3195 Nufarm	TBC			P		Fungicide in development from Nufarm with activity on Powdery Mildew and <i>Botrytis</i> .	-

Disease / Active Ingredient (Trade Name)	Chemical group	Activity	WHP, days	Availability	States	Comments	Regulatory risk
Potassium Bicarbonate (EcoCarb)	M2	Curative		P		Registered in peppers, tomato (glasshouse), cucurbits, grapevine, rose and strawberry for control of Powdery Mildew .	-
Pydiflumetofen + Fludioxonil (Miravis Prime) Syngenta	7+12	Protective & Curative		P		Registration pending in Australia for control of <i>Botrytis</i> , <i>Alternaria</i> , Powdery Mildew & Anthracnose in berries.	R3
Pyriofenone (Kusabi) ISK	50			P		Registered for control of Powdery Mildew in cucurbits and grapes.	-
Tomato Spotted Wilt Virus (Tospovirus)							
Priority: Moderate							
Tomato Spotted Wilt Virus (TSWV) was ranked as a moderate priority in QLD, NSW & WA and as a low priority in VIC & SA. Viruses are transmitted by several Aphid species in a non-persistent manner. Management options include use of tolerant varieties, crop rotation with non-solanaceous crops, controlling vectors and alternate hosts, and general farm hygiene.							
Grey Mould (<i>Botrytis cinerea</i>)							
Priority: Low							
Grey Mould was ranked as a moderate priority in VIC, NSW & SA, and as a low priority in QLD & WA. <i>Botrytis</i> spp. which causes Grey Mould is one of the most common fungal diseases of fruit and vegetable crops and can affect plants at most stages of production. Affected fruit become water-soaked and soft. They are rapidly covered with a thick grey mould. Other plant parts such as stems can also be affected. <i>Botrytis</i> also causes secondary rots on fruit and vegetables in storage or transit and in the marketplace.							
<i>Bacillus amyloquefaciens</i> Strain QST 713 (Serenade Opti) Bayer PER88032	BM 02	Biological	NR	A	ALL (excl. VIC)	Permitted for use in eggplant for control of <i>Alternaria</i> Early Blight, Botrytis Grey Mould , Powdery Mildew & suppression of Bacterial Spot (<i>Xanthomonas</i> spp.) [Max. no. of applications not specified; re-treatment interval 5-7 d]	-
Chlorothalonil (Bravo) PER82895	M5	Protective	3 NG	A	ALL (excl. VIC)	Permitted for use in eggplant for control of Botrytis Grey Mould , <i>Alternaria</i> , Downy Mildew & Grey Leaf Spot. [Max. no. of applications and re-treatment interval not specified]	R3

Disease / Active Ingredient (Trade Name)	Chemical group	Activity	WHP, days	Availability	States	Comments	Regulatory risk
Iprodione (Rovral) PER80910	2	Protective	7	A	ALL (excl. VIC)	Permitted for use in eggplant for control of Grey Mould . Commence spraying 3-4 weeks after transplanting. [Max. no. of applications not specified; re-treatment interval 14 d]	R3
Penthiopyrad (Fontelis) Corteva	7	Protective	NR NG	A	ALL	Registered in eggplant for control of Powdery Mildew, Grey Mould & Early Blight. Uses subject to CropLife resistance management strategies. [Max 2 sequential treatments; re-treatment interval 7-10 d]	-
Boscalid (Filan) BASF	7	Protective	14	P-A	ALL	Registered in eggplant for control of Early Blight. Registered in grapevines and onions for control of Botrytis .	-
<i>Aureobasidium pullulans</i> (Botector) Nufarm	-	Biological		P		Registered in grapes and berries for control of Botrytis and suppression of several other fungal pathogens (Anthracnose, <i>Phomopsis</i> and <i>Rhizopus</i>) in berries.	-
<i>Bacillus amyloliquefaciens</i> (Serifel) BASF	BM 02	Biological		P		Registered for control of Botrytis in grapes and strawberries. US registration in peppers for the management of <i>Pythium</i> spp., <i>Phytophthora</i> spp., <i>Fusarium</i> spp., <i>Rhizoctonia</i> spp.	-
BLAD (Problad Plus)	BM 01	Biological	NR	P		Registered in stone fruit for control of Brown Rot and Blossom Blight. Pending US registration in several crops for control of a variety of fungal diseases including Botrytis and Powdery Mildew.	-
DC-126 Bayer	NEW	TBC		P		New product in development from Bayer with Botrytis activity.	-
Fenpyrazamine (Prolectus) Sumitomo	17	Protective & Curative		P		Registered for Botrytis control in grapes and has registrations for Botrytis control in the US for various crops.	-
Florylpicoxamid (Adavelt) Corteva	21	Protective & Curative		P		New Mode of Action fungicide being developed in AU. Corteva claim activity on Grey Mould . Scheduled for JMPR evaluation in 2023.	-

Disease / Active Ingredient (Trade Name)	Chemical group	Activity	WHP, days	Availability	States	Comments	Regulatory risk
Fluopyram + Tebuconazole (Luna Experience) Bayer	3+7	Protective & Curative		P		Registered in bananas for control of Yellow Sigatoka, Leaf Speckle and Cordana Leaf Spot. US registration for use in almond, brassica leafy vegetables, legume vegetables, melons and various fruit crops for control of a variety of diseases including Powdery Mildew, Alternaria Leaf Spot, Gummy Stem Blight, <i>Septoria</i> , Botrytis , <i>Cladosporium</i> , <i>Cercospora</i> , <i>Sclerotinia</i> , Rust and Anthracnose and suppression of <i>Rhizoctonia</i> .	R3
Fluopyram + Trifloxystrobin (Luna Sensation) Bayer	7+11	Protective & Curative		P		Registered in pome fruit, stone fruit, almonds and tropical and sub-tropical fruit for the control of various diseases, including Powdery Mildew, Anthracnose and Alternaria. US registration for control of Botrytis in cherries, potatoes, pistachio, watermelon and wine grapes.	-
Isofetamid (Kenja) ISK	7	Protective		P		Registered in berries for control of Botrytis .	-
NUL3195 Nufarm	TBC			P		New product from Nufarm with Botrytis activity.	-
Pydiflumetofen + Fludioxonil (Miravis Prime) Syngenta	7+12	Protective & Curative		P		Registration pending in Australia for control of Botrytis , <i>Alternaria</i> , Powdery Mildew & Anthracnose in berries. US registration for suppression of Grey Mould in fruiting vegetables.	R3
SYNCUF29 Syngenta	TBC			P		New product from Syngenta with Botrytis activity.	-
Damping Off (<i>Pythium</i> spp., <i>Rhizoctonia solani</i> , <i>Phytophthora</i> spp.)							
Priority: Low							
Damping Off was ranked as a moderate priority in VIC & SA and as a low priority in QLD, NSW & WA. The disease attacks seedlings at the 1-2 leaf stage, causing water-soaked lesions on the stem and roots. Management options include the use of seed treatments and fumigation, along with general farm hygiene.							
Metham Sodium	-	Fumigant	NR	A	ALL	Registered in food crops as a pre-plant fumigant for control of fungus diseases including Rhizoctonia , Pythium , <i>Fusarium</i> , Phytophthora , <i>Verticillium</i> , <i>Sclerotinia</i> and Club Root of crucifers. Applied as a soil injection, soil surface spray in front of a rotary tiller or through approved trickle irrigation systems.	-

Disease / Active Ingredient (Trade Name)	Chemical group	Activity	WHP, days	Availability	States	Comments	Regulatory risk
Phosphorous Acid (Agri-Fos) PER81408	33	Contact	1	A	ALL (excl. VIC)	Permitted for use in eggplant for control of <i>Phytophthora</i> . [Max 4 applications per crop; re-treatment interval 7 d]	-
<i>Bacillus amyloliquefaciens</i> Strain QST 713 (Serenade Prime Soil Ameliorant and Biofungicide) Bayer	BM 02	Biological	NR	P-A	ALL	Registered in vegetables for application to soil to improve bioavailability of soil resources to horticultural crops.	-
Azoxystrobin + Difenconazole (Amistar Top) Syngenta	3+11	Protective & Curative		P		Registered in carrots for control of Alternaria, Cercospora and Powdery mildew; Alternaria and Phytophthora in potatoes; Alternaria, Phytophthora , Sclerotinia and powdery mildew in tomatoes.	R3
<i>Bacillus amyloliquefaciens</i> (Serifel) BASF	BM 02	Biological		P		Registered for control of <i>Botrytis</i> in grapes and strawberries in Australia. Registered in the USA in peppers for the management of <i>Pythium</i> spp., <i>Phytophthora</i> spp., <i>Fusarium</i> spp., Rhizoctonia spp.	-
Fludioxonil + Sedaxane (Vibrance Premium) Syngenta	7+12	Protective Seed Treatment		P		Registered in potatoes for control of black scurf (Rhizoctonia), Silver Surf, Black Rot, Gangrene and Fusarium Dry Rot and suppression of Scab. ST17000 is generating data to support a registration for control of Rhizoctonia in beetroot.	R3
Metalaxyl-M (Ridomil Gold 25G) Syngenta	4	Protective		P		Registered for control of Damping Off in broccoli, brussel sprouts, cabbage, capsicum or pepper, carrot, cauliflower, cucurbit and tomato. MT18018 is generating data to support a new minor use permit for control of Damping Off in beetroot.	
<i>Streptomyces lydicus</i> (Actinovate) Novozymes Bioag	BM 02	Biological		P		Registered in strawberries and tomato for control of Phytophthora and as a seed treatment in vegetables for control of Pythium , <i>Fusarium</i> and Rhizoctonia . Apply prior to onset of disease season.	-

Disease / Active Ingredient (Trade Name)	Chemical group	Activity	WHP, days	Availability	States	Comments	Regulatory risk
Thiophanate-Methyl + Etridiazole (Banrot)	1+14	Protective		P		Registered in container grown ornamentals and in ground bedding plants as a post plant soil drench for control of <i>Pythium</i> , <i>Phytophthora</i> , <i>Rhizoctonia</i> and <i>Thielaviopsis</i> .	-
Bacterial Spot (<i>Xanthomonas campestris</i> pv. <i>vesicatoria</i>)							
Priority: Low							
Bacterial Spot was ranked as a low priority in QLD, VIC, NSW, WA & SA. It is favoured by hot, humid conditions as well as the use of overhead irrigation.							
<i>Bacillus amyloquefaciens</i> (Serenade Opti) Bayer PER88032	BM 02	Biological	NR	A	ALL (excl. VIC)	Permitted for use in eggplant for control of Alternaria Early Blight, Botrytis Grey Mould, Powdery Mildew & suppression of Bacterial Spot (<i>Xanthomonas</i> spp.) [Max. no. of applications not specified; re-treatment interval 5-7 d]	-
Copper PER14038	M1	Protective	1	A	ALL (excl. VIC)	Permitted for use in eggplant for control of Bacterial Spot , Speck & Canker. [Max. no. of applications and re-treatment interval not specified]	-
Acibenzolar-S-Methyl (Actigard Plant Activator) Syngenta	P01	Protective		P		Registered in tomatoes for suppression of Bacterial Spot (<i>Xanthomonas campestris</i>), Bacterial Speck and Bacterial Canker.	-
Cercospora Leaf Spot (<i>Cercospora</i> spp.)							
Priority: Low							
Cercospora Leaf Spot was ranked as a low priority in VIC, QLD, NSW, WA & SA.							
Metiram (Polyram) BASF	M3	Protective	14	A	ALL	Registered in eggplant for control of Cercospora Leaf Spot and Alternaria Leaf Spot. Apply when disease first appears. [Max no. of applications not specified; re-treatment interval 7-10 d]	R2
Hydrogen Peroxide + Peroxyacetic Acid (Peratec Plus)	M	Curative		P-A		Registered in eggplant for control of Powdery Mildew. Registered in celery for control of Cercospora Leaf Spot .	-

Disease / Active Ingredient (Trade Name)	Chemical group	Activity	WHP, days	Availability	States	Comments	Regulatory risk
Zineb	M3	Protective	7	P-A	ALL (excl. VIC)	Permitted for use in eggplant for control of Anthracnose. Registered in Cauliflower and Cabbages for the control of Cercospora Leaf Spot .	R2
Fluopyram + Tebuconazole (Luna Experience) Bayer	3+7	Protective & Curative		P		Registered in bananas for control of Yellow Sigatoka, Leaf Speckle and Cordana Leaf Spot. US registration for use in almond, brassica leafy vegetables, legume vegetables, melons and various fruit crops for control of a variety of diseases including Powdery Mildew, Alternaria Leaf Spot, Gummy Stem Blight, <i>Septoria</i> , <i>Botrytis</i> , <i>Cladosporium</i> , Cercospora , <i>Sclerotinia</i> , Rust and Anthracnose and suppression of <i>Rhizoctonia</i> .	R3
Irish (Late) Blight (<i>Phytophthora infestans</i>)							
Priority: Low							
Irish (Late) blight was ranked as a low priority in VIC, QLD, NSW, WA & SA.							
Chloropicrin (Agrocelhone NE Soil Fumigant)	8	Fumigant	NR	A	ALL	Registered as a general fumigant to control nematodes, insects, <i>Pythium</i> , Phytophthora , <i>Fusarium</i> , and <i>Verticillium</i> . Do not plant for 10 d after soil treatment.	-
Dazomet (Basamid, Cerlong)	8F	General pre-plant soil fumigation	NR	A	ALL	Registered as a general fumigant to control Nematodes, insects, weeds and soil fungi <i>Pythium</i> , Phytophthora , <i>Fusarium</i> , and <i>Verticillium</i> . Do not plant for 14- 42 d after soil treatment.	-
Metham Sodium	-	Fumigant	NR	A	ALL	Registered in food crops as a pre-plant fumigant for control of fungus diseases including <i>Rhizoctonia</i> , <i>Pythium</i> , <i>Fusarium</i> , Phytophthora , <i>Verticillium</i> , <i>Sclerotinia</i> and Club Root of crucifers. Applied as a soil injection, soil surface spray in front of a rotary tiller or through approved trickle irrigation systems.	-
Phosphorous acid (Agri-Fos) PER81408	33	Curative	1	A	ALL (excl. VIC)	Permitted for use in eggplant for control of Phytophthora . [Max 4 applications per crop; re-treatment interval 7 d]	-
Zineb	M3	Protective	7	A	ALL	Registered in eggplant for control of Early Blight and Late Blight . Apply when disease threatens. [Max no. of applications not specified; re-treatment interval 7 d]	R2

Disease / Active Ingredient (Trade Name)	Chemical group	Activity	WHP, days	Availability	States	Comments	Regulatory risk
<i>Bacillus amyloliquefaciens</i> strain MBI 600 (Serifel) BASF	BM 02	Biological		P		Registered for control of <i>Botrytis</i> in grapes and strawberries in Australia. Registered in the USA in peppers for the management of <i>Pythium</i> spp., <i>Phytophthora</i> spp. , <i>Fusarium</i> spp., <i>Rhizoctonia</i> spp.	
<i>Streptomyces lydicus</i> (Actinovate) Novozymes BioAg	BM 02	Biological		P		Registered in strawberries and tomato for control of <i>Phytophthora</i> and as a seed treatment in vegetables for control of <i>Pythium</i> , <i>Fusarium</i> and <i>Rhizoctonia</i> .	-
Septoria (<i>Septoria</i> spp.)							
Priority: Low							
Septoria was ranked as a low priority in VIC, QLD, NSW, WA & SA. Infection can survive on the old leaves removed at harvest, on weeds, and as spores on seed. The use of drip irrigation is recommended rather than sprinklers.							
Dimethomorph (Acrobat) BASF	40	Protective & Curative		P		Registered in cucurbits for control of Downy Mildew, Anthracnose, Gummy Stem Blight, Alternaria Leaf Spot, and Septoria Spot .	-
Florypicoxamid (Adavelt) Corteva	21	Protective & Curative		P		New Mode of Action fungicide being developed in AU. Corteva claim activity on Septoria . Scheduled for JMPR evaluation in 2023.	-
Fluopyram + Tebuconazole (Luna Experience) Bayer	3+7	Protective & Curative		P		Registered in bananas for control of Yellow Sigatoka, Leaf Speckle and Cordana Leaf Spot. US registration for control of Septoria Leaf Spot in dry and succulent beans and pistachios.	R3

Disease / Active Ingredient (Trade Name)	Chemical group	Activity	WHP, days	Availability	States	Comments	Regulatory risk
Target Spot / Early Blight (<i>Alternaria solani</i>)							
Priority: Low							
Target Spot (Early Blight) was ranked as a low priority in VIC, QLD, NSW, WA & SA. The disease causes leaf lesions which can spread and cause the whole leaf to collapse and die. A protectant fungicide program provides effective control. The use of surface irrigation is recommended rather than sprinklers.							
<i>Bacillus amyloquefaciens</i> (Serenade Opti) Bayer PER88032	BM 02	Biological	NR	A	ALL (excl. VIC)	Permitted in eggplant for control of Alternaria Early Blight , Botrytis Grey Mould, Powdery Mildew & suppression of Bacterial Spot (<i>Xanthomonas</i> spp.). [Max. no. of applications not specified; re-treatment interval 5-7 d]	-
Boscalid (Filan) BASF	7	Protective	14	A	ALL	Registered in eggplant for the control of Early Blight . [Max 4 applications per crop; re-treatment interval 10-14 d]	-
Chlorothalonil (Bravo) PER82895	M5	Protective	3 NG	A	ALL (excl. VIC)	Permitted for use in eggplant for control of Botrytis Grey Mould, Alternaria , Downy Mildew & Grey Leaf Spot. [Max. no. of applications & re-treatment interval not specified]	R3
Mancozeb PER14593	M3	Protective	7 G:14	A	ALL (excl. VIC)	Permitted for use in eggplant for control of Downy Mildew, Anthracnose & Alternaria . [Max no. of applications & re-treatment interval not specified]	R2
Metiram (Polyram) BASF	M3	Protective	14	A	ALL	Registered in eggplant for control of Cercospora Leaf Spot & Alternaria Leaf Spot . Apply when disease first appears. [Max no. of applications not specified; re-treatment interval 7-10 d]	R2
Metiram+ Pyraclostrobin (Aero) BASF	M3+11	Protective	28	A	ALL	Registered in eggplant for control of Early Blight . Apply when disease first appears. Use subject to CropLife resistance management strategies. [Max 2 sequential treatments; re-treatment interval 7-10 d]	R2
Penthiopyrad (Fontelis) Corteva	7	Protective	NR NG	A	ALL	Registered in eggplant for control of Powdery Mildew, Grey Mould & Early Blight . Use subject to CropLife resistance management strategies. [Max 2 sequential treatments; re-treatment interval 7-10 d]	-
Zineb	M3	Protective	7	A	ALL	Registered in eggplant for control of Early Blight & Late Blight. Apply when disease threatens. [Max no. of applications not specified; re-treatment interval 7 d]	R2

Disease / Active Ingredient (Trade Name)	Chemical group	Activity	WHP, days	Availability	States	Comments	Regulatory risk
Azoxystrobin + Difenconazole (Amistar Top) Syngenta	3+11	Protective & Curative		P		Registered in carrots for control of <i>Alternaria</i> , <i>Cercospora</i> & Powdery Mildew; <i>Alternaria</i> and <i>Phytophthora</i> in potatoes; <i>Alternaria</i> , <i>Phytophthora</i> , <i>Sclerotinia</i> and Powdery Mildew in tomatoes.	R3

4.2 Insect and mite pests of eggplant

4.2.1 Insect and mite pest priorities

Common name	Scientific name
High	
Two-Spotted Mites	<i>Tetranychus urticae</i>
Western Flower Thrips	<i>Frankliniella occidentalis</i>
Silverleaf Whitefly	<i>Bemisia tabaci</i>
Greenhouse Whitefly	<i>Trialeurodes vaporariorum</i>
Green Peach Aphid	<i>Myzus persicae</i>
Eggfruit Caterpillar	<i>Sceliodes cordalis</i>
Moderate	
Cotton Bollworm / Corn Earworm	<i>Helicoverpa armigera</i>
Native Budworm	<i>Helicoverpa punctigera</i>
Cluster Caterpillar	<i>Spodoptera litura</i>
Cutworms	<i>Agrotis</i> spp.
Melon Thrips	<i>Thrips palmi</i>
Onion Thrips	<i>Thrips tabaci</i>
Green Vegetable Bug	<i>Nezara viridula</i>
Rutherglen Bug	<i>Nysius vinitor</i>
Broad Mite	<i>Polyphagotarsonemus latus</i>
Tomato Russet Mite	<i>Aculops lycopersici</i>

Common name	Scientific name
Low	
Leafhoppers / Jassids	Cicadellidae
Green Mirid	<i>Creontiades dilutus</i>
Queensland Fruit Fly	<i>Bactrocera tryoni</i>
Mediterranean Fruit Fly	<i>Ceratitis capitata</i>
Field Cricket	<i>Teleogryllus commodus</i>
Mole Cricket	<i>Gryllotalpa</i> spp.
Cucumber Fruit Fly	<i>Bactrocera cucumis</i>
Grasshoppers	Orthoptera
Ladybirds	<i>Henosepilachna</i> spp.
Loopers	<i>Chrysodeixis</i> spp.
Tomato Leafminer	<i>Phthorimaea operculella</i>
Vegetable Weevil	<i>Listroderes difficilis</i>
Fungus Gnats	<i>Sciaridae</i> spp.

New incursions of an exotic pest which poses a potential threat and other non-ranked pests.

Common name	Scientific name
Fall Armyworm	<i>Spodoptera frugiperda</i>
Tomato Potato Psyllid	<i>Bactericera cockerelli</i>
Vegetable Leafminer	<i>Liriomyza sativae</i>
Serpentine Leafminer	<i>Liriomyza huidobrensis</i>
American Serpentine Leafminer	<i>Liriomyza trifolii</i>

The feedback received from the different states ranked Aphids, Eggfruit Caterpillar, Mites, Thrips including Western Flower Thrips and Whiteflies as high priority pests. Available and potential products for these high priority insects and mites are in Section 4.2.2.

Resistance Management

There are several insecticide management strategies that apply to various vegetables on the CropLife website⁴, including Silverleaf Whitefly, Mites, Thrips & Aphids.

Further development and extension of IPM strategies and best management practices that can be implemented in the management of sucking insects and mites in vegetables may be warranted.

