Hort Innovation

Final Report

Vegetable Strategic Agrichemical Review Process (SARP) Report Updates

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VG18004

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

Disclaimer:

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Content

Summary

The project has produced 7 new and 18 updated Strategic Agrichemical Review Process (SARP) reports (Table 1) for various vegetable groups in conjunction with Hort Innovation.

Table 1. SARP reports – 18 updates and 7 new reports

25 Vegetable SARPs (7 New & 18 Updates)			
	Crop Group	**Crop**	**Last Updated**
1.	Bulb Vegetables	Leek	2014
2.		Spring Onions & Shallots	2014
3.		Fennel bulb	New SARP
4.	Brassica Vegetables	Brassica Vegetables (Cauliflower, Broccoli, Cabbage & Brussels sprouts)	2014
5.	Fruiting Vegetables - Cucurbits	Cucumber	2014
6.		Zucchini	2014
7.		Pumpkin	New SARP
8.		Squash	New SARP
9.	Fruiting Vegetables other than Cucurbits	Eggplant	2014
10.		Peppers (Capsicum & Chilli)	2014
11.		Sweet Corn	2014
12.		Okra	New SARP
13.	Leafy Vegetables (including brassica leafy vegetables	Lettuce (head lettuce)	2014
14.		Leafy lettuce	2014
15.		Spinach & Silverbeet	2014
16.		Brassica Leafy	2014
17.	Legume Vegetables (succulent seeds)	Green Beans	2014
18.		Snow & Sugar snap peas	2014
19.	Root & Tuber vegetables	Carrot	2014
20.		Beetroot	2014
21.		Swede, Turnips, Parsnips, Radish & Horseradish	New SARP
22.	Stalk & Stem Vegetables	Celery	2014
23.		Artichoke	New SARP
24.		Rhubarb	New SARP
25.	Herbs	Parsley	2014

The SARP reports involved a desktop audit and an industry liaison component to assess the importance of plant pests