⁴ www.croplife.org.au/resources/programs/resistance-management/

4.2.2 Available and potential products for priority insects and mites

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

Availability		Regulatory risk (refer to Appendix 6)	
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 2018-19 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
Two-Spotted Mite (<i>Tetranychus urticae</i>), Priority: High								
Two-Spotted Mites were ranked as a high priority in VIC, QLD, NSW, WA & SA. Two-Spotted Mite causes damage to the aerial parts of the plant providing entry points to various fungal pathogens.								
Abamectin	6	Contact & Ingestion	3	A	ALL	Registered in eggplant for control of Two-Spotted Mite and Western Flower Thrips. [Max. 2 consecutive applications per crop; re-treatment interval 28 d]	M Bee:H	-
<i>Beauveria bassiana</i> (Velifer) BASF	UN	Biological	NR	A	ALL	Registered in protected vegetables and ornamentals for suppression of various pests including: Western Flower Thrips, Onion Thrips, Greenhouse Whitefly, Silverleaf Whitefly, Sweet Potato Whitefly, Green Peach Aphid & Two-Spotted Spider Mites . [Max. 3 application per crop; re-treatment interval 3-14 d]	L Bee:L	-
Bifenazate (Acramite) UPL	20D	Contact & Ingestion	1	A	ALL	Registered in eggplant for control of Two-Spotted Mite and Bryobia Mite. [Max. 1 application per season]	L Bee:H	-

Pest / Active Ingredient (Trade Name)	Chemical group	Activity	WHP, days	Availability	States	Comments	Impact on beneficials	Regulatory risk
Bifenthrin (Astral) Nufarm	3A	Contact	1	A	ALL	Registered in eggplant for control of Silver Leaf Whitefly, Two Spotted Mite , and Greenhouse Whitefly. [Max. 2 consecutive applications per crop; re-treatment interval 7 d]	VH Bee:H	R3
Dimethoate	1B	Contact	14	A	ALL	Registered in eggplant for control of Aphids, Jassids, Mites , Leafhoppers, Green Vegetable Bug, Thrips and Wingless Grasshoppers. Apply when grasshoppers appear and re-apply as required. [Max no. of applications per crop & re-treatment interval not specified]	H Bee:H	R1
Hexythiazox (Calibre) Nufarm PER14765	10A	Contact / IGR	3	A	ALL	Permitted for use in eggplant (field and protected) for control of Tomato Russet Mite, Broad Mite, Two-Spotted Mite & Tomato Red Mite. [Max 1 application per crop]	L Bee:L	-
Milbemectin (Milbeknock)	6	Contact & Ingestion	1	A	ALL	Registered in eggplant for control of Two-Spotted Mite . [Max. 2 consecutive applications per crop; re-treatment interval 14 d]	M Bee:H	-
Petroleum Oil PER12221	UN	Contact	1	A	ALL (excl. VIC)	Permitted for use in eggplant for control of Aphids, Green Mirid, Green Vegetable Bug, Grey Cluster Bug, Leafhoppers, Mites , Rutherglen Bug, Thrips, Silverleaf Whitefly and Greenhouse Whitefly. [Max. no. of applications and re-treatment interval not specified]	VL Bee:L	-
Phorate (Thimet) PER8930	1B	Contact	70	A	ALL	Permitted for use in eggplant for control of Aphids, Jassids, Mites , Thrips & Onion Maggot. [Max. no. of applications and re-treatment interval not specified].	H Bee:H	R3
Potassium Salts of Fatty Acids (Natrasoap)	-	Contact	NR	A	ALL	Registered in vegetables for control of Aphids, Mealy Bug, Thrips, Two Spotted Mite , Spider Mite and Whitefly. Apply when temperatures are cooler. [Max no. of applications not specified; re-treatment interval 5-7 d]	L Bee:L	-
Propargite (Omite)	12C	Contact	7	A	ALL	Registered in vegetables for control of Spider Mites (QLD and WA) and Two Spotted Mites (All states). Apply when pests appear and repeat when necessary. [Max. no. of applications and re-treatment interval not specified]	M Bee:L	R3

Pest / Active Ingredient (Trade Name)	Chemical group	Activity	WHP, days	Availability	States	Comments	Impact on beneficials	Regulatory risk
Sulphur	M2	Contact	NR	A	Variable refer to label	Registered in vegetables for control of Bean Spider Mite (NSW) and Two Spotted Mites (VIC, TAS, SA & WA). [Max no. of applications not specified; re-treatment interval 14-21 d]	L Bee:L	-
Spiromesifen (Oberon) Bayer	23	Ingestion		P		Hort Innovation ST19020 project contracted in June 2020 is generating data for a label registration to control Mites in multiple commodities, including fruiting vegetables. US registration for control of various mites in various crops, including eggplant.	M Bee:VL	-
Cyflumetofen (Danisaraba) BASF	25A	Contact		P		BASF is seeking registration in Australia for the control of Spider Mites in various crops.	L Bee:L	-
Diafenthiuron + Cyantraniliprole (Minecto Forte) Syngenta	12A+28	Contact & Ingestion		P		Registered for control of Silverleaf Whitefly, Heliothis, Potato Moth, Cucumber Moth, Cluster Caterpillar, Aphids, Two-Spotted Mite and suppression of Western Flower Thrips, Tomato Thrips and Plague Thrips in cucurbits and fruiting vegetables.	M Bee:VH	-
Etoxazole (Paramite) Sumitomo	10B	IGR / Contact		P		Registered in pome and stone fruits, almonds and grape for control of Two-Spotted Mites . New permit is pending for the use of etoxazole for control of Two-Spotted Mites in sweet corn.	L Bee:VL	-
SYNFOI21 Syngenta	New			P		SYNFOI21 is not registered but the first global application is proposed for 2023 for Thrips, Bugs, Mites and Caterpillars.	-	-

Pest / Active Ingredient (Trade Name)	Chemical group	Activity	WHP, days	Availability	States	Comments	Impact on beneficials	Regulatory risk
Western Flower Thrips (<i>Frankliniella occidentalis</i>)								
Priority: High								
Western Flower Thrips were ranked as a high priority in QLD, NSW, WA & SA and as a moderate priority in VIC. It is important to follow a resistance management strategy as recommended by CropLife ⁵ . MT16009 IPM Project Recommends: The use of predatory thrips, mites & bug releases, control flowering weeds, mulch and use of certified seed.								
Abamectin	6	Contact & Ingestion	3	A	ALL	Registered in eggplant for control of Two-Spotted Mite and Western Flower Thrips . [Max. 2 consecutive applications per crop; re-treatment interval 28 d]	M Bee:H	-
<i>Beauveria bassiana</i> (Velifer) BASF	UN	Biological	NR	A	ALL	Registered in protected vegetables and ornamentals for suppression of various pests including: Western Flower Thrips , Onion Thrips, Greenhouse Whitefly, Silverleaf Whitefly, Sweet Potato Whitefly, Green Peach Aphid & Two-Spotted Spider Mites. [Max. 3 application per crop; re-treatment interval 3-14 d]	L Bee:H	-
Chlorantraniliprole + Thiamethoxam (Durivo) Syngenta	28+4A	Contact & Ingestion	NR	A	ALL	Registered in eggplant for control of Cotton Bollworm, Native Budworm, Cluster Caterpillar, Green Peach Aphid, Silverleaf Whitefly, Greenhouse Whitefly, Western Flower Thrips , and Tomato Thrips. [max 1 application per crop; seedlings should be transplanted within 48 h of application]	M Bee:VH	R2
Chlorantraniliprole + Thiamethoxam (Durivo) Syngenta PER87051	28+4A	Contact & Ingestion	35 NG	A	QLD (within Wide Bay Burnett region)	Permitted for use as a single post plant chemigation in cucurbits & fruiting vegetables including eggplant (field & protected) for control of Diamondback Moth, Cabbage White Butterfly, Corn Earworm, Native Budworm, Cabbage Centre Grub, Cabbage Cluster Caterpillar, Cluster Caterpillar, Cabbage Aphid, Green Peach Aphid, Silverleaf Whitefly – all biotypes, Greenhouse Whitefly, Western Flower Thrips , Green Vegetable Bug, Potato moth, Tomato Thrips, Brown Sowthistle Aphid, Vegetable Leafhopper, Lucerne leafroller, Leafhoppers (Jassids), Onion Thrips and Psyllids. [Max. 1 application per crop].	M Bee:VH	R2

⁵ www.croplife.org.au/resources/programs/resistance-management/various-western-flower-thrips/

Pest / Active Ingredient (Trade Name)	Chemical group	Activity	WHP, days	Availability	States	Comments	Impact on beneficials	Regulatory risk
Cyantraniliprole (Benevia) FMC	28	Ingestion	1	A	ALL	Registered in eggplant for control of Silverleaf Whitefly, Cotton Bollworm, Native Budworm, Tomato Leaf Miner Miner and suppression of Green Peach Aphid, Tomato Thrips and Western Flower Thrips . [max 2 application per crop; re-treatment interval 7-10 d]	M Bee:VH	-
Dimethoate	1B	Contact	14	A	ALL	Registered in eggplant for control of Aphids, Jassids, Mites, Leafhoppers, Green Vegetable Bug, Thrips and Wingless Grasshoppers. Apply when grasshoppers appear and re-apply as required. [Max no. of applications per crop & re-treatment interval not specified]	H Bee:H	R1
Garlic + Chilli + Pyrethrins + Piperonyl Butoxide	3A	Contact	1	A	ALL	Registered in vegetables for control of Ants, Aphids, Caterpillars, Earwigs, Whitefly, Thrips and Leafhoppers. Suitable for organic growers. Apply as a cover spray and re-apply as necessary every 2-3 weeks.	VH Bee:H	-
Methomyl PER82428	1B	Contact	3	A	ALL	Permitted for use in eggplant for control of <i>Helicoverpa</i> spp., Cucumber Moth, Cluster Caterpillar, Loopers, Webworm, Rutherglen Bug & Thrips including Western Flower Thrips . [Max. 6 applications per crop; re-treatment interval 7-14 d]	H Bee:H	R2
Petroleum Oil PER12221	UN	Contact	1	A	ALL (excl. VIC)	Permitted for use in eggplant for control of Aphids, Green Mirid, Green Vegetable Bug, Grey Cluster Bug, Leafhoppers, Mites, Rutherglen Bug, Thrips , Silverleaf Whitefly and Greenhouse Whitefly. [Max. no. of applications and re-treatment interval not specified]	VL Bee:L	-
Phorate (Thimet) PER8930	1B	Contact	70	A	ALL	Permitted for use in eggplant for control of Aphids, Jassids, Mites, Thrips , and Onion Maggot. [Max. no. of applications and re-treatment interval not specified]	H Bee:H	R3
Potassium Salts of Fatty Acids (Natrasoap)	-	Contact	NR	A	ALL	Registered in vegetables for control of Aphids, Mealy bug, Thrips , Two Spotted Mite, Spider Mite and Whitefly. Apply when temperatures are cooler. [Max no. of applications not specified; re-treatment interval 5-7 d]	L Bee:L	-

Pest / Active Ingredient (Trade Name)	Chemical group	Activity	WHP, days	Availability	States	Comments	Impact on beneficials	Regulatory risk
Pyrethrins + Piperonyl Butoxide	3A	Contact	1	A	ALL	Registered in vegetables for control of Ants, Aphids, Thrips , Caterpillars, Leaf Hoppers, and Whitefly. [Max no. of applications not specified; re-treatment interval: 7 d]	VH Bee:H	-
Spinetoram (Success Neo) Corteva	5	Ingestion	1	A	ALL	Registered in eggplant for control of Cotton Bollworm, Native Budworm, Potato Moth (Tomato Leaf Miner) and Western Flower Thrips . [Max. no. of applications not specified; re-treatment interval 7-14 d]	M Bee:H	-
Spinosad (Entrust Organic) Corteva	5	Ingestion	3 G:14	A	ALL	Registered in fruiting vegetables including eggplant & sweet corn for control of Potato Moth, <i>Helicoverpa</i> & Western Flower Thrips . [Max. 4 applications per season; re-treatment interval 7-14 d]	L Bee:L	-
Spirotetramat (Movento) Bayer	23	Ingestion	1	A	ALL	Registered in eggplant for control of Green Peach Aphid, Silverleaf Whitefly, and Western Flower Thrips . [Max. 3 applications per crop; re-treatment interval 7 d]	M Bee:VL	-
Dimpropridaz (Axalion) BASF	TBC			P		BASF has applied for registration to control Whitefly, Aphids and Thrips in leafy vegetables, brassica vegetables and fruiting vegetables, including cucurbits. Pending regulatory approvals, first market introduction in Australia is expected by late 2022 or early 2023.	-	-
Diafenthiuron + Cyantraniliprole (Minecto Forte) Syngenta	12A+28	Contact & Ingestion		P		Registered for control of Silverleaf Whitefly, Heliothis, Potato Moth, Cucumber Moth, Cluster Caterpillar, Aphids, Two-Spotted Mite and suppression of Western Flower Thrips , Tomato Thrips and Plague Thrips in cucurbits and fruiting vegetables.	M Bee:VH	-
Fonicamid (Mainman) ISK/UPL	29	Ingestion		P		Registered for control of Aphids and Silverleaf Whitefly in cucurbits; Aphids in potatoes; Aphids and Mealybugs in apples and pears; Aphids and Mirids in Cotton. US registration for control of Aphids, Plant Bugs, Tomato Psyllids and Greenhouse Whitefly in fruiting vegetables, including eggplant. ST17000 is generating data to support a minor use permit for Thrips control in bulb vegetables.	M Bee:L	-

Pest / Active Ingredient (Trade Name)	Chemical group	Activity	WHP, days	Availability	States	Comments	Impact on beneficials	Regulatory risk
Flupyradifurone (Sivanto Prime) Bayer	4D	Contact and Ingestion		P		Registered in macadamias for control of Fruit Spotting Bugs, Lace Bug and Scirtothrips. US registration in fruiting vegetables for suppression of Scirtothrips.	L Bee:L	-
NUL3445 Nufarm	TBC			P		Product in development from Nufarm with activity on Thrips.	-	-
SYNFOI21 Syngenta	New			P		SYNFOI21 is not registered but the first global application is proposed for 2023 for Thrips , Bugs, Mites and Caterpillars.	-	-
<p>Silverleaf Whitefly (<i>Bemisia tabaci</i>) Greenhouse Whitefly (<i>Trialeurodes vaporariorum</i>) Priority: High</p> <p>Whiteflies, particularly Silverleaf Whiteflies, were ranked as a high priority in QLD, NSW, WA & SA and as a moderate priority in VIC. Adults feed and lay their eggs on the undersides of young leaves and a female can lay up to 160 eggs during a 60 day lifespan. Whiteflies damage eggplants by sucking enormous quantities of sap and covering plants with sticky honeydew. Black sooty mould grows over the honeydew. Whitefly can also be a vector for plant viruses.</p>								
Afidopyropen (Versys) BASF	9D	Ingestion	1	A	ALL	Label extension in April 2021 now includes protected cropping situations for Fruiting vegetables and Cucurbits and PER87852 will be surrendered. Registered in fruiting vegetables for control of Green Peach Aphid, Cabbage Aphid, Currant Lettuce Aphid, Cotton/Melon Aphid, Corn aphid & suppression of Silverleaf Whitefly .	L Bee:L	-
Afidopyropen (Versys) BASF PER87852 <i>*Use now registered in protected cropping and permit to be surrendered</i>	9D	Ingestion	3	A	ALL	Permitted for use in cucumber, capsicum & eggplant (protected cropping situations) for control of Green Peach Aphid, Melon Aphids and suppression of Silverleaf Whitefly . Versys label extension in April 2021 now covers protected cropping and permit will be surrendered.	L Bee:L	-

Pest / Active Ingredient (Trade Name)	Chemical group	Activity	WHP, days	Availability	States	Comments	Impact on beneficials	Regulatory risk
<i>Beauveria bassiana</i> (Velifer) BASF	UN	Biological	NR	A	ALL	Registered in protected vegetables and ornamentals for suppression of various pests including: Western Flower Thrips, Onion Thrips, Greenhouse Whitefly, Silverleaf Whitefly , Sweet Potato Whitefly, Green Peach Aphid & Two-Spotted Spider Mites. [Max. 3 application per crop; re-treatment interval 3-14 d]	L Bee:L	-
Bifenthrin (Astral) Nufarm	3A	Contact	1	A	ALL	Registered in eggplant for control of Silverleaf Whitefly , Two Spotted Mite and Greenhouse Whitefly . [Max. 2 consecutive applications per crop; re-treatment interval 7 d]	VH Bee:H	R3
Buprofezin (Applaud) Corteva PER82467	16	Contact & Ingestion	3	A	ALL (excl. VIC)	Permitted for use in eggplant (field and protected) for control of Greenhouse Whitefly, Silverleaf Whitefly and Sweet Potato Whitefly. [Max. 2 applications per crop; re-treatment interval 14 d]	L Bee:L	-
Chlorantraniliprole + Thiamethoxam (Durivo) Syngenta	28+4A	Contact & Ingestion	NR	A	ALL	Registered in eggplant for control of Cotton Bollworm, Native Budworm, Cluster Caterpillar, Green Peach Aphid, Silverleaf Whitefly, Greenhouse Whitefly , Western Flower Thrips, and Tomato Thrips. [max 1 application per crop; seedlings should be transplanted within 48 h of application]	M Bee:VH	R2
Chlorantraniliprole + Thiamethoxam (Durivo) Syngenta PER87051	28+4A	Contact & Ingestion	35 NG	A	QLD (within Wide Bay Burnett region)	Permitted for use as a single post plant chemigation in cucurbits & fruiting vegetables including eggplant (field & protected) for control of Diamondback Moth, Cabbage White Butterfly, Corn Earworm, Native Budworm, Cabbage Centre Grub, Cabbage Cluster Caterpillar, Cluster Caterpillar, Cabbage Aphid, Green Peach Aphid, Silverleaf Whitefly – all biotypes, Greenhouse Whitefly , Western Flower Thrips, Green Vegetable Bug, Potato moth, Tomato Thrips, Brown Sowthistle Aphid, Vegetable Leafhopper, Lucerne leafroller, Leafhoppers (Jassids), Onion Thrips and Psyllids. [Max. 1 application per crop].	M Bee:VH	R2

Pest / Active Ingredient (Trade Name)	Chemical group	Activity	WHP, days	Availability	States	Comments	Impact on beneficials	Regulatory risk
Cyantraniliprole (Benevia) FMC	28	Ingestion	1	A	ALL	Registered in eggplant for control of Silverleaf Whitefly , Cotton Bollworm, Native Budworm, Tomato Leaf Miner and suppression of Green Peach Aphid, Tomato Thrips and Western Flower Thrips. [max 2 application per crop; re-treatment interval 7-10 d]	M Bee:VH	-
Emulsifiable Botanical Oil (Eco-Oil)	-	Contact	NR	A	ALL	Registered in vegetables for control of Greenhouse Whitefly . [max 3 application per crop; re-treatment interval 3-5 d]	L Bee:L	-
Garlic + Chilli + Pyrethrins + Piperonyl Butoxide	3A	Contact	1	A	ALL	Registered in vegetables for control of Ants, Aphids, Caterpillars, Earwigs, Whitefly , Thrips and Leafhoppers. Suitable for organic growers. Apply as a cover spray and re-apply as necessary every 2-3 weeks.	VH Bee:VH	-
Paraffinic Oil	-	Contact	NR	A	QLD	Registered in eggplant for control of Silverleaf Whitefly . Avoid spraying in hot weather. [Max. no. of applications and re-treatment interval not specified]	VL Bee:L	-
Petroleum Oil PER12221	-	Contact	1	A	ALL (excl. VIC)	Permitted for use in eggplant for control of Aphids Green Mirid, Green Vegetable Bug, Grey Cluster Bug, Leafhoppers, Mites, Rutherglen Bug, Thrips, Silverleaf Whitefly and Greenhouse Whitefly . [Max. no. of applications and re-treatment interval not specified]	VL Bee:L	-
Potassium Salts of Fatty Acids (Natrasoap)	-	Contact	NR	A	ALL	Registered in vegetables for control of Aphids, Mealy Bug, Thrips, Two Spotted Mite, Spider Mite and Whitefly . Apply when temperatures are cooler. [Max no. of applications not specified; re-treatment interval 5-7 d]	L Bee:L	-
Pymetrozine (Chess) Syngenta	9B	Contact & Ingestion	3	A	ALL	Registered in eggplant for control of Potato Aphid, Green Peach Aphid and suppression of Silverleaf Whitefly and Greenhouse Whitefly . Apply at first sign of infestation. [Max. no. of applications not specified; re-treatment interval 7 d]	L Bee:VL	R3
Pyrethrins + Piperonyl Butoxide	3A	Contact	1	A	ALL	Registered in vegetables for control of Ants, Aphids, Thrips, Caterpillars, Leaf Hoppers, and Whitefly . [Max no. of applications not specified; re-treatment interval: 7 d]	VH Bee:H	-

Pest / Active Ingredient (Trade Name)	Chemical group	Activity	WHP, days	Availability	States	Comments	Impact on beneficials	Regulatory risk
Pyriproxyfen (Admiral) Sumitomo	7C	IGR / Ingestion	1	A	ALL	Registered in eggplant for control of Silverleaf Whitefly biotype B and Greenhouse Whitefly . Apply in accordance with the Silverleaf Whitefly management strategy. [Max. 2 applications per season; re-treatment interval 14 d]	VL Bee:L	-
Spirotetramat (Movento) Bayer	23	Ingestion	1	A	ALL	Registered in eggplant for control of Green Peach Aphid, Silverleaf Whitefly , and Western Flower Thrips. [Max. 3 applications per crop; re-treatment interval 7 d]	M Bee:VL	-
Sulfoxaflor (Transform) Corteva	4C	Contact and Ingestion	1	A	ALL	Registered in eggplant for control of Green Peach Aphid and Greenhouse Whitefly , and suppression of Rutherglen Bug and Tomato Potato Psyllid. [Max. no. of applications and re-treatment interval not specified]	M Bee:H	-
Dimpropridaz (Axalion) BASF	TBC			P		BASF has applied for registration to control Whitefly, Aphids and Thrips in leafy vegetables, brassica vegetables and fruiting vegetables, including cucurbits. Pending regulatory approvals, first market introduction in Australia is expected by late 2022 or early 2023.	-	-
<i>Clitoria ternatea</i> Extract (Sero-X) Growth Agriculture	UN	Biological	NR	P		Registered in cotton for control of <i>Helicoverpa</i> spp., Green Mirids and Silverleaf Whitefly and in brassica leafy vegetables for control of Diamondback Moth. Innovate Ag applied in January 2021 to the APVMA seeking to add new uses against Silverleaf whitefly and thrips in brassicas and cucurbits to its Sero-X Insecticide label.	-	-
Diafenthiuron + Cyantraniliprole (Minecto Forte) Syngenta	12A+28	Contact & Ingestion		P		Registered for control of Silverleaf Whitefly , Heliothis, Potato Moth, Cucumber Moth, Cluster Caterpillar, Aphids, Two-Spotted Mite and suppression of Western Flower Thrips, Tomato Thrips and Plague Thrips in cucurbits and fruiting vegetables.	M Bee:VH	-
Fonicamid (Mainman) ISK/UPL	29	Ingestion		P		Registered for control of Aphids and Silverleaf Whitefly in cucurbits. US registration for control of Aphids, Plant Bugs, Tomato Psyllids and Greenhouse Whitefly in fruiting vegetables, including eggplant.	M Bee:L	-

Pest / Active Ingredient (Trade Name)	Chemical group	Activity	WHP, days	Availability	States	Comments	Impact on beneficials	Regulatory risk
Flupyradifurone (Sivanto Prime) Bayer	4D	Contact and Ingestion		P		Registered in macadamias for control of Fruit Spotting Bugs, Lace Bug and Scirtothrips. Bayer is pursuing registration for control of Aphids, Silverleaf & Greenhouse Whitefly in cucurbits, green beans, tomatoes, eggplant & peppers (protected & field). Registration expected by end of 2021.	L Bee:L	-
NUL3145 Nufarm	TBC			P		New product in development from Nufarm with activity on Scale, Nematodes, Mealybug and Whitefly.	-	-
Green Peach Aphid (<i>Myzus persicae</i>)								
Priority: High								
Green Peach Aphid were ranked as a high priority in VIC, QLD & SA and as a moderate priority in NSW & WA. Aphids not only damage the foliage and can also be a vector for many plant viruses in vegetables. Aphid predators and parasites usually keep populations low. The most common are Ladybird Beetles (adults and larvae), Syrphid Fly Larvae, Green Lacewing Larvae, and tiny parasitic wasps that lay their eggs in the aphids.								
Afidopyropen (Versys) BASF	9D	Ingestion	1	A	ALL	Label extension in April 2021 now includes protected cropping situations for Fruiting vegetables and Cucurbits and PER87852 will be surrendered. Registered in fruiting vegetables for control of Green Peach Aphid , Cabbage Aphid, Currant Lettuce Aphid, Cotton/Melon Aphid, Corn aphid & suppression of Silverleaf Whitefly.	L Bee:L	-
Afidopyropen (Versys) BASF PER87852 <i>*Use now registered in protected cropping and permit to be surrendered</i>	9D	Ingestion	3	A	ALL	Permitted for use in cucumber, capsicum & eggplant (protected cropping situations) for control of Green Peach Aphid , Melon Aphids and suppression of Silverleaf Whitefly. Versys label extension in April 2021 now covers protected cropping and permit will be surrendered.	L Bee:L	-
<i>Beauveria bassiana</i> (Velifer) BASF	UN	Biological	NR	A	ALL	Registered in protected vegetables and ornamentals for suppression of various pests including: Western Flower Thrips, Onion Thrips, Greenhouse Whitefly, Silverleaf Whitefly, Sweet Potato Whitefly, Green Peach Aphid & Two-Spotted Spider Mites. [Max. 3 application per crop; re-treatment interval 3-14 d]	L Bee:L	-

Pest / Active Ingredient (Trade Name)	Chemical group	Activity	WHP, days	Availability	States	Comments	Impact on beneficials	Regulatory risk
Chlorantraniliprole + Thiamethoxam (Durivo) Syngenta	28+4A	Contact & Ingestion	NR	A	ALL	Registered in eggplant for control of Cotton Bollworm, Native Budworm, Cluster Caterpillar, Green Peach Aphid , Silverleaf Whitefly, Greenhouse Whitefly, Western Flower Thrips, and Tomato Thrips. [max 1 application per crop; seedlings should be transplanted within 48 h of application]	M Bee:VH	R2
Chlorantraniliprole + Thiamethoxam (Durivo) Syngenta PER87051	28+4A	Contact & Ingestion	35 NG	A	QLD (within Wide Bay Burnett region)	Permitted for use as a single post plant chemigation in cucurbits & fruiting vegetables including eggplant (field & protected) for control of Diamondback Moth, Cabbage White Butterfly, Corn Earworm, Native Budworm, Cabbage Centre Grub, Cabbage Cluster Caterpillar, Cluster Caterpillar, Cabbage Aphid, Green Peach Aphid , Silverleaf Whitefly – all biotypes, Greenhouse Whitefly, Western Flower Thrips, Green Vegetable Bug, Potato Moth, Tomato Thrips, Brown Sowthistle Aphid, Vegetable Leafhopper, Lucerne Leafroller, Leafhoppers (Jassids), Onion Thrips and Psyllids. [Max. 1 application per crop].	M Bee:VH	R2
Cyantraniliprole (Benevia) FMC	28	Ingestion	1	A	ALL	Registered in eggplant for control of Silverleaf Whitefly, Cotton Bollworm, Native Budworm, Tomato Leaf Miner and suppression of Green Peach Aphid , Tomato Thrips and Western Flower Thrips. [max 2 application per crop; re-treatment interval 7-10 d]	M Bee:VH	-
Dimethoate	1B	Contact	14	A	ALL	Registered in eggplant for control of Aphids , Jassids, Mites, Leafhoppers, Green Vegetable Bug, Thrips and Wingless Grasshoppers. Apply when grasshoppers appear and re-apply as required. [Max no. of applications per crop & re-treatment interval not specified]	H Bee:H	R1
Garlic + Chilli + Pyrethrins + Piperonyl Butoxide	3A	Contact	1	A	ALL	Registered in vegetables for control of Ants, Aphids , Caterpillars, Earwigs, Whitefly, Thrips and Leafhoppers. Suitable for organic growers. Apply as a cover spray and re-apply as necessary every 2-3 weeks.	VH Bee:H	-

Pest / Active Ingredient (Trade Name)	Chemical group	Activity	WHP, days	Availability	States	Comments	Impact on beneficials	Regulatory risk
Imidacloprid (Confidor) Bayer	4A	Contact and Ingestion	7	A	ALL	Registered in eggplant for control of Melon Thrips and Green Peach Aphid . Apply at first sign of infestation. [Max. no. of applications and re-treatment interval not specified]	M Bee:M	R2
Petroleum Oil PER12221	UN	Contact	1	A	ALL (excl. VIC)	Permitted for use in eggplant for control of Aphids , Green Mirid, Green Vegetable Bug, Grey Cluster Bug, Leafhoppers, Mites, Rutherglen Bug, Thrips, Silverleaf Whitefly and Greenhouse Whitefly. [Max. no. of applications and re-treatment interval not specified]	VL Bee:L	-
Phorate (Thimet) PER8930	1B	Contact	70	A	ALL	Permitted for use in in eggplant for control of Aphids , Jassids, Mites, Thrips, and Onion Maggot. [Max. no. of applications and re-treatment interval not specified]	H Bee:H	R3
Pirimicarb (Aphidex 800) Adama	1A	Contact	2	A	ALL	Registered in eggplant for control of Aphids . Apply at first sign of infestation. [Max. no. of applications not specified; re-treatment interval 10-14 d]	VL Bee:VL	R3
Potassium Salts of Fatty Acids (Natrasoap)	-	Contact	NR	A	ALL	Registered in vegetables for control of Aphids , Mealy Bug, Thrips, Two Spotted Mite, Spider Mite and Whitefly. Apply when temperatures are cooler. [Max no. of applications not specified; re-treatment interval 5-7 d]	L Bee:L	-
Pymetrozine (Chess) Syngenta	9B	Contact & Ingestion	3	A	ALL	Registered in eggplant for control of Potato Aphid, Green Peach Aphid , Silverleaf Whitefly and Greenhouse Whitefly. Apply at first sign of infestation. [Max. no. of applications not specified; re-treatment interval 7 d]	L Bee:VL	R3
Pyrethrins + Piperonyl Butoxide	3A	Contact	1	A	ALL	Registered in vegetables for control of Ants, Aphids , Thrips, Caterpillars, Leaf Hoppers, and Whitefly. [Max no. of applications not specified; re-treatment interval: 7 d]	VH Bee:H	-
Spirotetramat (Movento) Bayer	23	Ingestion	1	A	ALL	Registered in eggplant for control of Green Peach Aphid , Silverleaf Whitefly, and Western Flower Thrips. [Max. 3 applications per crop; re-treatment interval 7 d]	M Bee:VL	-

Pest / Active Ingredient (Trade Name)	Chemical group	Activity	WHP, days	Availability	States	Comments	Impact on beneficials	Regulatory risk
Sulfoxaflor (Transform) Corteva	4C	Contact and Ingestion	1	A	ALL	Registered in eggplant for control of Green Peach Aphid and Greenhouse Whitefly, and suppression of Rutherglen Bug and Tomato Potato Psyllid. [Max. no. of applications and re-treatment interval not specified]	M Bee:H	-
Emulsifiable Botanical Oil (Eco-Oil)	-	Contact	NR	P-A	ALL	Registered in vegetables for control of Greenhouse Whitefly . Registered for control of Aphids in Capsicum or Pepper, Cucumber, Strawberries and Tomatoes.	L Bee:L	-
Dimpropridaz (Axalion) BASF	TBC			P		BASF has applied for registration to control Whitefly, Aphids and Thrips in leafy vegetables, brassica vegetables and fruiting vegetables, including cucurbits. Pending regulatory approvals, first market introduction in Australia is expected by late 2022 or early 2023.	-	-
Diafenthuron + Cyantraniliprole (Minecto Forte) Syngenta	12A+28	Contact & Ingestion		P		Registered for control of Silverleaf Whitefly, Heliiothis, Potato Moth, Cucumber Moth, Cluster Caterpillar, Aphids , Two-Spotted Mite and suppression of Western Flower Thrips, Tomato Thrips and Plague Thrips in cucurbits and fruiting vegetables.	M Bee:VH	-
Fonicamid (Mainman) ISK/UPL	29	Ingestion		P		Registered for control of Aphids and Silverleaf Whitefly in cucurbits. US registration for control of Aphids , Plant Bugs, Tomato Psyllids and Greenhouse Whitefly in fruiting vegetables, including eggplant.	M Bee:L	-
Flupyradifurone (Sivanto Prime) Bayer	4D	Contact and Ingestion		P		Registered in macadamias for control of Fruit Spotting Bugs, Lace Bug and Scirtothrips. US registration in fruiting vegetables for control of Aphids . Bayer is pursuing registration of product for control of Aphids , Silverleaf & Greenhouse Whitefly in cucurbits, green beans, tomatoes, eggplant & peppers (protected & field). Registration expected by end of 2021.	L Bee:L	-
Novaluron + Acetamiprid (Cormoran) Adama	15+4A	IGR / Contact & Ingestion		P		Registered in stone fruit for control of Green Peach Aphid & Black Peach Aphid.	M Bee:M	R2

Pest / Active Ingredient (Trade Name)	Chemical group	Activity	WHP, days	Availability	States	Comments	Impact on beneficials	Regulatory risk
Eggfruit Caterpillar (<i>Sceliodes cordalis</i>)								
Priority: High								
Eggfruit Caterpillar was ranked as a high priority in QLD, NSW & SA and as a moderate priority in VIC & WA. Eggfruit Caterpillar is active all year in warm areas but has a winter diapause in cold climates. Larvae damage eggplant by feeding in the fruit, making extensive tunnels. Cultural controls involve the removal of susceptible weeds such as Thornapple and other solanaceous species and ploughing in of crop residues soon after harvest.								
<i>Bacillus thuringiensis subsp. kurstaki</i> (DiPel)	11C	Biological	NR	A	ALL	Registered in vegetables for control of Lepidoptera. [Apply a minimum of 2 sprays, 3 d apart; re-treatment interval 3-5 d]	VL Bee:L	-
Chlorantraniliprole (Coragen) FMC	28	Ingestion	3	A	ALL	Registered in eggplant for control of Cotton Bollworm, Native Budworm, Tomato Leaf Miner, and Eggfruit Caterpillar . [Max. 3 applications; 2 consecutive; re-treatment interval 7 d]	L Bee:VL	-
Garlic + Chilli + Pyrethrins + Piperonyl Butoxide	3A	Contact	1	A	ALL	Registered in vegetables for control of Ants, Aphids, Caterpillars, Earwigs, Whitefly, Thrips and Leafhoppers. Suitable for organic growers. Apply as a cover spray and re-apply as necessary every 2-3 weeks.	VH Bee:VH	-
Pyrethrins + Piperonyl Butoxide	3A	Contact	1	A	ALL	Registered in vegetables for control of Ants, Aphids, Thrips, Caterpillars, Leaf Hoppers, and Whitefly. [Max no. of applications not specified; re-treatment interval: 7 d]	VH Bee:H	-
Cyantraniliprole (Benevia) FMC	28	Ingestion	1	P-A	ALL	Registered in eggplant for control of Silverleaf Whitefly, Cotton Bollworm, Native Budworm, Tomato Leaf Miner and suppression of Green Peach Aphid, Tomato Thrips and Western Flower Thrips.	M Bee:VH	-
Emamectin (Proclaim) Syngenta	6	Ingestion	3 NG	P-A	ALL	Registered in fruiting vegetables for control of Cluster Caterpillar and Heliothis.	M Bee:H	-
Flubendiamide (Belt) Bayer	28	Ingestion	1	P-A	ALL	Registered in eggplant (field and protected) for control of <i>Helicoverpa</i> spp. and Tomato Leafminer.	L-M Bee:L	-

Pest / Active Ingredient (Trade Name)	Chemical group	Activity	WHP, days	Availability	States	Comments	Impact on beneficials	Regulatory risk
Indoxacarb + Novaluron (Plemax) Adama	22A+15	Contact & Ingestion	3 NG	P-A	ALL	Registered in eggplant for control of <i>Helicoverpa</i> spp. and Tomato Leaf Miner.	M Bee:M	R3
Spinetoram (Success Neo) Corteva	5	Ingestion	1	P-A	ALL	Registered in eggplant for control of Cotton Bollworm, Native Budworm, Tomato Leaf Miner and Western Flower Thrip.	M Bee:H	-
Spinosad (Entrust Organic) Corteva	5	Ingestion		P-A		Registered in fruiting vegetables including eggplant & sweet corn for control of Potato Moth, <i>Helicoverpa</i> & Western Flower Thrips.	L Bee:L	-
<i>Clitoria ternatea</i> Extract (Sero-X) Growth Agriculture	UN	Biological	NR	P		Registered in cotton for control of <i>Helicoverpa</i> spp., Green Mirids and Silverleaf Whitefly and in brassica leafy vegetables for control of Diamondback Moth. Innovate Ag applied in January 2021 to the APVMA seeking to add new uses against Silverleaf whitefly and thrips in brassicas and cucurbits to its Sero-X Insecticide label.	-	-
NUL3445 Nufarm	TBC			P		New active in development. Nufarm claim activity on Lepidoptera.		-
SYNFOI21 Syngenta	TBC			P		SYNFOI21 is not registered but the first global application is proposed for 2023 for Thrips, Bugs, Mites and Caterpillars.	-	-
Cotton Bollworm (<i>Helicoverpa armigera</i>) Native Budworm (<i>Helicoverpa punctigera</i>) Priority: High								
Helicoverpa was ranked as a high priority in NSW & WA and as a moderate priority in VIC, QLD & SA. The larvae burrow directly into developing fruit causing holes and making them unsaleable. Smaller larvae also damage the fruits providing entry points to various fungal pathogens.								
<i>Bacillus thuringiensis subsp. kurstaki</i> (DiPel)	11C	Biological	NR	A	ALL	Registered in vegetables for control of Lepidoptera. [Apply a minimum of 2 sprays, 3 d apart; re-treatment interval 3-5 d]	VL Bee:L	-

Pest / Active Ingredient (Trade Name)	Chemical group	Activity	WHP, days	Availability	States	Comments	Impact on beneficials	Regulatory risk
Chlorantraniliprole (Coragen) FMC	28	Ingestion	3	A	ALL	Registered in eggplant for control of Cotton Bollworm, Native Budworm , Tomato Leaf Miner, and Eggfruit Caterpillar. [Max. 3 applications; 2 consecutive; re-treatment interval 7 d]	L Bee:VL	-
Chlorantraniliprole + Thiamethoxam (Durivo) Syngenta	28+4A	Contact & Ingestion	NR	A	ALL	Registered in eggplant for control of Cotton Bollworm, Native Budworm , Cluster Caterpillar, Green Peach Aphid, Silverleaf Whitefly, Greenhouse Whitefly, Western Flower Thrips, and Tomato Thrips. [max 1 application per crop; seedlings should be transplanted within 48 h of application]	M Bee:VH	R2
Chlorantraniliprole + Thiamethoxam (Durivo) Syngenta PER87051	28+4A	Contact & Ingestion	35 NG	A	QLD (within Wide Bay Burnett region)	Permitted for use as a single post plant chemigation in cucurbits & fruiting vegetables including eggplant (field & protected) for control of Diamondback Moth, Cabbage White Butterfly, Corn Earworm, Native Budworm , Cabbage Centre Grub, Cabbage Cluster Caterpillar, Cluster Caterpillar, Cabbage Aphid, Green Peach Aphid, Silverleaf Whitefly – all biotypes, Greenhouse Whitefly, Western Flower Thrips, Green Vegetable Bug, Potato Moth, Tomato Thrips, Brown Sowthistle Aphid, Vegetable Leafhopper, Lucerne Leafroller, Leafhoppers (Jassids), Onion Thrips and Psyllids. [Max. 1 application per crop].	M Bee:VH	R2
Cyantraniliprole (Benevia) FMC	28	Ingestion	1	A	ALL	Registered in eggplant for control of Silverleaf Whitefly, Cotton Bollworm, Native Budworm , Tomato Leaf Miner and suppression of Green Peach Aphid, Tomato Thrips and Western Flower Thrips. [max 2 application per crop; re-treatment interval 7-10 d]	M Bee:VH	-
Eamectin (Proclaim) Syngenta	6	Ingestion	3 NG	A	ALL	Registered in fruiting vegetables for control of Cluster Caterpillar and Heliothis . [Max 4 applications per crop; re-treatment interval min. 7 days]	M Bee:H	-
Flubendiamide (Belt) Bayer	28	Ingestion	1	A	ALL	Registered in eggplant (field and protected) for control of Helicoverpa spp. and Tomato Leafminer. [Max. 3 applications per crop; re-treatment interval 7-14 d]	L-M Bee:L	-

Pest / Active Ingredient (Trade Name)	Chemical group	Activity	WHP, days	Availability	States	Comments	Impact on beneficials	Regulatory risk
Garlic + Chilli + Pyrethrins + Piperonyl Butoxide	3A	Contact	1	A	ALL	Registered in vegetables for control of Ants, Aphids, Caterpillars, Earwigs, Whitefly, Thrips and Leafhoppers. Suitable for organic growers. Apply as a cover spray and re-apply as necessary every 2-3 weeks.	VH Bee:H	-
Nuclear Polyhedrosis Virus (Vivus) AgBiTech	31	Biological / Ingestion	NR	A	ALL	Registered in eggplant for control of Corn Earworm and Native Budworm . Has a short residual activity and retreatment may be required at 2-3 day intervals. Target application when the majority of larvae are less than 7mm in length. Treatments per season not limited.	VL Bee:VL	-
Indoxacarb (Avatar) FMC	22A	Ingestion	3	A	ALL	Registered in eggplant for control of Cotton Bollworm , Native Budworm and Tomato Leaf Miner. [Max. 3 applications per crop; re-treatment interval 7 d]	L Bee:H	R3
Indoxacarb + Novaluron (Plemax) Adama	22A+15	Contact & Ingestion	3 NG	A	ALL	Registered in eggplant for control of Helicoverpa spp. and Potato Moth / Tomato Leaf Miner. [Max. 3 applications per crop; no more than 2 consecutive applications; min retreatment interval 7 days]	M Bee:M	R3
Methomyl PER82428	1B	Contact	3	A	ALL	Permitted for use in eggplant for control of Helicoverpa spp. , Cucumber Moth, Cluster Caterpillar, Loopers, Webworm, Rutherglen Bug & Thrips including Western Flower Thrips. [Max. 6 applications per crop; re-treatment interval 7-14 d]	H Bee:H	R2
Methoxyfenozide (Prodigy) Corteva	18	IGR / Ingestion	NR	A	ALL	Registered in eggplant for control of Native Budworm , Tomato Grub and Cluster Caterpillar. [Max. no. of applications not specified; re-treatment interval 7 d]	VL Bee:VL	-
Pyrethrins + Piperonyl Butoxide	3A	Contact	1	A	ALL	Registered in vegetables for control of Ants, Aphids, Thrips, Caterpillars , Leaf Hoppers, and Whitefly. [Max no. of applications not specified; re-treatment interval: 7 d]	VH Bee:H	-
Spinetoram (Success Neo) Corteva	5	Ingestion	1	A	ALL	Registered in eggplant for control of Cotton Bollworm , Native Budworm , Tomato Leaf Miner and Western Flower Thrip. [Max. no. of applications not specified; re-treatment interval 7-14 d]	M Bee:H	-

Pest / Active Ingredient (Trade Name)	Chemical group	Activity	WHP, days	Availability	States	Comments	Impact on beneficials	Regulatory risk
Spinosad (Entrust Organic) Corteva	5	Ingestion	3 G:14	A	ALL	Registered in fruiting vegetables including eggplant for control of Potato Moth, <i>Helicoverpa</i> & Western Flower Thrips. [Max. 4 applications per season; re-treatment interval 7-14 d]	L Bee:L	-
NUL3445 Nufarm	TBC			P		New active in development. Nufarm claim activity on Lepidoptera.	-	-
SYNFOI21 Syngenta	TBC			P		SYNFOI21 is not registered but the first global application is proposed for 2023 for Thrips, Bugs, Mites and Caterpillars.	-	-
Cluster Caterpillar (<i>Spodoptera litura</i>)								
Priority: Moderate								
Cluster Caterpillar was ranked as a moderate priority in VIC, QLD, NSW & WA and as a low priority in SA. The voracious feeding habit of this pest can cause severe damage to foliage of many vegetables thus affecting their growth and productivity.								
Chlorantraniliprole + Thiamethoxam (Durivo) Syngenta	28+4A	Contact & Ingestion	NR	A	ALL	Registered in eggplant for control of Cotton Bollworm, Native Budworm, Cluster Caterpillar , Green Peach Aphid, Silverleaf Whitefly, Greenhouse Whitefly, Western Flower Thrips, and Tomato Thrips. [max 1 application per crop; seedlings should be transplanted within 48 h of application]	M Bee:VH	R2
Chlorantraniliprole + Thiamethoxam (Durivo) Syngenta PER87051	28+4A	Contact & Ingestion	35 NG	A	QLD (within Wide Bay Burnett region)	Permitted for use as a single post plant chemigation in cucurbits & fruiting vegetables including eggplant (field & protected) for control of Diamondback Moth, Cabbage White Butterfly, Corn Earworm, Native Budworm, Cabbage Centre Grub, Cabbage Cluster Caterpillar, Cluster Caterpillar , Cabbage Aphid, Green Peach Aphid, Silverleaf Whitefly – all biotypes, Greenhouse Whitefly, Western Flower Thrips, Green Vegetable Bug, Potato moth, Tomato Thrips, Brown Sowthistle Aphid, Vegetable Leafhopper, Lucerne leafroller, Leafhoppers (Jassids), Onion Thrips and Psyllids. [Max. 1 application per crop].	M Bee:VH	R2
Eamectin (Proclaim) Syngenta	6	Ingestion	3 NG	A	ALL	Registered in fruiting vegetables for control of Cluster Caterpillar and Heliiothis. [Max 4 applications per crop; re-treatment interval min. 7 days]	M Bee:H	-

Pest / Active Ingredient (Trade Name)	Chemical group	Activity	WHP, days	Availability	States	Comments	Impact on beneficials	Regulatory risk
Garlic + Chilli + Pyrethrins + Piperonyl Butoxide	3A	Contact	1	A	ALL	Registered in vegetables for control of Ants, Aphids, Caterpillars, Earwigs, Whitefly, Thrips and Leafhoppers. Suitable for organic growers. Apply as a cover spray and re-apply as necessary every 2-3 weeks.	VH Bee:H	-
Methomyl PER82428	1B	Contact	3	A	ALL	Permitted for use in eggplant for control of <i>Helicoverpa</i> spp., Cucumber Moth, Cluster Caterpillar , Loopers, Webworm, Rutherglen Bug & Thrips including Western Flower Thrips. [Max. 6 applications per crop; re-treatment interval 7-14 d]	H Bee:H	R2
Methoxyfenozide (Prodigy) Corteva	18	IGR / Ingestion	NR	A	ALL	Registered in eggplant for control of Cluster Caterpillar , Tomato Grub and Native Budworm. Apply at egg hatch stage. [Max. no. of applications not specified; re-treatment interval 7 d]	VL Bee:VL	-
Pyrethrins + Piperonyl Butoxide	3A	Contact	1	A	ALL	Registered in vegetables for control of Ants, Aphids, Thrips, Caterpillars , Leaf Hoppers, and Whitefly. [Max no. of applications not specified; re-treatment interval: 7 d]	VH Bee:H	-
Cyantraniliprole (Benevia) FMC	28	Ingestion	1	P-A	ALL	Registered in eggplant for control of Silverleaf Whitefly, Cotton Bollworm, Native Budworm, Tomato Leaf Miner and suppression of Green Peach Aphid, Tomato Thrips and Western Flower Thrips.	M Bee:VH	-
Flubendiamide (Belt) Bayer	28	Ingestion	1	P-A	ALL	Registered in eggplant (field and protected) for control of <i>Helicoverpa</i> spp. and Tomato Leafminer.	L-M Bee:L	-
Indoxacarb + Novaluron (Plemax) Adama	22A+15	Contact & Ingestion	3 NG	P-A	ALL	Registered in eggplant for control of <i>Helicoverpa</i> spp. and Tomato Leaf Miner.	M Bee:M	R3
Spinetoram (Success Neo) Corteva	5	Ingestion	1	P-A	ALL	Registered in eggplant for control of Cotton Bollworm, Native Budworm, Tomato Leaf Miner and Western Flower Thrip.	M Bee:H	-

Pest / Active Ingredient (Trade Name)	Chemical group	Activity	WHP, days	Availability	States	Comments	Impact on beneficials	Regulatory risk
Spinosad (Entrust Organic) Corteva	5	Ingestion		P-A		Registered in fruiting vegetables including eggplant & sweet corn for control of Potato Moth, <i>Helicoverpa</i> & Western Flower Thrips.	L Bee:L	-
NUL3445 Nufarm	TBC			P		New active in development. Nufarm claim activity on Lepidoptera.		-
SYNFOI21 Syngenta	TBC			P		SYNFOI21 is not registered but the first global application is proposed for 2023 for Thrips, Bugs, Mites and Caterpillars.	-	-
Cutworms (<i>Agrotis spp.</i>)								
Priority: Moderate								
Cutworm was ranked as a moderate priority in VIC, NSW & WA and as a low priority in QLD & SA. Cutworms are caterpillars that attack seedling crops by chewing through leaves and stems at ground level. This frequently results in loss of whole plants which has a significant impact on production. If insecticide control is required, application should be made late afternoon to evening to coincide with when the larvae are feeding. MT16009 IPM Project Recommends: Predatory wasps, rotation, and early insecticide applications.								
Chlorpyrifos	1B	Contact	14	A	ALL	Registered in eggplant for control of Wingless Grasshopper, Cutworms , Crickets and Vegetable Weevil. Apply at first sign of infestation at the seedling stage. [Max. 1 application per crop]	H Bee:H	R1
Diazinon	1B	Contact	14	A	ALL	Registered in eggplant for control of Cutworms . Spray as necessary. [Max. no. of applications and re-treatment interval not specified]	H Bee:VH	R3
Garlic + Chilli + Pyrethrins + Piperonyl Butoxide	3A	Contact	1	A	ALL	Registered in vegetables for control of Ants, Aphids, Caterpillars, Earwigs, Whitefly, Thrips and Leafhoppers. Suitable for organic growers. Apply as a cover spray and re-apply as necessary every 2-3 weeks.	VH Bee:H	-
Pyrethrins + Piperonyl Butoxide	3A	Contact	1	A	ALL	Registered in vegetables for control of Ants, Aphids, Thrips, Caterpillars , Leaf Hoppers, and Whitefly. [Max no. of applications not specified; re-treatment interval: 7 d]	VH Bee:H	-
Clothianidin + Imidacloprid (Poncho) BASF	4A	Contact & Ingestion		P		Registered in sweet corn as a seed treatment for control of Cutworms and Caterpillars.	M Bee:M	R2

Pest / Active Ingredient (Trade Name)	Chemical group	Activity	WHP, days	Availability	States	Comments	Impact on beneficials	Regulatory risk
NUL3445 Nufarm	TBC			P		New active in development. Nufarm claim activity on Lepidoptera.	-	-
SYNFOI21 Syngenta	TBC			P		SYNFOI21 is not registered but the first global application is proposed for 2023 for Thrips, Bugs, Mites and Caterpillars.	-	-
<p>Melon Thrips (<i>Thrips palmi</i>) Onion Thrips (<i>Thrips tabaci</i>) Priority: Moderate</p> <p>Thrips were ranked as a moderate priority in QLD & WA and as a low priority in VIC, NSW & SA. It can be difficult to distinguish between thrips species in the field. It is important to use different insecticide modes of action to prevent the development of resistance. MT16009 IPM Project Recommends: The use of predatory thrips, mites & bug releases, control flowering weeds, mulch and use of certified seed.</p>								
<i>Beauveria bassiana</i> (Velifer) BASF	UN	Biological	NR	A	ALL	Registered in protected vegetables and ornamentals for suppression of various pests including: Western Flower Thrips, Onion Thrips , Greenhouse Whitefly, Silverleaf Whitefly, Sweet Potato Whitefly, Green Peach Aphid & Two-Spotted Spider Mites. [Max. 3 application per crop; re-treatment interval 3-14 d]	L Bee:L	-
Chlorantraniliprole + Thiamethoxam (Durivo) Syngenta PER87051	28+4A	Contact & Ingestion	35 NG	A	QLD (within Wide Bay Burnett region)	Permitted for use as a single post plant chemigation in cucurbits & fruiting vegetables including eggplant (field & protected) for control of Diamondback Moth, Cabbage White Butterfly, Corn Earworm, Native Budworm, Cabbage Centre Grub, Cabbage Cluster Caterpillar, Cluster Caterpillar, Cabbage Aphid, Green Peach Aphid, Silverleaf Whitefly – all biotypes, Greenhouse Whitefly, Western Flower Thrips, Green Vegetable Bug, Potato Moth, Tomato Thrips, Brown Sowthistle Aphid, Vegetable Leafhopper, Lucerne Leafroller, Leafhoppers (Jassids), Onion Thrips and Psyllids. [Max. 1 application per crop].	M Bee:VH	R2

Pest / Active Ingredient (Trade Name)	Chemical group	Activity	WHP, days	Availability	States	Comments	Impact on beneficials	Regulatory risk
Dimethoate	1B	Contact	14	A	ALL	Registered in eggplant for control of Aphids, Jassids, Mites, Leafhoppers, Green Vegetable Bug, Thrips and Wingless Grasshoppers. Apply when grasshoppers appear and re-apply as required. [Max no. of applications per crop & re-treatment interval not specified]	H Bee:H	R1
Garlic + Chilli + Pyrethrins + Piperonyl Butoxide	3A	Contact	1	A	ALL	Registered in vegetables for control of Ants, Aphids, Caterpillars, Earwigs, Whitefly, Thrips and Leafhoppers. Suitable for organic growers. Apply as a cover spray and re-apply as necessary every 2-3 weeks.	VH Bee:H	-
Imidacloprid (Confidor) Bayer	4A	Contact and Ingestion	7	A	ALL	Registered in eggplant for control of Melon Thrips and Green Peach Aphid. Apply at first sign of infestation. [Max. no. of applications and re-treatment interval not specified]	M Bee:M	R2
Petroleum Oil PER12221	UN	Contact	1	A	ALL (excl. VIC)	Permitted for use in eggplant for control of Aphids, Green Mirid, Green Vegetable Bug, Grey Cluster Bug, Leafhoppers, Mites, Rutherglen Bug, Thrips , Silverleaf Whitefly and Greenhouse Whitefly. [Max. no. of applications and re-treatment interval not specified]	VL Bee:L	-
Phorate (Thimet) PER8930	1B	Contact	70	A	ALL	Permitted for use in eggplant for control of Aphids, Jassids, Mites, Thrips , and Onion Maggot. [Max. no. of applications and re-treatment interval not specified]	H Bee:H	R3
Potassium Salts of Fatty Acids (Natrasoap)	-	Contact	NR	A	ALL	Registered in vegetables for control of Aphids, Mealy Bug, Thrips , Two Spotted Mite, Spider Mite and Whitefly. Apply when temperatures are cooler. [Max no. of applications not specified; re-treatment interval 5-7 d]	L Bee:L	-
Pyrethrins + Piperonyl Butoxide	3A	Contact	1	A	ALL	Registered in vegetables for control of Ants, Aphids, Thrips , Caterpillars, Leaf Hoppers, and Whitefly. [Max no. of applications not specified; re-treatment interval: 7 d]	VH Bee:H	-
Spinetoram (Success Neo) Corteva PER14186	5	Ingestion	1	A	ALL (excl. VIC)	Permitted for use in eggplant for control of Melon Thrips . [Max 4 applications per season; re-treatment interval not specified]	M Bee:H	-

Pest / Active Ingredient (Trade Name)	Chemical group	Activity	WHP, days	Availability	States	Comments	Impact on beneficials	Regulatory risk
Dimpropridaz (Axalion) BASF	TBC			P		BASF has applied for registration to control Whitefly, Aphids and Thrips in leafy vegetables, brassica vegetables and fruiting vegetables, including cucurbits. Pending regulatory approvals, first market introduction in Australia is expected by late 2022 or early 2023.	-	-
Spinosad (Entrust Organic) Corteva	5	Ingestion		P-A		Registered in fruiting vegetables including eggplant & sweet corn for control of Potato Moth, <i>Helicoverpa</i> & Western Flower Thrips.	L Bee:L	-
Flupyradifurone (Sivanto Prime) Bayer	4D	Contact and Ingestion		P		Registered in macadamias for control of Fruit Spotting Bugs, Lace Bug and Scirtothrips. US registration in fruiting vegetables for suppression of Scirtothrips.	L Bee:L	-
NUL3445 Nufarm	TBC			P		Product in development from Nufarm with activity on Thrips.	-	-
SYNFOI21 Syngenta	New			P		SYNFOI21 is not registered but the first global application is proposed for 2023 for Thrips , Bugs, Mites and Caterpillars.	-	-
Green Vegetable Bug (<i>Nezara viridula</i>)								
Priority: Moderate								
Green Vegetable Bug was ranked as a moderate priority in QLD and as a low priority in VIC, NSW, WA & SA. They use their long, thin mouthpart to suck nutrients from the aerial parts of the plant. It emits a foul smell when disturbed to deter predators. The nymphs are attacked by ants, spiders & predatory bugs. It is important to monitor crops for eggs and nymphs of pest species by regular field scouting. Target sprays against mature eggs and nymphs before pests become entrenched.								
Dimethoate	1B	Contact	14	A	ALL	Registered in eggplant for control of Aphids, Jassids, Mites, Leafhoppers, Green Vegetable Bug , Thrips and Wingless Grasshoppers. Apply when grasshoppers appear and re-apply as required. [Max no. of applications per crop & re-treatment interval not specified]	H Bee:H	R1

Pest / Active Ingredient (Trade Name)	Chemical group	Activity	WHP, days	Availability	States	Comments	Impact on beneficials	Regulatory risk
Chlorantraniliprole + Thiamethoxam (Durivo) Syngenta PER87051	28+4A	Contact & Ingestion	35 NG	A	QLD (within Wide Bay Burnett region)	Permitted for use as a single post plant chemigation in cucurbits & fruiting vegetables including eggplant (field & protected) for control of Diamondback Moth, Cabbage White Butterfly, Corn Earworm, Native Budworm, Cabbage Centre Grub, Cabbage Cluster Caterpillar, Cluster Caterpillar, Cabbage Aphid, Green Peach Aphid, Silverleaf Whitefly – all biotypes, Greenhouse Whitefly, Western Flower Thrips, Green Vegetable Bug , Potato Moth, Tomato Thrips, Brown Sowthistle Aphid, Vegetable Leafhopper, Lucerne Leafroller, Leafhoppers (Jassids), Onion Thrips and Psyllids. [Max. 1 application per crop].	M Bee:VH	R2
Petroleum Oil PER12221	UN	Contact	1	A	ALL (excl. VIC)	Permitted for use in eggplant for control of Aphids, Green Mirid, Green Vegetable Bug , Grey Cluster Bug, Leafhoppers, Mites, Rutherglen Bug, Thrips, Silverleaf Whitefly and Greenhouse Whitefly. [Max. no. of applications and re-treatment interval not specified]	VL Bee:L	-
Trichlorfon (Lepidex)	1B	Contact	2	A	ALL	Registered in vegetables for control of Cabbage White Butterfly, Cabbage Moth, Green Vegetable Bug , and Rutherglen Bug [Apply at first sight of infestation re-treatment interval 7-10 d]	H Bee:H	R2
Sulfoxaflor (Transform) Corteva	4C	Contact and Ingestion	1	P-A	ALL	Registered in eggplant for control of Green Peach Aphid and Greenhouse Whitefly, and suppression of Rutherglen Bug and Tomato Potato Psyllid. US registration for suppression of stink bugs in various crops.	M Bee:H	-
Fonicamid (Mainman) ISK/UPL	29	Ingestion		P		Registered for control of Aphids and Silverleaf Whitefly in cucurbits. US registration for control of Aphids, Plant Bugs, Tomato Psyllids and Greenhouse Whitefly in fruiting vegetables, including eggplant.	M Bee:L	-
Flupyradifurone (Sivanto Prime) Bayer	4D	Contact and Ingestion		P		Registered in macadamias for control of Fruit Spotting Bugs, Lace Bug and Scirtothrips. US registration in fruiting vegetables for Leafhoppers, Aphids, Colorado Potato Beetle, Psyllid and Whitefly and suppression of Scirtothrips.	L Bee:L	-

Pest / Active Ingredient (Trade Name)	Chemical group	Activity	WHP, days	Availability	States	Comments	Impact on beneficials	Regulatory risk
NUL3445 Nufarm	TBC			P		Product in development from Nufarm with activity on Bugs.	-	-
SYNFOI21 Syngenta	TBC			P		SYNFOI21 is not registered but the first global application is proposed for 2023 for Thrips, Bugs , Mites and Caterpillars.	-	-
Rutherglen Bug (<i>Nysius vinitor</i>)								
Priority: Moderate								
Rutherglen Bug was ranked as a moderate priority in QLD and as a low priority in WA, SA & VIC. In cropping areas, the pest breeds on weeds, moving to available crops or weeds when hosts die off. It is important to monitor crops for eggs and nymphs by regular field scouting. Repeated influxes of migrating adults can make repeat insecticide applications necessary. Large numbers can cause significant feeding damage to foliage by sucking the sap and depleting the crop of nutrients.								
Methomyl PER82428	1B	Contact	3	A	ALL	Permitted for use in eggplant for control of <i>Helicoverpa</i> spp. Cucumber Moth, Cluster Caterpillar, Loopers, Webworm, Rutherglen Bug & Thrips including Western Flower Thrips. [Max. 6 applications per crop; re-treatment interval 7-14 d]	H Bee:H	R2
Petroleum Oil PER12221	UN	Contact	1	A	ALL (excl. VIC)	Permitted for use in eggplant for control of Aphids, Green Mirid, Green Vegetable Bug, Grey Cluster Bug, Leafhoppers, Mites, Rutherglen Bug , Thrips, Silverleaf Whitefly and Greenhouse Whitefly. [Max. no. of applications and re-treatment interval not specified]	VL Bee:L	-
Pyrethrins (Pyganic)	3A	Contact	NR	A	ALL	Registered in eggplant for control of Rutherglen Bug , Fruit Fly and Spiders. Spray when pests first appear. [Max 3 applications; re-treatment:3 d]	VH Bee:H	-
Sulfoxaflor (Transform) Corteva	4C	Contact and Ingestion	1	A	ALL	Registered in eggplant for control of Green Peach Aphid and Greenhouse Whitefly, and suppression of Rutherglen Bug and Tomato Potato Psyllid. [Max. no. of applications and re-treatment interval not specified]	M Bee:H	-
Trichlorfon (Lepidex)	1B	Contact	2	A	ALL	Registered in vegetables for control of Cabbage White Butterfly, Cabbage Moth, Green Vegetable Bug, and Rutherglen Bug [Apply at first sight of infestation re-treatment interval 7-10 d]	H Bee:H	R2

Pest / Active Ingredient (Trade Name)	Chemical group	Activity	WHP, days	Availability	States	Comments	Impact on beneficials	Regulatory risk
Flonicamid (Mainman) ISK/UPL	29	Ingestion		P		Registered for control of Aphids and Silverleaf Whitefly in cucurbits. US registration for control of Aphids, Plant Bugs, Tomato Psyllids and Greenhouse Whitefly in fruiting vegetables, including eggplant.	M Bee:L	-
Flupyradifurone (Sivanto Prime) Bayer	4D	Contact and Ingestion		P		Registered in macadamias for control of Fruit Spotting Bugs, Lace Bug and Scirtothrips. US registration in fruiting vegetables for Leafhoppers, Aphids, Colorado Potato Beetle, Psyllid and Whitefly and suppression of Scirtothrips.	L Bee:L	-
NUL3445 Nufarm	TBC			P		Product in development from Nufarm with activity on Bugs.	-	-
SYNFOI21 Syngenta	TBC			P		SYNFOI21 is not registered but the first global application is proposed for 2023 for Thrips, Bugs , Mites and Caterpillars.	-	-
<p>Broad Mite (<i>Polyphagotarsonemus latus</i>) Tomato Russet Mite (<i>Aculops lycopersici</i>) Priority: Moderate</p> <p>Mites were ranked as a high priority in QLD & SA and as a low priority in VIC, NSW & WA. Two-Spotted Mites are the major mite species in eggplant, with Broad Mite and Tomato Russet Mite also causing problems on a sporadic basis. Mites cause damage to the aerial parts of the plant providing entry points to various fungal pathogens.</p>								
Dimethoate	1B	Contact	14	A	ALL	Registered in eggplant for control of Aphids, Jassids, Mites , Leafhoppers, Green Vegetable Bug, Thrips and Wingless Grasshoppers. Apply when grasshoppers appear and re-apply as required. [Max no. of applications per crop & re-treatment interval not specified]	H Bee:H	R1
Hexythiazox (Calibre) Nufarm PER14765	10A	Contact / IGR	3	A	ALL	Permitted for use in eggplant (field and protected) for control of Tomato Russet Mite, Broad Mite, Two-Spotted Mite & Tomato Red Mite . [Max 1 application per crop]	L Bee:L	-

Pest / Active Ingredient (Trade Name)	Chemical group	Activity	WHP, days	Availability	States	Comments	Impact on beneficials	Regulatory risk
Petroleum Oil PER12221	UN	Contact	1	A	ALL (excl. VIC)	Permitted for use in eggplant for control of Aphids Green Mirid, Green Vegetable Bug, Grey Cluster Bug, Leafhoppers, Mites , Rutherglen Bug, Thrips, Silverleaf Whitefly and Greenhouse Whitefly. [Max. no. of applications and re-treatment interval not specified]	VL Bee:L	-
Phorate (Thimet) PER8930	1B	Contact	70	A	ALL	Permitted for use in eggplant for control of Aphids, Jassids, Mites , Thrips & Onion Maggot. [Max. no. of applications and re-treatment interval not specified].	H Bee:H	R3
Abamectin	6	Contact & Ingestion	3	P-A	ALL	Registered in eggplant for control of Two-Spotted Mite and Western Flower Thrips.	M Bee:H	-
Etoxazole (Paramite) Sumitomo	10B	IGR / Contact		P		Registered in pome and stone fruits, almonds, cotton, fruiting vegetables and grapes for control of various mites.	L Bee:VL	-
Spiromesifen (Oberon) Bayer	23	Ingestion		P		Hort Innovation ST19020 project contracted in June 2020 is generating data for a label registration to control Mites in multiple commodities, including fruiting vegetables. US registration for control of various mites in fruiting vegetables.	M Bee:VL	-
SYNFOI21 Syngenta	New			P		SYNFOI21 is not registered but the first global application is proposed for 2023 for Thrips, Bugs, Mites and Caterpillars.	-	-
Leafhoppers / Jassids (<i>Cicadellidae</i>)								
Priority: Low								
Leafhoppers were ranked as a moderate priority in SA and as a low priority in VIC, QLD, NSW, & WA. Adult and nymph leafhoppers suck sap and inject toxins. Some Leafhopper species transmit diseases such as viruses and phytoplasmas. Perimeter sprays may be an option to minimise vector transmission.								
Dimethoate	1B	Contact	14	A	ALL	Registered in eggplant for control of Aphids, Jassids , Mites, Leafhoppers , Green Vegetable Bug, Thrips and Wingless Grasshoppers. Apply when grasshoppers appear and re-apply as required. [Max no. of applications per crop & re-treatment interval not specified]	H Bee:H	R1

Pest / Active Ingredient (Trade Name)	Chemical group	Activity	WHP, days	Availability	States	Comments	Impact on beneficials	Regulatory risk
Chlorantraniliprole + Thiamethoxam (Durivo) Syngenta PER87051	28+4A	Contact & Ingestion	35 NG	A	QLD (within Wide Bay Burnett region)	Permitted for use as a single post plant chemigation in cucurbits & fruiting vegetables including eggplant (field & protected) for control of Diamondback Moth, Cabbage White Butterfly, Corn Earworm, Native Budworm, Cabbage Centre Grub, Cabbage Cluster Caterpillar, Cluster Caterpillar, Cabbage Aphid, Green Peach Aphid, Silverleaf Whitefly – all biotypes, Greenhouse Whitefly, Western Flower Thrips, Green Vegetable Bug, Potato Moth, Tomato Thrips, Brown Sowthistle Aphid, Vegetable Leafhopper, Lucerne Leafroller, Leafhoppers (Jassids) , Onion Thrips and Psyllids. [Max. 1 application per crop].	M Bee:VH	R2
Garlic + Chilli + Pyrethrins + Piperonyl Butoxide	3A	Contact	1	A	ALL	Registered in vegetables for control of Ants, Aphids, Caterpillars, Earwigs, Whitefly, Thrips and Leafhoppers . Suitable for organic growers. Apply as a cover spray and re-apply as necessary every 2-3 weeks.	VH Bee:H	-
Petroleum Oil PER12221	UN	Contact	1	A	ALL (excl. VIC)	Permitted for use in eggplant for control of Aphids Green Mirid, Green Vegetable Bug, Grey Cluster Bug, Leafhoppers , Mites, Rutherglen Bug, Thrips, Silverleaf Whitefly and Greenhouse Whitefly. [Max. no. of applications and re-treatment interval not specified]	VL Bee:H	-
Phorate (Thimet) PER8930	1B	Contact	70	A	ALL	Permitted for use in eggplant for control of Aphids, Jassids , Mites, Thrips, and Onion maggot. [Max. no. of applications and re-treatment interval not specified]	H Bee:H	R3
Pyrethrins + Piperonyl Butoxide	3A	Contact	1	A	ALL	Registered in vegetables for control of Ants, Aphids, Thrips, Caterpillars, Leaf Hoppers , and Whitefly. [Max no. of applications not specified; re-treatment interval: 7 d]	VH Bee:H	-
Buprofezin (Applaud) Corteva PER82467	16	Contact & Ingestion	3	P-A	ALL (excl. VIC)	Permitted for use in eggplant (field and protected) for control of Greenhouse Whitefly, Silverleaf Whitefly and Sweet Potato Whitefly. Registered for control of Leafhoppers in citrus.	L Bee:L	-

Pest / Active Ingredient (Trade Name)	Chemical group	Activity	WHP, days	Availability	States	Comments	Impact on beneficials	Regulatory risk
Sulfoxaflor (Transform) Corteva	4C	Contact and Ingestion	1	P-A	ALL	Registered in eggplant for control of Green Peach Aphid and Greenhouse Whitefly, and suppression of Rutherglen Bug and Tomato Potato Psyllid. US registration for control of Leafhoppers in berries, pome fruit and root and tuber vegetables.	M Bee:H	-
Flupyradifurone (Sivanto Prime) Bayer	4D	Contact and Ingestion		P		Registered in macadamia for control of macadamia Lace Bug, Banana Spotting Bug, Fruit Spotting Bug & suppression of Scirtothrips. US registration for control of Leafhoppers , Aphids and Whiteflies in Brassica vegetables.	L Bee:VL	-
SYNFOI21 Syngenta	TBC			P		SYNFOI21 is not registered but the first global application is proposed for 2023 for Thrips, Bugs , Mites and Caterpillars.	-	-

Green Mirid (*Creontiades dilutus*)

Priority: Low

Green Mirids were ranked as a moderate priority in NSW & SA and as a low priority in VIC, QLD & WA. Green Mirids are plant bugs whose adults and nymphs pierce plant tissue and release a chemical that destroys cells in the feeding zone. Large numbers can cause significant feeding damage to leaves by sucking the sap and depleting the crop of nutrients.

Petroleum Oil PER12221	UN	Contact	1	A	ALL (excl. VIC)	Permitted for use in eggplant for control of Aphids, Green Mirid , Green Vegetable Bug, Grey Cluster Bug, Leafhoppers, Mites, Rutherglen Bug, Thrips, Silverleaf Whitefly and Greenhouse Whitefly. [Max. no. of applications and re-treatment interval not specified]	VL Bee:L	-
Sulfoxaflor (Transform) Corteva	4C	Contact and Ingestion	1	P-A	ALL	Registered in eggplant for control of Green Peach Aphid and Greenhouse Whitefly, and suppression of Rutherglen Bug and Tomato Potato Psyllid. Registered for control of Green Mirids in cotton and strawberries.	M Bee:H	-
Flupyradifurone (Sivanto Prime) Bayer	4D	Contact and Ingestion		P		Registered in macadamia for control of macadamia Lace bug, Banana spotting bug, Fruit spotting bug & suppression of Scirtothrips.	L Bee:VL	-

Pest / Active Ingredient (Trade Name)	Chemical group	Activity	WHP, days	Availability	States	Comments	Impact on beneficials	Regulatory risk
<i>Clitoria ternatea</i> Extract (Sero-X) Growth Agriculture	UN	Biological	NR	P		Registered in cotton for control of <i>Helicoverpa</i> spp., Green Mirids and Silverleaf Whitefly and in brassica leafy vegetables for control of Diamondback Moth. Innovate Ag applied in January 2021 to the APVMA seeking to add new uses against Silverleaf whitefly and thrips in brassicas and cucurbits to its Sero-X Insecticide label.	-	-
Fonicamid (Mainman) ISK	9C	Ingestion		P		Registered in cucurbits for control of Aphids and Silverleaf Whitefly; Aphids in potatoes; Aphids and Mealybugs in apples and pears; Aphids and Mirids in cotton. US label approves use on legume vegetables on Aphids, Plant Bugs and Greenhouse Whitefly.	M L-Bees	-
NUL3445 Nufarm	TBC			P		Product in development from Nufarm with activity on Bugs.	-	-
SYNFOI21 Syngenta	TBC			P		SYNFOI21 is not registered but the first global application is proposed for 2023 for Thrips, Bugs , Mites and Caterpillars.	-	-
<p>Queensland Fruit Fly (<i>Bactrocera tryoni</i>) Mediterranean Fruit Fly (<i>Ceratitis capitata</i>) Cucumber Fruit Fly (<i>Bactrocera cucumis</i>) Priority: Low</p> <p>Fruit Flies were ranked as a moderate priority in NSW and as a low priority in VIC, QLD, WA & SA. Fruit flies usually attack fruits and cause rots and discolouration. Eggs are laid close to the surface inside the fruit with small, discoloured patches developing because of the stings. Interstate quarantine restrictions are in place to prevent further spread of Mediterranean and Queensland Fruit Flies.</p>								
Alpha-Cypermethrin PER80099	3A	Contact	1	A	ALL (excl. VIC)	Permitted for use in eggplant for control of Queensland Fruit Fly and Mediterranean Fruit Fly in eggplant. [Max 3 applications per crop; 2 consecutive; re-treatment interval 7 d]	VH Bee:H	-
Clothianidin (Samurai) PER80100	4A	Contact and Ingestion	7 NG	A	ALL	Permitted for use in eggplant for control of Queensland Fruit Fly and Mediterranean Fruit Fly . [Max 2 applications per crop; re-treatment interval 7 d]	M Bee:VH	R2

Pest / Active Ingredient (Trade Name)	Chemical group	Activity	WHP, days	Availability	States	Comments	Impact on beneficials	Regulatory risk
Dimethoate PER12506	1B	Contact	14	A	ALL (excl. VIC)	Permitted for use in eggplant for control of Queensland Fruit Fly and Mediterranean Fruit Fly . [Max no. of applications per crop & re-treatment interval not specified]	H H-Bees	R1
Pyrethrins (Pyganic)	3A	Contact	NR	A	ALL	Registered in eggplant for control of Rutherglen Bug, Fruit Fly and Spiders. Spray when pests first appear. [Max 3 applications; re-treatment: 3 d]	VH Bee:H	-
Spinosad (Naturalure) Corteva	5	Ingestion	NR	A	ALL	Registered as a bait solution in fruit trees and vegetables for control of Fruit Flies . [Max no. of applications not specified; re-treatment interval 7 d]	L Bee:L	-
Trichlorfon (Lepidex) PER80717	1B	Contact	2 NG	A	ALL (excl. VIC)	Permitted for use in eggplant for control of Queensland Fruit Fly and Mediterranean fruit fly . [Max 8 applications per crop; re-treatment interval 7 d]	H Bee:H	R2
Spinetoram (Success Neo) Corteva	5	Ingestion	1	P-A	ALL	Registered in eggplant for control of Cotton Bollworm, Native Budworm, Potato Moth (Tomato Leaf Miner) and Western Flower Thrips. Permitted in strawberries for suppression of Queensland Fruit Fly , Mediterranean Fruit Fly and Lesser Queensland Fruit Fly.	M Bee:H	-
Acetamiprid + Pyriproxyfen (Trivor) Adama	4A+7C	Ingestion/ IGR		P		Registered for suppression of Queensland Fruit Fly in avocado, citrus and mango.	M Bee:H	-
Maldison	1B	Contact		P		Registered in capsicum for control of Fruit Fly .	H Bee:H	-
Novaluron + Acetamiprid (Cormoran) Adama	15+4A	IGR / Contact & Ingestion		P		Currently registered for control of Mediterranean Fruit Fly and suppression of Queensland Fruit Fly in stone fruit.	M Bee:M	R2
NUL3445 Nufarm	TBC			P		Product in development from Nufarm with activity on Fruit Fly .	-	-

Pest / Active Ingredient (Trade Name)	Chemical group	Activity	WHP, days	Availability	States	Comments	Impact on beneficials	Regulatory risk
Field Crickets (<i>Teleogryllus commodus</i>) Mole Crickets (<i>Gryllotalpa</i> spp.) Grasshoppers (Orthoptera) Priority: Low Crickets were ranked as a low priority in VIC, QLD, NSW, WA & SA. They have a voracious appetite and can cause severe damage to foliage if the numbers get high. Damage is limited to feeding on newly established plants and reducing plant populations.								
Chlorpyrifos (Lorsban)	1B	Contact	14	A	QLD	Registered in eggplant for control of Wingless Grasshopper , Cutworms, Cricket s and Vegetable Weevil. Apply at first sign of infestation at the seedling stage. [Max. 1 application per crop]	H Bee:H	R1
Dimethoate	1B	Contact	14	A	ALL	Registered in eggplant for control of Aphids, Jassids, Mites, Leafhoppers, Green Vegetable Bug, Thrips and Wingless Grasshoppers . Apply when grasshoppers appear and re-apply as required. [Max no. of applications per crop & re-treatment interval not specified]	H Bee:H	R1
Ladybirds - 26 and 28-spotted Ladybird Beetles (<i>Henosepilachna</i> spp.) Priority: Low Ladybird beetles (26 and 28-spotted) were ranked as a low priority in VIC, QLD, NSW, WA & SA. The larvae graze the under surface, leaving the upper surface intact whereas the adults feed on both sides of the leaf, often making holes as they chew. Attacks cause death of seedlings.								
Clothianidin (Samurai) PER80100	4A	Contact and Ingestion	7 NG	P-A	ALL	Permitted for use in eggplant for control of Queensland Fruit Fly and Mediterranean Fruit Fly. Registered for control of Carpophilus Beetle in stone fruit.	M Bee:VH	R2
Indoxacarb (Avatar) FMC	22A	Ingestion	3	P-A	ALL	Registered in eggplant for control of Cotton Bollworm, Native Budworm and Tomato Leaf Miner. Registered for control of weevils in celery, pome and stone fruit, strawberries and grapes.	L Bee:H	R3
Maldison	1B	Contact		P		Registered in specific vegetables including beans for control of Aphid, Green Vegetable Bug, Jassids, Leaf hopper, Red legged earth mite, Rutherglen bug & Twenty-Eight Spotted Ladybirds .	H Bee:H	-
NUL3445 (Nufarm)	TBC			P		Product in development from Nufarm with activity on beetles.	-	-

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 Beetles, Weevils & Lepidoptera in almonds, macadamia, pome and stone fruit and Banana Weevil Borer in bananas.	M Bee:VH	-
Looper Caterpillars (<i>Chrysodeixis</i> spp.)								
Priority: Low								
Looper Caterpillars were ranked as a low priority in VIC, QLD, NSW, WA & SA. Loopers are voracious leaf feeders but do not usually attack the fruit.								
<i>Bacillus thuringiensis subsp. kurstaki</i> (DiPel)	11A	Biological	NR	A	ALL	Registered in vegetables for control of Looper Caterpillars and <i>Helicoverpa</i> spp. [Apply a minimum of 2 sprays, 3 d apart; re-treatment interval 3-5 d]	VL Bee:L	-
Garlic + Chilli + Pyrethrins + Piperonyl Butoxide	3A	Contact	1	A	ALL	Registered in vegetables for control of Ants, Aphids, Caterpillars, Earwigs, Whitefly, Thrips and Leafhoppers. Suitable for organic growers. Apply as a cover spray and re-apply as necessary every 2-3 weeks.	VH Bee:H	-
Methomyl PER82428	1B	Contact	3	A	ALL	Permitted for use in eggplant for control of <i>Helicoverpa</i> spp., Cucumber Moth, Cluster Caterpillar, Loopers , Webworm, Rutherglen Bug & Thrips including Western Flower Thrips. [Max. 6 applications per crop; re-treatment interval 7-14 d]	H Bee:H	R2
Pyrethrins + Piperonyl Butoxide	3A	Contact	1	A	ALL	Registered in vegetables for control of Ants, Aphids, Thrips, Caterpillars , Leaf Hoppers, and Whitefly. [Max no. of applications not specified; re-treatment interval: 7 d]	VH Bee:H	-
Indoxacarb + Novaluron (Plemax) Adama	22A+15	Contact & Ingestion	3 NG	P-A	ALL	Registered in eggplant for control of <i>Helicoverpa</i> spp. and Tomato Leaf Miner.	M Bee:M	R3

Pest / Active Ingredient (Trade Name)	Chemical group	Activity	WHP, days	Availability	States	Comments	Impact on beneficials	Regulatory risk
Spinosad (Entrust Organic) Corteva	5	Ingestion	3	P-A	ALL	Registered in fruiting vegetables including eggplant for control of Potato Moth, <i>Helicoverpa</i> spp. & Western Flower Thrips. [Max. 4 applications per season; re-treatment interval 7-14 d]. Registered in Brassica vegetables for control of various Lepidoptera including Cabbage Centre Grub, Cabbage Cluster Caterpillar, Cabbage White Butterfly, Loopers & Diamondback Moth.	L Bee:L	-
SYNFOI21 Syngenta	TBC			P		SYNFOI21 is not registered but the first global application is proposed for 2023 for Thrips, Bugs, Mites and Caterpillars.	-	-
Potato Moth / Tomato Leaf Miner (<i>Phthorimaea operculella</i>)								
Priority: Low								
Potato Moth was ranked as a low priority in VIC, QLD, NSW, WA & SA. They can damage both aerial and underground parts of plants. Sprinkler irrigation assists with management as it deters the adult moths from ovipositing.								
<i>Bacillus thuringiensis subsp. kurstaki</i> (DiPel)	11C	Biological	NR	A	ALL	Registered in vegetables for control of Lepidopteran Moths and caterpillars including Potato Moth . [Apply a minimum of 2 sprays, 3 d apart; re-treatment interval 3-5 d]	VL Bee:L	-
Cyantraniliprole (Benevia) FMC	28	Ingestion	1	A	ALL	Registered in eggplant for control of Silverleaf Whitefly, Cotton Bollworm, Native Budworm, Tomato Leaf Miner and suppression of Green Peach Aphid, Tomato Thrips and Western Flower Thrips. [max 2 application per crop; re-treatment interval 7-10 d]	M Bee:VH	-
Flubendiamide (Belt) Bayer	28	Ingestion	1	A	ALL	Registered in eggplant (field and protected) for control of <i>Helicoverpa</i> spp. and Tomato Leaf Miner (<i>Phthorimaea operculella</i> .) [Max. 3 applications per crop; re-treatment interval 7-14 d]	L-M Bee:L	-
Garlic + Chilli + Pyrethrins + Piperonyl Butoxide	3A	Contact	1	A	ALL	Registered in vegetables for control of Ants, Aphids, Caterpillars, Earwigs, Whitefly, Thrips and Leafhoppers. Suitable for organic growers. Apply as a cover spray and re-apply as necessary every 2-3 weeks.	VH Bee:H	-

Pest / Active Ingredient (Trade Name)	Chemical group	Activity	WHP, days	Availability	States	Comments	Impact on beneficials	Regulatory risk
Indoxacarb (Avatar) FMC	22A	Ingestion	3	A	ALL	Registered in eggplant for control of Cotton Bollworm, Native Budworm, and Potato Moth (Tomato Leaf Miner). [Max. 3 applications per crop; re-treatment interval 7 d]	L Bee:H	R3
Indoxacarb + Novaluron (Plemax) Adama	22A+15	Contact & Ingestion	3 NG	A	ALL	Registered in eggplant for control of <i>Helicoverpa</i> spp. and Tomato Leaf Miner . [Max. 3 applications per crop; no more than 2 consecutive applications; min retreatment interval 7 days]	M Bee:M	R3
Pyrethrins + Piperonyl Butoxide	3A	Contact	1	A	ALL	Registered in vegetables for control of Ants, Aphids, Thrips, Caterpillars, Leaf Hoppers, and Whitefly. [Max no. of applications not specified; re-treatment interval: 7 d]	VH Bee:H	-
Spinetoram (Success Neo) Corteva	5	Ingestion	1	A	ALL	Registered in eggplant for control of Cotton Bollworm, Native Budworm, Potato Moth (Tomato Leaf Miner) and Western Flower Thrips. [Max. no. of applications not specified; re-treatment interval 7-14 d]	M Bee:H	-
Spinosad (Entrust Organic) Corteva	5	Ingestion	3 G:14	A	ALL	Registered in fruiting vegetables including eggplant & sweet corn for control of Potato Moth , <i>Helicoverpa</i> & Western Flower Thrips. [Max. 4 applications per season; re-treatment interval 7-14 d]	L Bee:L	-
SYNFOI21 Syngenta	TBC			P		SYNFOI21 is not registered but the first global application is proposed for 2023 for Thrips, Bugs, Mites and Caterpillars.	-	-
Vegetable Weevil (<i>Listroderes difficilis</i>)								
Priority: Low								
Vegetable Weevil was ranked as a low priority in VIC, QLD, NSW, WA & SA. Can cause damage by tunnelling into leaves and reducing plant vigour. MT16009 IPM Project Recommends: Control broadleaf weed hosts (e.g. marshmallow) in the season prior to planting.								
Chlorpyrifos (Lorsban)	1B	Systemic & contact	14	A	NSW	Registered in eggplant for control of Wingless Grasshopper, Cutworms, Crickets and Vegetable Weevil . Apply at first sign of infestation at the seedling stage. [Max. 1 application per crop]	H Bee:H	R1
Clothianidin (Samurai) PER80100	4A	Systemic	7 NG	P-A	ALL	Permitted for use in eggplant for control of Queensland Fruit Fly and Mediterranean Fruit Fly. Registered for control of Fullers Rose Weevil in citrus.	M Bee:VH	R2

Pest / Active Ingredient (Trade Name)	Chemical group	Activity	WHP, days	Availability	States	Comments	Impact on beneficials	Regulatory risk
Indoxacarb (Avatar) FMC	22A	Ingestion	3	P-A	ALL	Registered in eggplant for control of Cotton Bollworm, Native Budworm, and Potato Moth (Tomato Leaf Miner). Registered for control of weevils in celery, pome and stone fruit, strawberries and grapes.	L Bee:H	R3
NUL3445 (Nufarm)	TBC			P		Product in development from Nufarm with activity on beetles.	-	-
Tetraniliprole (Vayego) Bayer	28	Ingestion		P		Registered for control of Beetles, Weevils & Lepidoptera in almonds, macadamia, pome and stone fruit and Banana Weevil Borer in bananas. Hort Innovation has several projects underway towards assisting registration in minor crops.	M Bee:VH	-
Fungus Gnats (<i>Sciaridae</i> spp.)								
Priority: Low								
Fungus gnats were not ranked as a pest in eggplants. Fungus gnats (<i>Bradysia</i> spp., Sciaridae) are small, mosquito-like flies which are a common problem in nurseries and greenhouses where propagation material and seedlings are being grown.								
<i>Bacillus thuringiensis</i> (Vertobac) Sumitomo PER14694	11A	Biological	NR	A	ALL (excl. VIC)	Permitted for use in capsicums, cucumber eggplants, herbs & lettuce (protected situations) for control of Fungal Gnats . Will only control larvae. For existing infestations make 3 weekly applications.	VL Bee:L	-
Diazinon	1B	Contact	14	P-A	ALL	Registered in eggplant for control of Cutworms. Registered for control of Fungus Gnats in potted ornamentals.	H Bee:VH	R3
Acetamiprid (Crown 225SL)	4A	Contact & Ingestion		P		Registered in potting mix, compost and manure for control of Fungus Gnats .	M Bee:M	-
Azadirachtin (Eco-Neem)	UN	Contact & Ingestion		P		Registered in potting soil (floriculture and ornamental) for control of Fungus Gnats .	L Bee:L	-

Pest / Active Ingredient (Trade Name)	Chemical group	Activity	WHP, days	Availability	States	Comments	Impact on beneficials	Regulatory risk
Fall Armyworm (<i>Spodoptera frugiperda</i>)								
Priority: Unknown								
Fall armyworm was not ranked as a pest in eggplants. It is an exotic pest that is considered a potential threat that could affect most vegetable crops if allowed to spread. It is important to monitor crops for eggs and larvae of pest species by regular field scouting. Target sprays against mature eggs and newly hatched larvae before pests become entrenched.								
Chlorantraniliprole (Coragen) PER89259	28	Ingestion	1	A	ALL (excl. VIC)	Permitted for use in field peas, faba beans, Brassica vegetables, Brassica leafy vegetables, Stalk and stem vegetables, Leafy vegetables, Fruiting vegetables (including cucurbits), Legume vegetables, Potatoes Sweet corn & Lettuce for control of Fall Armyworm . [Max. 3 applications per crop; 2 consecutive; re-treatment interval 7 d]	L Bee:VL	-
Chlorantraniliprole +Thiamethoxam (Durivo) PER89280	28+4A	Contact & Ingestion	42	A	ALL (excl. VIC)	Permitted for use in Brassica vegetables, Brassica leafy vegetables and Fruiting vegetables excluding cucurbits for control of Fall Armyworm . Do not transplant seedlings treated by seedling drench into hydroponic production systems. [max 1 application per crop]	M Bee:VH	R2
Emamectin (Proclaim) PER89263	6	Contact & systemic	3 NG	A	ALL (excl. VIC)	Permitted for use in Brassica vegetables, Root and tuber vegetables, (except potato) Leafy vegetables, Brassica leafy vegetables, Sweet Corn, Lettuce, Cucurbits, Legume vegetables and Fruiting vegetables (field grown and protected cropping) for control of Fall Armyworm . [Max 4 applications per crop; re-treatment interval: 7 d]	M Bee:H	-
Indoxacarb (Avatar) PER89278	22A	Ingestion	7	A	ALL (excl. VIC)	Permitted for use in Broccoli, Brussels sprouts, Cabbage (closed head varieties only), Cauliflower, Celery, Capsicum, Eggplant, Peppers Tomato (field or trellis), Leafy vegetables & Chinese leafy vegetables for control of Fall Armyworm . [Max 4 applications per crop; re-treatment interval: 7 d]	L Bee:H	R3

Pest / Active Ingredient (Trade Name)	Chemical group	Activity	WHP, days	Availability	States	Comments	Impact on beneficials	Regulatory risk
Methomyl PER89293	1A	Contact and systemic	14	A	ALL	Permitted for use in Spinach, Fennel, Brassica leafy vegetables, Fruiting vegetables, Root & tuber vegetables, Lettuce, Celery, Bulb onions, Fennel bulb, Leeks & turf (Field grown only) for control of Fall Armyworm . [Max. 3 application per crop; re-treatment interval not specified]	H Bee:H	R2
Spinetoram (Success Neo) PER89241	5	Ingestion	3	A	ALL (excl. VIC)	Permitted for use in Sweet corn, Brassica vegetables, Brassica leafy vegetables, Stalk and stem vegetables, Leafy vegetables, Fruiting vegetables (including cucurbits), Legume vegetables, Stalk and stem vegetables, Culinary herbs, Root and tuber vegetables and several fruits for control of Fall Armyworm . [Max. 4 applications per crop; re-treatment interval 7-14 d]	M Bee:H	-
Spinosad (Entrust Organic) Corteva PER89870	5	Ingestion	3 G:14	A	ALL (excl. VIC)	Permitted for use in Brassica vegetables, Brassica leafy vegetables, Cucurbits, Stalk and stem vegetables, Leafy vegetables, Fruiting vegetables, Legume vegetables (succulent seeds & immature pods only), Stalk and stem vegetables, Culinary herbs, Root and tuber vegetables & several fruits for control of Fall Armyworm (Protected cropping). [Max. 4 applications per season; re-treatment interval 7-14 d]	L Bee:L	-
Broflanilide (Vedira) BASF	30	Contact & ingestion		P		Registration submitted concurrently in Australia, Canada, USA, and Mexico as a soil application and seed treatment against chewing insects such as Ants, Cockroaches and Spodoptera spp. BASF are seeking registrations in amenity turf initially, then potential horticultural crops thereafter.	H Bee:VH	-
Amorphous Silica (Abrade) Grow Choice	-	Contact		P-A		Registered for control of <i>Spodoptera</i> in fruiting vegetables and permitted for control of Fall Armyworm in sweet corn.	L Bee:L	-

Pest / Active Ingredient (Trade Name)	Chemical group	Activity	WHP, days	Availability	States	Comments	Impact on beneficials	Regulatory risk
Tetraniliprole (Vayego 200 SC) Bayer	28	Disrupts feeding		P		Tetraniliprole differs from most other group 28 insecticides as the spectrum of control expands beyond Lepidoptera control to include Coleoptera and Diptera plus other specific sucking pests. Label registration in vegetable crops in Indonesia for Leafminers - <i>Liriomyza huidobrensis</i> and Fall armyworms (FAW) <i>Spodoptera frugiperda</i> .	M Bee:VH	
NUL3445 Nufarm	TBC			P		New product in development from Nufarm with activity on Lepidoptera , Bugs, Beetles/Weevils, Fruit Fly and Thrips.	-	-
SYNFOI21 Syngenta	TBC			P		SYNFOI21 is not registered but the first global application is proposed for 2023 for Thrips, Bugs, Mites and Caterpillars.	-	-
<i>Spodoptera frugiperda</i> Multiple Nucleopolyhedrovirus (Fawligen) AgBiTech	31	Biological		P		Permitted for control of Fall Armyworm in cereal grains, oilseed, pulses, fodder and forage crops, cotton, sweet corn, root and tuber vegetables, legume vegetables and ornamentals.	VL Bee:L	-
Tomato Potato Psyllid (<i>Bactericera cockerelli</i>)								
Priority: Unknown								
Tomato Potato Psyllid was not ranked as a pest in eggplants. It is an exotic pest that is considered a potential threat that could affect most vegetable crops if allowed to spread. It is important to monitor crops for eggs and larvae of pest species by regular field scouting. Target sprays against mature eggs and newly hatched larvae before pests become entrenched.								
Abamectin PER84229	6	Contact & Ingestion	3	A	ALL	Permitted for use in eggplant, capsicum & chilli (field and protected cropping) for control of Tomato Potato Psyllid . [Max. 2 application per crop; re-treatment interval 28 d].	M Bee:H	-
Bifenthrin PER84229	3A	Contact	3	A	ALL	Permitted for use in eggplant, capsicum & chilli (field only) for control of Tomato Potato Psyllid . [Max. 2 application per crop; re-treatment interval 14-20 d]	VH H-Bees	R3
Cyantraniliprole (Benevia) PER84805	28	Ingestion	1	A	ALL (excl. VIC)	Permitted for use in peppers tomato and eggplant for control of Tomato Potato Psyllid . [Max. 2 application per crop; re-treatment interval 7-10 d].	M Bee:VH	-

Pest / Active Ingredient (Trade Name)	Chemical group	Activity	WHP, days	Availability	States	Comments	Impact on beneficials	Regulatory risk
Methomyl (Lannate) PER84229	1A	Contact & ingestion	3	A	ALL	Permitted for use in eggplant, capsicum & chilli (field only) for control of Tomato Potato Psyllid . [Max. 2 application per crop; re-treatment interval 28 d]	H Bee:H	R2
Spinetoram (Success Neo) Corteva PER84757	5	Ingestion	1	A	ALL (excl. VIC)	Permitted for use in fruiting vegetables including peppers, tomato, eggplants, root & tuber vegetables for control of Tomato Potato Psyllid . [Max. 4 application per crop; re-treatment interval 7-14 d]	M Bee:H	-
Spirotetramat (Movento) Bayer PER84245	23	Ingestion	1	A	ALL	Permitted for use in fruiting vegetables including peppers, potato, sweet potato, capsicum & eggplant (field and protected cropping) for control of Tomato Potato Psyllid . [Max. 4 application per crop; re-treatment interval 7-14 d]	M Bee:VL	-
Sulfoxaflor (Transform) Corteva	4C	Contact and Ingestion	1	A	ALL	Registered in eggplant for control of Green Peach Aphid and Greenhouse Whitefly, and suppression of Rutherglen Bug and Tomato Potato Psyllid . [Max. no. of applications and re-treatment interval not specified]	M Bee:H	-
Leafminers (<i>Liriomyza</i> spp.)								
Priority: Unknown								
Leafminer was not ranked as a pest in eggplants. Dipteran leaf miners (<i>Liriomyza</i> spp.) are exotic pests that have recently been detected and become problematic in Australia. For example, the Serpentine leaf miner was first detected in the Sydney area in October 2020 and has since been found in crops in SE Qld. As a group they are destructive pests and can cause significant economic loss through reduced yields and quality when uncontrolled.								
Abamectin PER81876	6	Contact & Ingestion	7 NG	A	ALL (excl. VIC)	Permitted for use in eggplant (Fruiting vegetables - All) for suppression of Liriomyza Leafminers . [Max. 2 applications per crop; re-treatment interval 7-14 d]	M Bee:H	-
Cyromazine (Diptex 150 WP) PER81867	17	Insect Growth Regulator	7 NG	A	ALL	Permitted for use in eggplant (Fruiting vegetables – other than cucurbits) for control of Liriomyza Leafminers . [Max. 6 applications per crop; re-treatment interval 7 d]	L Bee:H	-

Pest / Active Ingredient (Trade Name)	Chemical group	Activity	WHP, days	Availability	States	Comments	Impact on beneficials	Regulatory risk
Cyantraniliprole (Benevia) PER90387	28	Ingestion	1 NG	A	ALL (excl. VIC)	Permitted for use in eggplant (Fruiting vegetables – other than cucurbits) for control of Leaf miners (<i>Liriomyza</i> spp.) Including: Vegetable leaf miner (<i>Liriomyza sativae</i>) Pea leaf miner/Serpentine leaf miner (<i>Liriomyza huidobrensis</i>) & American serpentine leaf miner (<i>Liriomyza trifolii</i>). [Max. 2 applications per crop; re-treatment interval 7 d]	M Bee:VH	-
Spinosad (Entrust Organic) Corteva PER90928	5	Ingestion	3 G:14	A	ALL (excl. VIC)	Permitted for use in fruiting vegetables for control of Liriomyza Leafminers . [Max. 4 applications per crop; min. re-treatment interval 4 d]	L Bee:L	-
Spirotetramat (Movento) PER88640	23	Ingestion	1	A	ALL (excl. VIC)	Permitted for use in eggplant for control of Liriomyza Leafminers . Field and protected cropping systems. [Max. 3 applications per crop; re-treatment interval 7 d]	M Bee:VL	-
Chlorantraniliprole (Coragen) FMC	28	Ingestion	3	P-A	ALL	Registered in eggplant for control of Cotton Bollworm, Native Budworm, Tomato Leaf Miner, and Eggfruit Caterpillar. Permitted for control of Liriomyza Leafminers in spinach and silverbeet.	L Bee:VL	-
Spinetoram (Success Neo) Corteva	5	Ingestion	1	P-A	ALL	Registered in eggplant for control of Cotton Bollworm, Native Budworm, Tomato Leaf Miner and Western Flower Thrips. Permitted for control of Liriomyza Leafminers in snow peas, sugar snap peas and green beans.	M Bee:H	-
Tetraniliprole (Vayego 200 SC) Bayer	28	Disrupts feeding		P		Tetraniliprole differs from most other group 28 insecticides as the spectrum of control expands beyond Lepidoptera control to include Coleoptera and Diptera plus other specific sucking pests. Label registration in vegetable crops in Indonesia for Leafminers - <i>Liriomyza huidobrensis</i> and Fall armyworms (FAW) <i>Spodoptera frugiperda</i> .	M Bee:VH	

4.3 Weeds in Eggplant

4.3.1 Weed priorities

Common Name	Scientific Name
High	
Blackberry Nightshade	<i>Solanum nigrum</i>
Pigweed	<i>Portulaca spp.</i>
Moderate	
Fat Hen	<i>Chenopodium album</i>
Marshmallow	<i>Malva parviflora</i>
Fleabane	<i>Conyza spp.</i>
Nutgrass	<i>Cyperus rotundus</i>

Non-ranked grass weeds.

Priority: Unknown	
Grass Weeds	Various

The high priority weed issues based on the feedback received were Blackberry Nightshade and Pigweeds. Managing these weeds would be possible using herbicides mentioned in Appendix 3 or by various management practices such as soil fumigation, pre-crop spraying, spot spraying, or using mechanical devices.

Growers generally use a pre-plant weed control (general knockdown herbicides) to prepare the paddock. Growers then either alternate the herbicides used or use them in combination for effective weed control. All the herbicides registered/permited are either pre-emergent herbicides or early post-emergent herbicides. Most weeds can be controlled with currently available herbicides.

Resistance management

There are confirmed cases of resistance in Australia for Awnless Barnyard Grass (Group M at more than 200 sites), Feather top Rhodes Grass (Group M at 4 sites) and Blackberry Nightshade (Group L at 2 sites).

Specific resistance management strategies for high resistance risk (A and B) and moderate resistance risk (C, D, F, G, I, J, K, L, M, N, Q and Z) herbicide modes of action are available on the CropLife Australia webpage.

<https://www.croplife.org.au/resources/programs/resistance-management/herbicide-resistance-management-strategies-2/>

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 6)	
		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
Blackberry Nightshade (<i>Solanum nigrum</i>)							
Priority: High							
Blackberry Nightshade was ranked as a moderate priority in VIC & WA, and as a high priority in QLD, NSW & SA. Prolific weed that is widely adapted and difficult to eradicate, mainly due to its long-term seed viability.							
1,3-Dichloropropene + Chloropicrin (Telone C-35)	8B	Vegetables / Soil fumigant	Registered in various crops including vegetables for control of plant parasitic nematodes, symphylans, wireworms, soil borne diseases and suppression of weeds . Do not plant for 7 d after soil treatment.	NR	A	ALL (Restrict use TAS, VIC & SA)	-
Glyphosate (Roundup)	M**	General seed bed preparation	General weeds as a pre-crop spray.	NR	A	ALL	R3
Paraquat + Diquat (SpraySeed)	L**	General seed bed preparation	General weeds as a pre-crop spray.	NR	A	ALL	R3
Trifluralin	D**	Eggplant / Residual pre-emergent	Registered for use in eggplant for control of various broadleaf and grass weeds including Blackberry Nightshade & Pigweed. Occasionally used pre-planting (under plastic mulch) to control annual broadleaf weeds. Considered effective	NR	A	ALL	-

Active Ingredient (Trade Name)	Chemical Group	Crop/ Situation	Comment / Use / Weed	WHP (days)	Availability	States	Regulatory Risk
Isoxaflutole (Balance) Bayer	H**		Registered for use in sugarcane, chickpeas and fallow situations for control of grass and broadleaf weeds including Blackberry nightshade .		P		
S-Metolachlor + Prosulfocarb (Boxer Gold) Syngenta	J**+K**		Registered for use in several crops for control of grass and broadleaf weeds including Blackberry nightshade .		P		
Oxyfluorfen (Goal)	G**		Registered in broccoli, cabbage & cauliflower for pre-emergent control of several broadleaf and grass weeds including Blackberry nightshade , Fat hen, Pig weed and Marshmallow. Apply 4-7 days prior to transplanting. Irrigation or rainfall is essential for activation of this herbicide		P		-
Pigweed (<i>Portulaca</i> spp.)							
Priority: High							
Pigweed was ranked as a moderate priority in VIC, WA & SA, and as a high priority in QLD & NSW. Summer growing weed that competes aggressively in-crop and can be difficult to control with herbicides.							
1,3-Dichloropropene + Chloropicrin (Telone C-35)	8B	Vegetables / Soil fumigant	Registered in various crops including vegetables for control of plant parasitic Nematodes, Symphylans, Wireworms, soil borne diseases & suppression of weeds . Do not plant for 7 d after soil treatment.	NR	A	ALL (Restrict use TAS, VIC & SA)	-
Glyphosate (Roundup)	M**	General seed bed preparation	General weeds as a pre-crop spray.	NR	A	ALL	R3
Paraquat + Diquat (SpraySeed)	L**	General seed bed preparation	General weeds as a pre-crop spray.	NR	A	ALL	R3
Trifluralin	D**	Eggplant / Residual pre-emergent	Registered in eggplant for control of various broadleaf and grass weeds including Blackberry Nightshade & Pigweed . Occasionally used pre-planting (under plastic mulch) to control annual broadleaf weeds.	NR	A	ALL	-

Active Ingredient (Trade Name)	Chemical Group	Crop/ Situation	Comment / Use / Weed	WHP (days)	Availability	States	Regulatory Risk
Acifluorfen	G**		Registered in beans for control of various weeds including Blackberry nightshade, Pigweed , Thorn apple and Wild radish. [Max 3 applications per crop; re-treatment interval not specified]		P		-
Chloridazon (Pyramin) BASF	C**		Registered in silverbeet and baby spinach leaf (VIC & TAS) for control of a range of weeds including, Cape weed, Chickweed, Dead nettle, Dwarf nettle, Fat hen, Marshmallow and Pigweed .		P		-
Chlorthal-Dimethyl (Dacthal)	D**		Registered in beans for control of various grass and broadleaf weeds including, Fat hen, Blackberry nightshade, Amaranthus and Pigweed . Spray at transplanting.		P		-
Glufosinate- ammonium (Basta) BASF	N**		Registered in Green beans, Tomatoes & tropical & subtropical fruits for control of a range of grass and broadleaf weeds including Amaranthus, Fat hen, Pigweed and Three-cornered jack, Broadleaf weeds & grasses. [Max 1 application per season]		P		R3
S-Metolachlor (Dual Gold) Syngenta	K**		Registered in Brassica vegetables for control of various grass weeds including ryegrass and broadleaf weeds including Blackberry nightshade, Chickweed, fat hen, Pigweed , Stinging nettle & Wireweed. Spray at transplanting.		P		-
Norflurazon (Zoliar) Agnova	F**	Asparagus, citrus, grapes, nuts, stone & pome fruits / Pre-emergent	Registered in asparagus, citrus, grapes, nuts, stone & pome fruits for control of grass and broadleaf weeds including Annual ryegrass, Cape weed, Chickweed, Fat hen, Milk thistle, Pigweed and Wireweed. [Max. 2 applications per year; re-treatment interval not specified]		P		

Active Ingredient (Trade Name)	Chemical Group	Crop/ Situation	Comment / Use / Weed	WHP (days)	Availability	States	Regulatory Risk
Oxyfluorfen (Goal)	G**	Broccoli, cabbage & cauliflower / Pre - emergent /	Registered in broccoli, cabbage & cauliflower for pre-emergent control of several broadleaf and grass weeds including Blackberry nightshade, Fat hen, Pigweed and Marshmallow. Apply 4-7 days prior to transplanting. Irrigation or rainfall is essential for activation of this herbicide		P		-
Fat Hen (<i>Chenopodium album</i>)							
Priority: Moderate							
Fat Hen was ranked as a moderate priority in VIC, QLD, NSW, WA & SA. Herbicide control can be difficult and targeting weeds at early growth stages is critical.							
1,3-Dichloropropene + Chloropicrin (Telone C-35)	8B	Vegetables / Soil fumigant	Registered in various crops including vegetables for control of plant parasitic nematodes, symphyllans, wireworms, soil borne diseases and suppression of weeds . Do not plant for 7 d after soil treatment.	NR	A	ALL (Restricted use TAS, VIC & SA)	-
Glyphosate (Roundup)	M**	General seed bed preparation	General weeds as a pre-crop spray.	NR	A	ALL	R3
Paraquat + Diquat (SpraySeed)	L**	General seed bed preparation	General weeds as a pre-crop spray.	NR	A	ALL	R3
Clomazone	Q**	Green beans / Pre-emergent residual	Registered in beans for control of several broadleaf weeds including Fat Hen . [Max 3 applications per crop; re-treatment interval not specified]		P		-
Dimethenamid-P (Outlook) BASF	K**	Green beans/ residual / Pre-emergent	Registered in beans for control of several broadleaf weeds including Fat Hen .		P		-
Norflurazon (Zoliar) Agnova	F**	Asparagus, citrus, grapes, nuts, stone & pome fruits / Pre-emergent	Registered in asparagus, citrus, grapes, nuts, stone & pome fruits for control of grass and broadleaf weeds including Annual ryegrass, Cape weed, Chickweed, Fat Hen , Milk thistle, Pigweed and Wireweed. [Max. 2 applications per year; re-treatment interval not specified]		P		-

Active Ingredient (Trade Name)	Chemical Group	Crop/ Situation	Comment / Use / Weed	WHP (days)	Availability	States	Regulatory Risk
Marshmallow (<i>Malva parviflora</i>)							
Priority: Moderate							
Marshmallow was ranked as a moderate priority in VIC, QLD, NSW, WA & SA. Adapted to a wide variety of environments and highly competitive weed. Control with knockdown herbicides can be unreliable.							
1,3-Dichloropropene + Chloropicrin (Telone C-35)	8B	Vegetables / Soil fumigant	Registered in various crops including vegetables for control of plant parasitic Nematodes, Symphylans, Wireworms, soil borne diseases and suppression of weeds. Do not plant for 7 d after soil treatment.	NR	A	ALL (Restrict use TAS, VIC & SA)	-
Glyphosate (Roundup)	M**	General seed bed preparation	General weeds as a pre-crop spray for control of several broadleaf weeds including Marshmallow .	NR	A	ALL	R3
Paraquat + Diquat (SpraySeed)	L**	General seed bed preparation	General weeds as a pre-crop spray. for control of several broadleaf weeds including Marshmallow .	NR	A	ALL	R3
Flumetsulam (Broadstrike)	B***		Registered in chickpeas for control of several broadleaf weeds including Marshmallow .		P		-
Oxyfluorfen (Goal)	G**		Registered in broccoli, cabbage & cauliflower for pre-emergent control of several broadleaf and grass weeds including Blackberry Nightshade, Fat hen, Pig weed and Marshmallow .		P		-
Chloridazon (Pyramin) BASF	C**		Registered in silverbeet & baby spinach leaf (VIC & TAS) for control of a range of weeds including, Cape Weed, Chickweed, Dead Nettle, Dwarf Nettle, Fat Hen, Marshmallow and Pigweed.		P		-
Fleabane (<i>Conyza</i> spp.)							
Priority: Moderate							
Fleabane was ranked as a moderate priority in QLD & SA. A problem weed because it seeds and grows prolifically and is difficult to control, particularly with knockdown herbicides.							
1,3-Dichloropropene + Chloropicrin (Telone C-35)	8B	Vegetables / Soil fumigant	Registered in various crops including vegetables for control of plant parasitic Nematodes, Symphylans, Wireworms, soil borne diseases and suppression of weeds. Do not plant for 7 d after soil treatment.	NR	A	ALL (Restrict use TAS, VIC & SA)	-
Glyphosate (Roundup)	M**	General seed bed preparation	General weeds as a pre-crop spray.	NR	A	ALL	R3

Active Ingredient (Trade Name)	Chemical Group	Crop/ Situation	Comment / Use / Weed	WHP (days)	Availability	States	Regulatory Risk
Paraquat + Diquat (SpraySeed)	L**	General seed bed preparation	General weeds as a pre-crop spray.	NR	A	ALL	R3
Nutgrass (<i>Cyperus rotundus</i>)							
Priority: Moderate							
Nutgrass was ranked as a moderate priority in QLD & NSW. Prefers damp, water-logged soils but can survive for years underground during dry times. Herbicide options are limited and unreliable. Improve soil drainage if possible.							
Glyphosate (Roundup)	M**	General seed bed preparation	General weeds as a pre-crop spray.	NR	A	ALL	R3
Norflurazon (Zoliar) Agnova	F**		Registered in asparagus, citrus, grapes, nuts, stone and pome fruits for control of grass and broadleaf weeds including Nut Grass .		P		-
Grass Weeds (various)							
Priority: Unknown							
Grass weeds were not ranked in the recent survey. However, there are permits in place for their control. Eggplants are usually transplanted, in field and in low tech protected cropping systems where soil is normally fumigated to prevent weeds.							
Clethodim (Select) PER82459	A***	Eggplant / Post-emergent	Permitted for use in eggplant for control various grass weeds. Used to spot spray grass weeds such as Couch Grass post-emergent. Reported to control winter grass, but not resistant Ryegrass.	28	A	ALL	R3
Fluazifop-P (Fusilade) PER82556	A***	Eggplant / Post-emergent	Permitted for use in eggplant for control of various grass weeds. [Max. 1 application per crop]	28	A	ALL (excl. VIC)	-
Trifluralin	D**	Eggplant & Peppers / Residual pre-emergent	Registered for use in eggplant & pepper for control of grass and broadleaf weeds.	NR	A	ALL	-

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/Details/F2020C00713
APVMA Permit search	https://productsearch.apvma.gov.au/permits
APVMA Product search	https://productsearch.apvma.gov.au/products
AUSVEG	https://ausveg.com.au
Codex MRL database	http://www.fao.org/fao-who-codexalimentarius/codex-texts/dbs/pestres/en/
Cotton Pest Management Guide 2018-19	https://www.cottoninfo.com.au/publications/cotton-pest-management-guide
CropLife Australia (resistance management)	https://www.croplife.org.au/resources/programs/resistance-management/
Growcom – Infopest Database	www.infopest.com.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, nematocides, 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 eggplant
- Appendix 2. Products available for control of insects and mites in eggplant
- Appendix 3. Products available for weed control in eggplant
- Appendix 4. Current permits for use in eggplant
- Appendix 5. Eggplant Maximum Residue Limits (MRLs)
- Appendix 6. Eggplant Agrichemical Regulatory Risk Assessment

Appendix 1. Products available for disease control in eggplant

Active Ingredient (Trade Name)	Chem. group	Situation	Diseases / Comments	States/ Territories	WHP Days	Regulatory Risk
<i>Bacillus amyloquefaciens</i> (Serenade Opti) Bayer PER88032	BM 02	Eggplant (field & protected)	Alternaria Early Blight, Botrytis Grey Mould, Powdery Mildew & Suppression of Bacterial Spot (<i>Xanthomonas</i> spp.)	ALL (excl. VIC)	NR	-
Boscalid (Filan) BASF	7	Eggplant (field)	Early Blight (Alternaria)	ALL	14	-
Bupirimate (Nimrod)	8	Eggplant (field)	Powdery Mildew	ALL	1	-
Chloropicrin (Agrocelhone NE Soil Fumigant)	8	Vegetables / General fumigant	Soil borne fungi	ALL	NR	-
1,3-Dichloropropene + Chloropicrin (Telone C-35)	8B	General fumigant	Plant Parasitic Nematodes, Symphylans, Wireworms, Soil Borne Diseases (Including Fusarium and Verticillium Wilts, Rhizoctonia, Pythium) and suppression of weeds.	ALL (Restricted use TAS, VIC & SA)	NR	-
Chlorothalonil (Bravo) PER82895	M5	Eggplant (field)	Botrytis Grey Mould, Alternaria, Downy Mildew, And Grey Leaf Spot	ALL	3	R3
Copper PER14038	M1	Eggplant (field & protected)	Bacterial Spot, Speck and Canker	ALL (excl. VIC)	1	-
Dazomet (Basamid, Cerlong)	8F	Vegetables	Soil fungi, nematodes, soil insects and weeds	ALL	NR	-
Hydrogen Peroxide + Peroxy Acetic Acid (Peratec Plus)	M	Eggplant (field & protected)	Powdery Mildew	ALL	1	-
Iprodione PER80910	2	Eggplant (field)	Botrytis Grey Mould	ALL (excl. VIC)	7 NG	R3

Active Ingredient (Trade Name)	Chem. group	Situation	Diseases / Comments	States/ Territories	WHP Days	Regulatory Risk
Mancozeb PER14593	M3	Eggplant, Thai round eggplant, and pea eggplant (field)	Downy Mildew, Anthracnose, and Alternaria	ALL (excl. VIC)	G:14	R2
Metham Sodium	-	General pre-plant soil fumigation	Nematodes, fungi, and weed seeds.	ALL	NR	-
Metiram (Polyram) BASF	M3	Eggplant (field)	Alternaria Leaf Spot and Cercospora Leaf Spot	ALL	14	R2
Metiram + Pyraclostrobin (Aero) BASF	M3 + 11	Eggplant (field)	Early Blight (Alternaria)	ALL	28	R2
Penthiopyrad (Fontelis) Corteva	7	Eggplants (field)	Early Blight, Grey mould, and Powdery Mildew	ALL	NR	-
Phosphorous acid PER81408	33	Eggplant (field & protected)	Phytophthora	ALL (excl. VIC)	1	-
Sulphur	M2	Vegetables	Powdery Mildew, Rust, Tomato Russet Mite, Bean Spider Mite, and Two-Spotted Mite	Variable refer to label	NR	-
Triadimenol (Bayfidan) Bayer	3	Eggplants (field)	Powdery Mildew	ALL	1	R3
Zineb	M3	Eggplants (field)	Early Blight and Late Blight	ALL	7	R2
Zineb PER14839	M3	Eggplant (field)	Anthracnose	ALL (excl. VIC)	7	R2

Appendix 2. Products available for control of insects and mites in eggplant

Active Ingredient (Trade Name)	Chem. group	Situation	Pests / Comments	States/ Territories	WHP	Regulatory Risk
Abamectin <i>*Permit to label project (previous permit PER10948 & PER14722 Version 2 surrendered)</i>	6	Eggplant (field & protected)	Two-Spotted Mite, Tomato Red Spider Mite, Tomato Russet Mite, Tomato Potato Psyllid & Tobacco Leafminer (Potato Moth)	ALL	3	-
Abamectin PER84229 <i>*Permit to label project (permit to be surrendered)</i>	6	Eggplant (field & protected)	Tomato Potato Psyllid	ALL	3 NG	-
Abamectin PER81876	6	Fruiting Vegetables (field & protected)	Vegetable Leafminer (<i>Liriomyza sativa</i>) Serpentine Leafminer (<i>Liriomyza huidobrensis</i>)	ALL (excl. VIC)	7 NG	-
Afidopyropen (Versys) BASF	9D	Fruiting Vegetables (field & protected)	Green Peach Aphid, Cabbage Aphid, Currant Lettuce Aphid, Cotton/Melon Aphid, Corn aphid & suppression of Silverleaf Whitefly.	ALL	1	-
Afidopyropen (Versys) BASF PER87852 <i>*Use now registered in protected cropping and permit to be surrendered</i>	9D	Eggplant, cucumber & capsicum & (protected)	Green Peach Aphid, Melon Aphid; suppression of Silverleaf Whitefly.	ALL	3	-
Alpha-Cypermethrin PER80099	3A	Fruiting vegetables (excluding cucurbits)	Queensland Fruit Fly and Mediterranean Fruit Fly	ALL (excl. VIC)	1	-
<i>Bacillus thuringiensis subsp. kurstaki</i> (DiPel)	11A	Vegetables	Armyworm, Cotton Bollworm, Native Budworm, Cabbage Moth, Cabbage White Butterfly, Green Looper, Lightbrown Apple Moth, Pear Looper, Soybean Looper, Vine Moth, and Tobacco Looper	ALL	NR	-
<i>Bacillus thuringiensis</i> (Vertobac) Sumitomo PER14694	11A	Eggplant (protected cropping)	Fungus Gnats	ALL (excl. VIC)	NR	-

Active Ingredient (Trade Name)	Chem. group	Situation	Pests / Comments	States/Territories	WHP	Regulatory Risk
<i>Beauveria bassiana</i> (Velifer) BASF	UN	Protected vegetables and ornamentals	Suppression of various pests including: Western Flower Thrips, Onion Thrips, Greenhouse Whitefly, Silverleaf Whitefly, Sweet Potato Whitefly, Green Peach Aphid & Two-Spotted Spider Mites.	ALL	NR	-
Bifenazate (Acramite) UPL	20D	Eggplant (field & protected)	Two-Spotted Mite and Bryobia Mite	ALL	1	-
Bifenazate (Acramite) UPL PER82341	20D	Eggplant (field & protected)	Red Tomato Spider Mite	ALL (excl. VIC)	1	-
Bifenthrin (Astral) Nufarm *Permit to label (PER81196 surrendered)	3A	Eggplant (field & protected)	Silverleaf Whitefly (<i>Bemisia tabaci</i>), Two Spotted Mite and Greenhouse Whitefly (<i>Trialeurodes vaporariorum</i>)	ALL	1	R3
Bifenthrin (Talstar) PER84229	3A	Eggplant (field & protected)	Tomato Potato Psyllid	ALL	1 NG	R3
Buprofezin (Applaud) Corteva PER82467	16	Eggplant (field and protected)	Greenhouse Whitefly, Silverleaf Whitefly, Sweet Potato Whitefly and Whitefly generally	ALL (excl. VIC)	3	-
Chlorantraniliprole (Coragen) FMC	28	Eggplant (field & protected)	Cotton Bollworm, Native Budworm, Tomato Leaf Miner, and Eggfruit Caterpillar.	ALL	3	-
Chlorantraniliprole (Coragen) FMC PER89259	28	Fruiting Vegetables including cucurbits (field & protected)	Fall Armyworm (<i>Spodoptera frugiperda</i>)	ALL (excl. VIC)	1	-

Active Ingredient (Trade Name)	Chem. group	Situation	Pests / Comments	States/ Territories	WHP	Regulatory Risk
Chlorantraniliprole + Thiamethoxam (Durivo) Syngenta	28+4A	Eggplant (Applied to seedling tray or as a plant hole drench)	Cotton Bollworm, Native Budworm, Cluster Caterpillar, Green Peach Aphid, Silverleaf Whitefly, Greenhouse Whitefly, Western Flower Thrips, and Tomato Thrips	ALL	NR	R2
Chlorantraniliprole + Thiamethoxam (Durivo) PER89280	28+4A	Fruiting Vegetables excluding cucurbits	Fall Armyworm (<i>Spodoptera frugiperda</i>)	ALL (excl. VIC)	42	R2
Chlorantraniliprole + Thiamethoxam (Durivo) PER87051	28+4A	Cucurbits & fruiting vegetables including eggplant (field & protected)	Various specified pests (including Corn Earworm, Native Budworm, Cabbage Aphid, Green Peach Aphid, Silverleaf Whitefly – all biotypes, Greenhouse Whitefly, Western Flower Thrips, Onion Thrips)	QLD	35 NG	R2
Chlorpyrifos (Lorsban)	1B	Eggplant (field & protected)	Wingless Grasshopper, Cutworm, Field Crickets, Mole Crickets, and Vegetable Weevil	Variable refer to label	Variable refer to label	R1
Clothianidin (Samurai) PER80100	4A	Eggplant (field & protected)	Queensland Fruit Fly and Mediterranean Fruit Fly	ALL	7 NG	R2
Cyantraniliprole (Benevia) FMC	28	Eggplant (field)	Silverleaf Whitefly, Cotton Bollworm, Native Budworm, Tomato Leaf Miner, Green Peach Aphid. Suppression of Tomato Thrip and Western Flower Thrip	ALL	1	-
Cyantraniliprole (Benevia) PER84805	28	Eggplant (field)	Tomato Potato Psyllid	ALL (excl. VIC)	1	-
Cyantraniliprole (Benevia) FMC PER90387	28	Fruiting Vegetables	Vegetable Leaf Miner (<i>Liriomyza sativae</i>) Pea Leaf Miner / Serpentine Leaf Miner (<i>Liriomyza huidobrensis</i>) American Serpentine Leaf Miner (<i>Liriomyza trifolii</i>)	ALL (excl. VIC)	1 NG	-

Active Ingredient (Trade Name)	Chem. group	Situation	Pests / Comments	States/ Territories	WHP	Regulatory Risk
Cyromazine (Diptex 150 WP) PER81867	17	Fruiting Vegetables (field & protected)	Vegetable Leafminer (<i>Liriomyza sativa</i>) Serpentine Leafminer (<i>Liriomyza huidobrensis</i>)	ALL	7 NG	-
Diazinon	1B	Eggplant (field)	Cutworms	QLD, NSW, VIC, SA & WA	14	R3
Dimethoate	1B	Eggplant (field & protected)	Aphids, Jassids, Mites, Leafhoppers, Green Vegetable Bug, Thrips and Wingless Grasshopper	ALL	14	R1
Dimethoate PER12506	1B	Eggplant (field & protected)	Queensland Fruit Fly and Mediterranean Fruit Fly	ALL	14	R1
Emamectin (Proclaim Opti) Syngenta *Permit to label project PER81914 surrendered	6	Fruiting Vegetables (field & protected)	Cluster Caterpillar Heliothis	ALL	3 NG	-
Emamectin (Proclaim Opti) Syngenta PER89263	6	Fruiting Vegetables (field & protected)	Fall Armyworm (<i>Spodoptera frugiperda</i>)	ALL (excl. VIC)	3	-
Emulsifiable Botanical Oil (Eco-Oil)	-	Vegetables (field & protected)	Greenhouse Whitefly	ALL	NR	-
Flubendiamide (Belt) Bayer	28	Eggplant (field and protected)	<i>Helicoverpa</i> spp. and Tomato Leafminer	ALL	1	-
Fluensulfone (Nimitz) Adama	-	Eggplant (transplanted)	Root-Knot Nematode	QLD	NR NG	-
Garlic + Chilli + Pyrethrins + Piperonyl Butoxide	3A	Vegetables (field)	Ants, Aphids, Caterpillars, Earwigs, Whitefly, Thrips and Leafhoppers. Suitable for organic growers.	ALL	1	-
Nuclear Polyhedrosis Virus (Vivus) AgBiTech	31	Eggplant (field & protected)	Cotton Bollworm, Corn Earworm, Tobacco Budworm and Native Budworm	ALL	NR	-

Active Ingredient (Trade Name)	Chem. group	Situation	Pests / Comments	States/ Territories	WHP	Regulatory Risk
Hexythiazox (Calibre) PER14765	10A	Eggplant (field and protected)	Tomato Russet Mite, Broad Mite, Two-Spotted Mite, and Tomato Red Mite	ALL	3	-
Imidacloprid (Confidor) Bayer	4A	Eggplant (field)	Melon Thrips and Green Peach Aphid	ALL	NR	R2
Indoxacarb (Avatar) FMC	22A	Eggplant (field & protected)	Cotton Bollworm, Native Budworm, and Potato Moth (Tomato Leaf Miner)	ALL	3	R3
Indoxocarb (Avatar) PER89278	22A	Eggplant (field & protected)	Fall Armyworm (<i>Spodoptera frugiperda</i>)	ALL (excl. VIC)	7	R3
Indoxacarb + Novaluron (Plemax) Adama	22A+15	Contact & stomach	<i>Helicoverpa</i> spp. Tomato Leaf Miner	ALL	3 NG	R3
Methomyl PER82428	1A	Brinjal (Indian eggplant) and eggplant (field)	<i>Helicoverpa</i> spp., Cucumber Moth, Cluster Caterpillar, Loopers, Webworm, Rutherglen Bug, Thrips including Western Flower Thrips	ALL	3	R2
Methomyl PER84229	1A	Eggplant (field)	Tomato Potato Psyllid	ALL	3 NG	R2
Methomyl PER89293	1A	Fruiting Vegetables (field grown only)	Fall Armyworm (<i>Spodoptera frugiperda</i>)	ALL	14	R2
Methoxyfenozide (Prodigy) Corteva	18	Eggplant (field)	Native Budworm, Tomato Grub and Cluster Caterpillar	ALL	NR	-
Milbemectin (Milbeknock)	6	Eggplant (field & protected)	Two Spotted Mites	ALL	1	-
Paraffinic Oil	UN	Eggplant (field)	Silverleaf Whitefly	QLD	NR	-
Petroleum Oil PER12221	UN	Eggplant (field)	Aphids, Green Mirid, Green Vegetable Bug, Grey Cluster Bug, Leafhoppers, Mites, Rutherglen Bug, Thrips, Silverleaf Whitefly and Greenhouse Whitefly	ALL (excl. VIC)	1	-

Active Ingredient (Trade Name)	Chem. group	Situation	Pests / Comments	States/Territories	WHP	Regulatory Risk
Phorate (Thimet) PER8930	1B	Eggplant (field)	Aphids, Jassids, Mites, Thrips, and Onion Maggot	ALL	70	R3
Pirimicarb (Aphidex 800) *Permit to label project (PER13351 surrendered)	1A	Eggplant (field)	Aphids	ALL	2	R3
Potassium Salts of Fatty Acids (Natrasoap)	-	Vegetables (field & protected)	Aphids, Thrips, Mealybug, Two Spotted Mites, Spider Mite, and Whitefly	ALL	Nil	-
Propargite (Betamite)	12C	Vegetables (field & protected)	Spider Mite (QLD and WA only) and Two Spotted Mite	ALL	7	R3
Pymetrozine (Chess) Syngenta *Permit to label project (PER14892 surrendered)	9B	Eggplant (field & protected)	Potato Aphid, Green Peach Aphid, Silverleaf Whitefly and Greenhouse Whitefly	ALL	3	R3
Pyrethrins (Pyganic)	3A	Eggplant (field)	Rutherglen Bug, Fruit Fly and Spiders.	ALL	NR	-
Pyrethrins + Piperonyl Butoxide	3A	Vegetables (field)	Ants, Aphids, Thrips, Caterpillars, Leaf Hoppers, and Whitefly	ALL	1	-
Pyriproxyfen (Admiral) Sumitomo	7C	Eggplant (field & protected)	Silverleaf Whitefly Biotype B and Greenhouse Whitefly	ALL	1	-
Spinetoram (Success Neo) Corteva	5	Eggplant (field & protected)	Potato Moth, <i>Helicoverpa</i> spp., and Western Flower Thrips	ALL	1	-
Spinetoram (Success Neo) Corteva PER84757	5	Eggplants (field)	Tomato Potato Psyllid	ALL (excl. VIC)	1	-

Active Ingredient (Trade Name)	Chem. group	Situation	Pests / Comments	States/ Territories	WHP	Regulatory Risk
Spinetoram (Success Neo) Corteva PER14186	5	Eggplant or Aubergine (field & protected)	Melon Thrips	ALL (excl. VIC)	1	-
Spinetoram (Success Neo) Corteva PER89241	5	Fruiting vegetables (field & protected)	Fall Armyworm (<i>Spodoptera frugiperda</i>)	ALL (excl. VIC)	1	-
Spinosad (Naturalure) Corteva	5	Fruit trees and vegetables (field)	Fruit Flies	ALL	NR	-
Spinosad (Entrust Organic) Corteva	5	Fruiting vegetables including eggplant & sweet corn (field)	Potato Moth, Helicoverpa & Western Flower Thrips	ALL	3 G:14	-
Spinosad (Entrust Organic) Corteva PER89870	5	Fruiting vegetables (Protected)	Fall Armyworm (<i>Spodoptera frugiperda</i>)	ALL	3 G:14	-
Spinosad (Entrust Organic) Corteva PER90928	5	Fruiting Vegetables (field & protected)	Vegetable Leaf Miner (<i>Liriomyza sativae</i>) Pea Leaf Miner / Serpentine Leaf Miner (<i>Liriomyza huidobrensis</i>) American Serpentine Leaf Miner (<i>Liriomyza trifolii</i>)	ALL (excl. VIC)	3 G:14	-
Spirotetramat (Movento) Bayer	23	Eggplant (field & protected)	Green Peach Aphid, Silverleaf Whitefly, and Western Flower Thrips	ALL	1	-
Spirotetramat (Movento) Bayer PER84245	23	Eggplant (field and protected)	Tomato Potato Psyllid	ALL	1	-
Spirotetramat (Movento) PER88640	23	Eggplant (field and protected)	Suppression of Liriomyza Leafminers	ALL (excl. VIC)	1	-

Active Ingredient (Trade Name)	Chem. group	Situation	Pests / Comments	States/ Territories	WHP	Regulatory Risk
Sulfoxaflor (Transform) Corteva	4C	Eggplant (field)	Green Peach Aphid and Greenhouse Whitefly, and suppression of Rutherglen Bug and Tomato Potato Psyllid	ALL	1	-
Sulphur	M2	Vegetables (field & protected)	Powdery Mildew, Rust, Tomato Russet Mite, Bean Spider Mite, and Two-Spotted Mite	Variable refer to label	NR	-
Trichlorfon (Lepidex)	1B	Vegetables (field & protected)	Cabbage White Butterfly, Cabbage Moth, Green Vegetable Bug, and Rutherglen Bug	ALL	2	R2
Trichlorfon (Lepidex) PER80717	1B	Eggplant, Thai eggplant, and pepino (field & protected)	Queensland Fruit Fly and Mediterranean Fruit Fly	ALL (excl. VIC)	2 NG	R2

Appendix 3. Products available for weed control in eggplant

Active ingredient (Trade Name)	Chem Group	Situation	Comment / Use / Weed	WHP (days)	States/ Territories	Regulatory Risk
Clethodim (Select) PER82459	A***	Eggplant / Post-emergent	Various grass weeds	28	ALL	R3
1,3-Dichloropropene + Chloropicrin (Telone C-35)	8B	Vegetables	Plant Parasitic Nematodes, Symphylans, Wireworms, soil borne diseases and suppression of weeds	NR	ALL	-
Fluazifop-P (Fusilade) Syngenta PER82556	A***	Eggplant	Various grass weeds	28	ALL (excl. VIC)	-
Glyphosate (Roundup)	M**	General seed bed preparation	General weeds as a pre-crop spray	NR	ALL	R3
Paraquat + Diquat (SpraySeed)	L**	General seed bed preparation	General weeds as a pre-crop spray	NR	ALL	R3
Trifluralin	D**	Eggplant / Residual pre-emergent	Various broadleaf and grass weeds	NR	ALL	-

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

Appendix 4. Current permits for use in eggplant

Permit No	Description	Issued Date	Expiry Date	Permit Holder
PER81876 Version 4	Abamectin / Fruiting vegetables, including cucurbits (except sweet corn & mushrooms), Leafy vegetables (except lettuce), Legume vegetables, Root & Tuber Vegetables, Bulb onions, cabbage, Celery, Rhubarb & Bulb Vegetables including leeks & spring onions) / Leaf miners (<i>Liriomyza</i> spp.)	24-Jun-16	30-Apr-24	Hort Innovation
PER87852	Afidopyropen (Versys) / Cucumber, eggplant & capsicum / Green peach aphid, Melon aphid & suppression of Silverleaf whitefly (protected) <i>*Use now registered in protected cropping and permit to be surrendered</i>	29-May-20	31-May-23	Hort Innovation
PER80099 Version 3	Alpha-Cypermethrin / Fruiting vegetables (excluding cucurbits) / Queensland fruit fly and Mediterranean fruit fly (field)	26-Feb-15	31-Mar-25	Hort Innovation
PER88032	<i>Bacillus amyloquefaciens</i> (Serenade Opti) / Eggplant / Early blight, Botrytis grey mould, Powdery mildew, Bacterial spot (field & protected)	14-Oct-19	31-Oct-22	Hort Innovation
PER14694 Version 3	<i>Bacillus thuringiensis</i> (VectoBac WG Biological Larvicide) / Protected cropping - capsicum, cucumber, eggplant, herbs, & lettuce / Fungus gnats	01-Jun-14	30-Jun-24	Hort Innovation
PER82341 Version 3	Bifenazate (Acramite) / Cucumber, Peppers (sweet & chilli), Zucchini, Eggplant, Sin qua, Bitter melon, Tomato & Snake bean / Two Spotted Mite (field & protected)	29-Mar-16	30-Apr-25	Hort Innovation
PER82467 Version 3	Buprofezin (Applaud) / Greenhouse whitefly / Vegetables (field & protected)	07-Jul-17	30-Jun-25	Hort Innovation
PER89259	Chlorantraniliprole (Coragen) / Various, including fruiting vegetables / Fall Armyworm (field)	06-Mar-20	31-Mar-23	Hort Innovation
PER89280	Chlorantraniliprole + Thiamethoxam (Durivo) / Brassicas, Leafy & Fruiting vegetables / Fall armyworm (field)	12-Mar-20	31-Mar-23	Hort Innovation

Permit No	Description	Issued Date	Expiry Date	Permit Holder
PER87051	Chlorantraniliprole + Thiamethoxam (Durivo) / Cucurbits & Fruiting vegetables (chemigation) / Various Pests (QLD – within Wide Bay region only)	25-Feb-19	28-Feb-24	Bundaberg Fruit & Vegetable Growers
PER82895 Version 2	Chlorothalonil (Bravo) / parsley / Downy mildew / Botrytis / Alternaria / Cercospora (field)	04-Aug-17	31-Aug-25	Hort Innovation
PER82459	Clethodim (Select) / Broccoli, Brussels Sprouts, Cauliflower, Radish, Carrots, Parsnips, Eggplant, Chilli Pepper, Paprika, Silverbeet, Spinach, Leeks, Spring Onions, Shallots, Rhubarb, Peas (fresh & processing) Field & Protected Crops: Brassica Leafy Vegetables, Chicory, Endive, Radicchio, Rocket. / Various grass weeds	19-Apr-17	30-Sep-21	Hort Innovation
PER80100 Version 3	Clothianidin (Samurai) / Fruiting vegetables (excluding cucurbits) (field and protected) / Mediterranean fruit fly and Queensland fruit fly	10-Nov-15	30-Sep-23	Hort Innovation
PER14038 Version 2	Copper / endive, chicory, brassica leafy vegetables, eggplant, snow peas, sugar snap peas, paprika, chilli, horseradish / Various Diseases (field & protected)	01-Apr-13	30-Sep-23	Hort Innovation
PER84805	Cyantraniliprole (Benevia) / Eggplant / Tomato potato psyllid (field)	06-Dec-17	31-Dec-22	Hort Innovation
PER90387	Cyantraniliprole (Benevia) / Fruiting vegetables (all) / Leaf miners (Liriomyza spp.) including: Vegetable leaf miner (Liriomyza sativae), Pea leaf miner/Serpentine leaf miner (Liriomyza huidobrensis), American serpentine leaf miner (Liriomyza trifolii)	3-Dec-20	31-Dec-23	Hort Innovation
PER81867 Version 2	Cyromazine (Diptex 150 WP) / Various including Fruiting Vegetables / Liriomyza species, including: Vegetable Leafminer (Liriomyza sativa), Serpentine Leafminer (Liriomyza huidobrensis)	2-Dec-19	30-Nov-23	Hort Innovation

Permit No	Description	Issued Date	Expiry Date	Permit Holder
PER12506 Version 7	Dimethoate / Eggplant / Queensland fruit fly & Mediterranean fruit fly (field)	30-Jan-13	31-Aug-23	Hort Innovation
PER89263	Emamectin (Proclaim Opti) / Various, including fruiting vegetables crops / Fall Armyworm (field & protected)	10-Mar-20	31-Mar-23	Hort Innovation
PER82556	Fluazifop-P (Fusilade) / Eggplant, Shallots, Spring onions, Leeks, Garlic, Parsnips & Sweet potato / Various grass weeds	16-Apr-14	31-Jan-23	Hort Innovation
PER14765 Version 4	Hexythiazox (Calibre) / Cucurbit vegetables, Fruiting vegetables, potatoes, snow and sugar snap peas / Tomato spider mite, Two-spotted mite, Broad mite, Tomato russet mite (field & protected)	21-Feb-15	30-Sep-23	Hort Innovation
PER89278	Indoxacarb (Avatar) / Various, including eggplant / Fall Armyworm (field)	13-Mar-20	31-Mar-23	Hort Innovation
PER80910 Version 3	Iprodione (Rovral) / Eggplant / Botrytis grey mould (field)	01-Aug-15	31-Jul-25	Hort Innovation
PER14593 Version 3	Mancozeb / Eggplant, Thai round eggplant, and pea eggplant / Downy mildew, Anthracnose, and Alternaria (field)	10-Jul-14	30-Jun-25	Hort Innovation
PER82428 Version 4	Methomyl (Lannate) / Various, including fruiting vegetables / Helicoverpa spp, cabbage, cucumber moth, cluster caterpillar, looper, webworm, rutherglen bug, thrips including Western Flower Tthrips (field)	22-Apr-16	31-Mar-24	Hort Innovation
PER89293	Methomyl (Lannate) / Various, including eggplant as per Label / Fall Armyworm (field)	10-Apr-20	30-Apr-23	Hort Innovation
PER12221 Version 4	Petroleum oil / alliums, brassica vegetables, celery, cucurbits, eggplant, leafy vegetables, lettuce, okra, peppers, snow & sugar snap peas, tomatoes, Rocket, parsley / Specified insect pests (field & protected)	29-Jun-12	30-Nov-22	Hort Innovation

Permit No	Description	Issued Date	Expiry Date	Permit Holder
PER8930 Version 6	Phorate (Thimet) / Eggplant, peppers, shallots & spring onions / Aphids, Jassids, Mites, Thrips & Onion maggot (field)	14-Aug-11	30-Nov-24	Hort Innovation
PER81408 Version 3	Phosphorous acid (Agri-Fos) / Eggplant / Phytophthora soil fungus (field & protected)	07-Sep-15	31-Jul-25	Hort Innovation
PER84757 Version 2	Spinetoram (Success Neo) / Eggplant / Tomato potato psyllid (field)	28-Nov-17	31-Aug-25	Hort Innovation
PER14186 Version 3	Spinetoram (Success Neo) / Eggplant / Melon Thrips (field)	30-Oct-13	30-Sep-21	Hort Innovation
PER89241	Spinetoram (Success Neo and Delegate Insecticide) / Various, including fruiting vegetables / Fall Armyworm (field & protected)	06-Mar-20	31-Mar-23	Hort Innovation
PER89870	Spinosad (Entrust Organic) / Various, including fruiting vegetables / Fall Armyworm (protected)	21-Jul-20	31-Jul-23	Hort Innovation
PER90928	Spinosad (Entrust Organic) / Various, including Fruiting Vegetables / Leafminers (field & protected)	23-Apr-21	30-Apr-24	Hort Innovation
PER84245 Version 2	Spirotetramat (Movento 240 SC) / potato, sweet potato, tomato, capsicum, chilli, peppers, eggplant / Tomato potato psyllid (field & protected)	07-Apr-17	28-Feb-25	NSW DPI
PER88640	Spirotetramat (Movento 240 SC) / Snow Peas, Sugar Snap Peas, Lettuce (Head lettuce and Leafy lettuce), Parsley, Green Beans, Celery, Rhubarb, Eggplant, Capsicums, Chilies & Tomatoes / Liriomyza leafminers (<i>Liriomyza</i> spp.) (field & protected)	18-May-20	31-May-23	Hort Innovation
PER84743	Sulfoxaflor (Transform) / fruiting vegetables / Tomato potato psyllid (field)	24-Oct-17	31-Oct-22	Hort Innovation
PER80717 Version 4	Trichlorfon (Lepidex) / Eggplant, Thai eggplant, Pepino & Cape gooseberry / Fruit fly (field)	28-Oct-15	31-Aug-25	Hort Innovation

Permit No	Description	Issued Date	Expiry Date	Permit Holder
PER14839 Version 3	Zineb / Eggplant, Spinach & Silverbeet / Anthracnose (<i>Colletotrichum</i> spp.) (field)	01-Aug-14	30-Sep-24	Hort Innovation

Appendix 5. Eggplant Maximum Residue Limits (MRLs)

CODEX commodity groupings of Fruiting vegetables and subgroups:

VO 0050	Fruiting vegetables other than cucurbits
VO 0440	Eggplant
-	Vegetables

Note: Major export markets for eggplants include Hong Kong, New Zealand, Singapore, PNG and Malaysia. Available information indicates that in the absence specific limits in legislation that most countries defer to Codex, followed by EU MRL standards or applies 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	Description	APVMA MRL mg/kg	Codex MRL mg/kg
Abamectin	VO0440	Eggplant	-	0.05
	VO0050	Fruiting vegetables other than cucurbits	T0.1	-
Acetamiprid	VO0050	Fruiting vegetables other than cucurbits	-	0.2
Afidopyropen	VO0050	Fruiting vegetables other than cucurbits	0.2	-
Ametoctradin	VO0050	Fruiting vegetables other than cucurbits	-	1.5
Azoxystrobin	VO0050	Fruiting vegetables other than cucurbits	-	3
	VO0440	Eggplant	T2	-
Bifenthrin	VO0440	Eggplant	-	0.3
	VO0050	Fruiting vegetables other than cucurbits	0.5	-
Bifenazate	VO0050	Fruiting vegetables other than cucurbits	1	-
Bifenthrin	VO0050	Fruiting vegetables other than cucurbits	0.5	-
Boscalid	VO0050	Fruiting vegetables other than cucurbits	1	3
Bupirimate	VO0440	Eggplant	T1	-
Buprofezin	VO0050	Fruiting vegetables other than cucurbits	T2	-
Carbaryl	VO0440	Eggplant	-	1
Chlorantraniliprole	VO0050	Fruiting vegetables other than cucurbits	0.3	0.6
Chlordane	-	Vegetables	E0.05	-
Chlorothalonil	VO0440	Eggplant	T10	-
	-	Vegetables	T7	-
Chlorpyrifos	-	Vegetables	T*0.01	-
Chlorpyrifos-Methyl	VO0440	Eggplant	-	1
Chlorthal-dimethyl	-	Vegetables	5	-
Clothianidin	VO0050	Fruiting vegetables other than cucurbits	T0.7	0.05
Cyantraniliprole	VO0050	Fruiting vegetables other than cucurbits	2	0.5
Cyazofamid	VO0440	Eggplant	-	0.2
Cyfluthrin/beta-cyfluthrin	VO0440	Eggplant	T0.2	0.2
Cyhalothrin (includes lambda-cyhalothrin)	VO0050	Fruiting vegetables other than cucurbits	-	0.3
Cypermethrins (including alpha- and zeta- cypermethrin)	VO0440	Eggplant	-	0.03
	VO0050	Fruiting vegetables other than cucurbits	T1	-
Cyprodinil	VO0050	Fruiting vegetables other than cucurbits	T0.2	2
Cyromazine	VO0050	Fruiting vegetables other than cucurbits	T1	1
DDT		Vegetables	E1	-

Chemical	Codex	Description	APVMA MRL mg/kg	Codex MRL mg/kg
Deltamethrin	VO0050	Fruiting vegetables other than cucurbits	0.1	-
Diafenthiuron	VO0050	Fruiting vegetables other than cucurbits	0.5	-
Diazinon	-	Vegetables	0.7	-
Dichlobenil	VO0050	Fruiting vegetables other than cucurbits	-	*0.01
Dicofol	-	Vegetables	5	-
Difenoconazole	VO0050	Fruiting vegetables other than cucurbits	-	0.6
Dimethoate	VO0440	Eggplant	T0.2	-
Dimethomorph	VO0050	Fruiting vegetables other than cucurbits	-	1.5
Dinotefuran	VO0050	Fruiting vegetables other than cucurbits	-	0.5
Diquat	VO0050	Fruiting vegetables other than cucurbits	-	*0.01
	-	Vegetables	*0.05	-
Dithiocarbamates (mancozeb, metham, metiram, thiram, zineb and ziram)	VO0050	Fruiting vegetables other than cucurbits	3	-
2,2-DPA	-	Vegetables	*0.1	-
Emamectin benzoate	VO0050	Fruiting vegetables other than cucurbits	0.1	0.02
EPTC	-	Vegetables	*0.04	-
Etoxazole	VO0050	Fruiting vegetables other than cucurbits	0.05	-
Fenamidone	VO0050	Fruiting vegetables other than cucurbits	-	1.5
Fenhexamid	VO0440	Eggplant	-	2
Fenpyroximate	VO0440	Eggplant	-	0.3
Fonicamid	VO0050	Fruiting vegetables other than cucurbits	-	0.4
Fluazifop-P	VO0440	Eggplant	T0.7	-
Flubendiamide	VO0050	Fruiting vegetables other than cucurbits	2	-
Fludioxonil	VO0440	Eggplant	T0.2	0.3
Fluensulfone	VO0050	Fruiting vegetables other than cucurbits	1	0.7
Flumioxazin	VO0050	Fruiting vegetables other than cucurbits	-	*0.02
Fluopicolide	VO0050	Fruiting vegetables other than cucurbits	-	1
Fluxapyroxad	VO0050	Fruiting vegetables other than cucurbits	-	0.6
Forchlorfenuron	VO0050	Fruiting vegetables other than cucurbits	T0.02	-
Fosetyl	VO0050	Fruiting vegetables other than cucurbits	T0.02	-
Glyphosate	VO0050	Fruiting vegetables other than cucurbits	*0.1	-
Heptachlor	-	Vegetables	E0.05	-
Hexythiazox	VO0440	Eggplant	-	0.1
	VO0050	Fruiting vegetables other than cucurbits	T1	-
Imidacloprid	VO0440	Eggplant	-	0.2
	VO0050	Fruiting vegetables other than cucurbits	0.5	-
Indoxacarb	VO0440	Eggplant	0.5	0.5
Inorganic bromide	-	Vegetables	20	-
Iprodione	VO0440	Eggplant	T1	-
Lindane	-	Vegetables	E2	-
Linuron	-	Vegetables	*0.05	-
Maldison	VO0050	Fruiting vegetables other than cucurbits	3	-
Metaflumizone	VO0440	Eggplant	-	0.6
Metalaxyl	-	Vegetables	T0.1	-
Metaldehyde	-	Vegetables	1	-
Methidathion	VO0440	Eggplant	0.1	-

Chemical	Codex	Description	APVMA MRL mg/kg	Codex MRL mg/kg
Methiocarb	-	Vegetables	0.1	-
Methomyl	VO0050	Fruiting vegetables other than cucurbits	1	-
Methoxyfenozide	VO0050	Fruiting vegetables other than cucurbits	3	-
Methyl bromide	-	Vegetables	T*0.05	-
Milbemectin	VO0050	Fruiting vegetables other than cucurbits	0.02	-
Novaluron	VO0050	Fruiting vegetables other than cucurbits	-	0.7
Omethoate	-	Vegetables	2	-
Paraquat	VO0050	Fruiting vegetables other than cucurbits	-	0.05
	-	Vegetables	*0.05	-
Penthiopyrad	VO0050	Fruiting vegetables other than cucurbits	5	2
Permethrin	VO0440	Eggplant	-	1
Phorate	VO0440	Eggplant	0.5	-
Phosphorous acid	VO0050	Fruiting vegetables other than cucurbits	T100	-
Piperonyl butoxide	-	Vegetables	8	-
Pirimicarb	VO0050	Fruiting vegetables other than cucurbits	-	0.5
	-	Vegetables	1	-
Prometryn	-	Vegetables	*0.1	-
Propamocarb	VO0440	Eggplant	-	0.3
	VO0050	Fruiting vegetables other than cucurbits	T0.3	-
Propargite	-	Vegetables	3	-
Propazine	-	Vegetables	*0.1	-
Pydiflumetofen	VO0050	Fruiting vegetables other than cucurbits	T0.7	-
Pymetrozine	VO0050	Fruiting vegetables other than cucurbits	0.5	-
Pyraclostrobin	VO0440	Eggplant	-	0.3
	VO0050	Fruiting vegetables other than cucurbits	0.3	-
Pyrethrins	-	Vegetables	1	-
Pyriproxyfen	VO0050	Fruiting vegetables other than cucurbits	1	-
Sethoxydim	VO0440	Eggplant	T0.1	-
Spinetoram	VO0050	Fruiting vegetables other than cucurbits	0.1	-
Spinosad	VO0050	Fruiting vegetables other than cucurbits	0.2	-
Spirotetramat	VO0050	Fruiting vegetables other than cucurbits	7	1
Sulfoxaflor	VO0050	Fruiting vegetables other than cucurbits	1	1.5
Tebuconazole	VO0440	Eggplant	-	0.1
Thiacloprid	VO0440	Eggplant	-	0.7
Thiamethoxam	VO0050	Fruiting vegetables other than cucurbits	T0.5	0.7
Triadimefon	VO0050	Fruiting vegetables other than cucurbits	0.2	1
Triadimenol	VO0050	Fruiting vegetables other than cucurbits	1	1
Trichlorfon	VO0440	Eggplant	T0.5	-
Trifloxystrobin	VO0440	Eggplant	-	0.7
Trifluralin	-	Vegetables	0.05	-
Triforine	VO0440	Eggplant	-	1

NOTE: MRLs are constantly under review and subject to change. Check for current MRLs and do not rely on the values stated above.

* Indicates that an MRL is at the Limit of Quantitation (LOQ)

NR - Uses of substances where MRLs are not necessary / required.

T =Temporary MRL

E = The MRL is based on extraneous residues

Sources: APVMA MRLs: Agricultural and Veterinary Chemicals Code (MRL Standard) Instrument 2019. Compilation 4. Prepared 15 January 2020. CODEX MRLs: CODEX Alimentarius International Food Standards database (February 2020), <http://www.fao.org/fao-who-codexalimentarius/codex-texts/dbs/pestres/en/>

Appendix 6: Eggplant Agrichemical Regulatory Risk Assessment

Eggplant Agrichemical Regulatory Risk Assessment

October 2020

Regulatory pressures on agrichemicals are increasing globally, with many being either restricted or withdrawn from use. For older agrichemicals these pressures are often the result of reconsiderations involving new or refined risk assessment methodologies that require the generation of new data. A consequence of which can be that many of these chemicals 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 farm chemicals 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 prohibiting the use in the exporting country to ensure compliance, as breaches of MRLs would adversely affect market access.

The effects of the above are greater pressure placed on the availability and use of individual chemicals 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 leeks as well as current initiatives aimed at addressing identified pest management deficiencies.

Eggplant 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

Problem	Active Constituents	Chemical Group	Comment	Activities
Aphids				
Aphids	Dimethoate	1B	Codex: MRL deletion recommended. EU: Proposing to set all MRLs to < 0.01 mg/kg	
	Petroleum oil (PER12221)	-		
	Phorate (PER8930)	1B	APVMA: Nominated for review EU: No authorisation in place PIC procedure (Rotterdam Convention) ⁱ	
	Pirimicarb	1A	Codex: JMPR Periodic re-evaluation 2022/23 EU: Candidate for substitution	
Cabbage aphid, Cotton aphid & Currant lettuce aphid	Afidopyropen	9D		
Green peach aphid	Afidopyropen	9D		
	Chlorantraniliprole + thiamethoxam	4A + 28	Thiamethoxam APVMA: Under review Canada: Proposal to deregister outdoor uses EU: Outdoor uses deregistered ⁱⁱ USA: Re-registration with new risk mitigation	
	Cyantraniliprole	28		
	Imidacloprid	4A	APVMA: Under review Canada: Under review EU: Removal of all field uses USA: Re-registration with new risk mitigation	
	Pymetrozine	9B	EU: Being phased out Codex: No registrant support	
	Spirotetramat	23		
	Sulfoxaflor	4C	USA: Pollinator concerns	
Potato aphid	Pymetrozine	9B	EU: Being phased out Codex: No registrant support	

Problem	Active Constituents	Chemical Group	Comment	Activities
Beetles				
Spotted vegetable weevil	Chlorpyrifos	1B	APVMA: Under review. Potential issues w.r.t. environmental loading and worker exposure.	
Vegetable weevil	Chlorpyrifos	1B	EU: Proposed cancellation of use Canada: proposed cancellation of most uses. USA: EPA decision to allow continued use	
Caterpillars / Lepidoptera				
Cluster caterpillar	Chlorantraniliprole + thiamethoxam	4A + 28	Thiamethoxam APVMA: Under review Canada: Proposal to deregister outdoor uses EU: Outdoor uses deregistered USA: Re-registration with new risk mitigation measures	
	Methomyl (PER82428)	1A	APVMA: nominated for review Canada: Majority of uses cancelled EU: No authorisations (expired 31/8/19)	
	Methoxyfenozide	18	EU: Proposed restricted authorisation & Candidate for substitution	
Cucumber moth	Methomyl (PER82428)	1A	APVMA: nominated for review Canada: Majority of uses cancelled EU: No authorisations (expired 31/8/19)	
Cutworms	Chlorpyrifos	1B	APVMA: Under review. Potential issues w.r.t. environmental loading and worker exposure. EU: Proposed cancellation of use Canada: proposed cancellation of most uses. USA: EPA decision to allow continued use	
	Diazinon	1B	EU: Deregistered Codex: To be reviewed by 2020/21. JMPR Periodic re-evaluation 2020	
Eggfruit caterpillar	Chlorantraniliprole	28		

Problem	Active Constituents	Chemical Group	Comment	Activities
Fall armyworm	Chlorantraniliprole (PER89259)	28		
	Chlorantraniliprole + thiamethoxam (PER89280)	28 + 4A	Thiamethoxam: APVMA: Under review Canada: Proposal to deregister outdoor uses EU: Outdoor uses deregistered USA: Re-registration with new risk mitigation measures	
	Emamectin benzoate (PER89263)	6		
	Indoxacarb (PER89278)	22A	EU: Proposed non-renewal	
	Spinetoram (PER89241)	5		
	Spinosad (PER89870)	5		
Helicoverpa species Native Budworm (<i>H. punctigera</i>) Corn earworm/Cotton bollworm (<i>H. armigera</i>)	Chlorantraniliprole	28		
	Chlorantraniliprole + thiamethoxam	4A + 28	Thiamethoxam APVMA: Under review Canada: Proposal to deregister outdoor uses EU: Outdoor uses deregistered USA: Re-registration with new risk mitigation measures	
	Cyantraniliprole	28		
	Emamectin benzoate (PER81914)	6		
	Flubendiamide	28		
	Helicoverpa NPV (<i>armigera</i>)(<i>zea</i>)	31		
	Indoxacarb	22A	EU: Proposed non-renewal	
	Methomyl (PER82428)	1A	APVMA: nominated for review Canada: Majority of uses cancelled EU: No authorisations (expired 31/8/19)	
	Methoxyfenozide	18	EU: Proposed restricted authorisation & Candidate for substitution	
	Spinetoram	5		
Spinosad	5			

Problem	Active Constituents	Chemical Group	Comment	Activities
Loopers	Methomyl (PER82428)	1A	APVMA: nominated for review Canada: Majority of uses cancelled EU: No authorisations (expired 31/8/19)	
Potato moth (Leafminer)	Chlorantraniliprole	28		
	Chlorantraniliprole + thiamethoxam	4A + 28	Thiamethoxam APVMA: Under review Canada: Proposal to deregister outdoor uses EU: Outdoor uses deregistered USA: Re-registration with new risk mitigation measures	
	Cyantraniliprole	28		
	Flubendiamide	28		
	Indoxacarb	22A	EU: Proposed non-renewal	
	Spinetoram	5		
Tomato grub	Emamectin as benzoate	6		
	Methoxyfenozide	18	EU: Proposed restricted authorisation & Candidate for substitution	
	Spinetoram	5		
Webworms	Methomyl (PER82428)	1A	APVMA: nominated for review Canada: Majority of uses cancelled EU: No authorisations (expired 31/8/19)	

Problem	Active Constituents	Chemical Group	Comment	Activities
Fruit fly				
Fruit flies	Methyl bromide	8A		
Mediterranean fruit fly	Clothianidin	4A	APVMA: Under review Canada: Proposal to cancel foliar use in orchards strawberries and turf EU: Outdoor uses deregistered USA: Re-registration with new risk mitigation measures ⁱⁱⁱ	
	Dimethoate (PER12506)	1B	Codex: Deletion of MRLs proposed EU proposing to set all MRLs to < 0.01 mg/kg	
	Trichlorfon (PER80717)	1B	APVMA: nominated for review Codex: No MRLs EU: deregistered US: No MRLs	
Queensland fruit fly	Alpha-cypermethrin (PER80099)	3A	EU: Proposed restricted authorisation & Candidate for substitution	
	Clothianidin	4A	APVMA: Under review Canada: Proposal to cancel foliar use in orchards strawberries and turf EU: Outdoor uses deregistered USA: Re-registration with new risk mitigation measures	
	Dimethoate (PER12506)	1B	Codex: Deletion of MRLs proposed EU proposing to set all MRLs to < 0.01 mg/kg	
	Trichlorfon (PER80717)	1B	APVMA: nominated for review Codex: No MRLs EU: deregistered US: No MRLs	

Problem	Active Constituents	Chemical Group	Comment	Activities
Grasshoppers/Locusts				
Black field cricket	Chlorpyrifos	1B	APVMA: Under review. Potential issues w.r.t. environmental loading and worker exposure. EU: Proposed cancellation of use Canada: proposed cancellation of most uses. USA: EPA decision to allow continued use	
Field crickets	Chlorpyrifos	1B		
Mole crickets	Chlorpyrifos	1B		
Wingless grasshopper	Chlorpyrifos	1B		
	Dimethoate	1B	Codex: Deletion of MRLs proposed EU proposing to set all MRLs to < 0.01 mg/kg	
Jassids/Plant bugs				
Green mirid	Petroleum oil (PER12221)			
Green vegetable bug	Dimethoate	1B	Codex: Deletion of MRLs proposed EU proposing to set all MRLs to < 0.01 mg/kg	
	Petroleum oil (PER12221)	-		
Grey cluster bug	Petroleum oil (PER12221)	-		
Jassids	Dimethoate	1B	Codex: Deletion of MRLs proposed EU proposing to set all MRLs to < 0.01 mg/kg	
	Phorate (PER8930)	1B		
Leafhoppers	Dimethoate	1B	Codex: Deletion of MRLs proposed EU proposing to set all MRLs to < 0.01 mg/kg	
	Petroleum oil (PER12221)	-		

Problem	Active Constituents	Chemical Group	Comment	Activities
Rutherglen bug	Methidathion (PER14047)	1B	Codex: To be reviewed 2019/20. APVMA: Use will not be permitted in AU after 4 February 2021. Registrant will remove from sale and all authorisations will be cancelled. EU: Deregistered USA: Deregistered Registrant support uncertain	
	Methomyl (PER82428)	1A	APVMA: nominated for review Canada: Majority of uses cancelled EU: No authorisations (expired 31/8/19)	
	Petroleum oil (PER12221)	-		
Tomato potato Psyllid	Abamectin (PER84229)	6		
	Spirotetramat (PER84245)	23		
	Sulfoxaflor (PER84743)	4C	USA: Pollinator concerns	
Mites				
Broad mite	Hexythiazox (PER14765)	10A	Codex: No MRLs	ST19020 Data generation project for a label registration Spiromesifen (Oberon 240SC) Group 23
Bryobia mite	Bifenazate	20D	EU: Proposed non-renewal	
Mites	Dimethoate	1B	Codex: Deletion of MRLs proposed EU proposing to set all MRLs to < 0.01 mg/kg	
	Petroleum oil (PER12221)	-		
	Phorate (PER8930)	1B	APVMA: Nominated for review EU: No authorisation in place PIC procedure (Rotterdam Convention)	
Red tomato spider mite	Abamectin	6		
	Bifenazate	20D	EU: Proposed non-renewal	
	Hexythiazox (PER14765)	10A	Codex: No MRLs	
Tomato russet mite	Hexythiazox (PER14765)	10A	Codex: No MRLs	
Tomato red spider mite	Abamectin (PER14722)	6		

Problem	Active Constituents	Chemical Group	Comment	Activities
Two-spotted (Red spider) mite	Abamectin	6		
	Bifenazate (PER82341)	20D	EU: Proposed non-renewal	
	Etoxazole	10B	EU: Uses restricted to greenhouse ornamentals only & Candidate for substitution	
	Hexythiazox (PER14765)	10A	Codex: No MRLs	
	Milbemectin	6		
Thrips				
Melon thrips	Imidacloprid	4A	APVMA: Under review Canada: Under review EU: Removal of all field uses USA: Re-registration with new risk mitigation measures	
	Spinetoram (PER14186)	5		
Thrips	Dimethoate	1B	Codex: Deletion of MRLs proposed EU proposing to set all MRLs to < 0.01 mg/kg	
	Methomyl (PER82428)	1A	APVMA: nominated for review Canada: Majority of uses cancelled EU: No authorisations (expired 31/8/19)	
	Petroleum oil (PER12221)	-		
	Phorate (PER8930)	1B	APVMA: Nominated for review EU: No authorisation in place PIC procedure (Rotterdam Convention)	
Tomato thrips	Chlorantraniliprole + thiamethoxam	4A + 28	Thiamethoxam APVMA: Under review Canada: Proposal to deregister outdoor uses EU: Outdoor uses deregistered USA: Re-registration with new risk mitigation measures	
	Cyantraniliprole	28		

Problem	Active Constituents	Chemical Group	Comment	Activities
Western flower thrips	Abamectin	6		
	Chlorantraniliprole + thiamethoxam	4A + 28	Thiamethoxam APVMA: Under review Canada: Proposal to deregister outdoor uses EU: Outdoor uses deregistered USA: Re-registration with new risk mitigation measures	
	Cyantraniliprole	28		
	Methomyl (PER82428)	1A	APVMA: nominated for review Canada: Majority of uses cancelled EU: No authorisations (expired 31/8/19)	
	Spinetoram	5		
	Spinosad	5		
Whitefly				
Cotton (Sweet Potato) whitefly	Buprofezin (PER82467)	16	EU: In the process of deleting MRLs	
Greenhouse whitefly	Buprofezin (PER82467)	16	EU: In the process of deleting MRLs	
	Chlorantraniliprole + thiamethoxam	4A + 28	Thiamethoxam APVMA: Under review Canada: Proposal to deregister outdoor uses EU: Outdoor uses deregistered USA: Re-registration with new risk mitigation measures	
	Petroleum oil	-		
	Pymetrozine	9B	EU: Being phased out Codex: No registrant support	
	Pyriproxyfen	7C	EU: Authorisation renewal process underway	
	Sulfoxaflor	4C	USA: Pollinator concerns	

Problem	Active Constituents	Chemical Group	Comment	Activities
Silver leaf whitefly	Afidopyropen	9D		
	Buprofezin (PER82467)	16	EU: In the process of deleting MRLs	
	Chlorantraniliprole + thiamethoxam	4A + 28	Thiamethoxam APVMA: Under review Canada: Proposal to deregister outdoor uses EU: Outdoor uses deregistered USA: Re-registration with new risk mitigation measures	
	Cyantraniliprole	28		
	Imidacloprid	4A	APVMA: Under review Canada: Under review EU: Removal of all field uses USA: Re-registration with new risk mitigation measures	
	Petroleum oil	-		
	Pymetrozine	9B	EU: Being phased out Codex: No registrant support	
	Pyriproxyfen	7C	EU: Authorisation renewal underway	
	Spirotetramat	23		
Other				
Fungus gnats	<i>Bacillus thuringiensis israeliensis</i> (PER14694)	11A		
Vegetable leafminer (<i>Liriomyza spp.</i>)	Abamectin (PER81876)	6		
	Spirotetramat (PER88640)	23		

Problem	Active Constituents	Chemical Group	Comment	Activities
Nematodes				
Root-knot nematodes	Abamectin	6		
	Fluensulfone	-		
DISEASES				
Alternaria leaf spots	Mancozeb	M3	APVMA: Nominated for review Canada: Many uses cancelled Codex: To be reviewed 2022/23 EU: Authorisation not renewed ^{iv}	
	Metiram	M3	APVMA: Nominated for review Canada: Proposed cancelling of foliar uses Codex: To be reviewed 2022/23	
Alternaria spot	Chlorothalonil (PER82895)	M5	APVMA: Previously nominated for review Canada: Review recently completed; continued use considered acceptable EU: Deregistered ^v .	
Anthracnose	Mancozeb	M3	APVMA: Nominated for review Canada: Many uses cancelled Codex: To be reviewed 2022/23 EU: Authorisation not renewed	
	Zineb (PER14839)	M3	APVMA: Nominated for review Codex: To be reviewed 2022/23 EU: No authorisation in place	
Bacterial canker	Copper (PER14038)	M1	EU: Candidate for substitution	
Bacterial speck	Copper (PER14038)	M1	EU: Candidate for substitution	
Bacterial spot	Copper (PER14038)	M1	EU: Candidate for substitution	
Bactericide	Iodine	M		

Problem	Active Constituents	Chemical Group	Comment	Activities
Downy mildew	Chlorothalonil (PER82895)	M5	APVMA: Previously nominated for review Canada: Review recently completed; continued use considered acceptable EU: Deregistered.	
	Mancozeb	M3	APVMA: Nominated for review Canada: Many uses cancelled Codex: To be reviewed 2022/23 EU: Authorisation not renewed	
Early blight (<i>Alternaria solani</i>)	<i>Bacillus amyloquefaciens</i> strain QST 713 (PER88032)	BM02		
Fungi	Iodine	M		
Grey leaf spot	Chlorothalonil (PER82895)	M5	APVMA: Previously nominated for review Canada: Review recently completed; continued use considered acceptable EU: Deregistered.	
Grey mould	Chlorothalonil (PER82895)	M5	APVMA: Previously nominated for review Canada: Review recently completed; continued use considered acceptable EU: Deregistered.	
	Iprodione (PER80910)	2	Canada: Majority of food crop uses deleted Codex: Review scheduled for 2022/23 EU: Deregistered	
	Penthiopyrad	7		
Late (Irish) blight	Zineb (PER14839)	M3	APVMA: Nominated for review Codex: To be reviewed 2022/23 EU: No authorisation in place	
Phytophthora soil fungus (Dieback)	Phosphorous acid (PER81408)	33		
Powdery mildew	Bupirimate (PER14036)	8		
	Hydrogen peroxide + peroxyacetic acid	M		
	Penthiopyrad	7		
	Triadimenol	3	APVMA: Nominated for review EU: No authorisation in place	

Problem	Active Constituents	Chemical Group	Comment	Activities
Target spot (Early blight)	Boscalid	7		
	Mancozeb	M3	APVMA: Nominated for review Canada: Many uses cancelled Codex: To be reviewed 2022/23 EU: Authorisation not renewed	
	Metiram + pyraclostrobin	11 + M3	Metiram APVMA: Nominated for review Canada: Proposed cancelling of foliar uses Codex: To be reviewed 2022/23	
	Penthiopyrad	7		
	Zineb	M3	APVMA: Nominated for review Codex: To be reviewed 2022/23 EU: No authorisation in place	
WEEDS				
Broadleaf weeds and grasses	Clethodim (PER82459)	A	Codex: MRLs proposed for deletion	
	Diquat	L	APVMA: Under review EU: No authorisations in place	
	Fluazifop-P (PER82556)	A		
	Glyphosate	M	Ongoing issues internationally	
	Paraquat	L	APVMA: Under review EU: No authorisation in place Rotterdam Convention: nomination	
	Trifluralin (PER12823)	D	EU: No authorisation in place	
Plant growth regulators				
	Paclobutrazol			

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ⁱ Conference of the Parties (COP-9) to the Rotterdam Convention added phorate to Annex III, making it subject to the prior Informed Consent Procedure

ⁱⁱ Use of thiamethoxam limited to permanent greenhouses and that the resulting crop stays its entire life cycle within a permanent greenhouse, so that it is not replanted outside

ⁱⁱⁱ Clothianidin: Berry fruit, fruiting vegetables, ornamentals, pome fruit, turf Reduction in yearly total rate

^{iv} <https://ec.europa.eu/transparency/comitology-register/screen/documents/069436/1/consult>

^v Chlorothalonil - Withdrawal authorisations by 20 November 2019. Max period of grace: 20 May 2020. Commission Implementing Regulation (EU) 2019/677 <https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:32019R0677&from=EN>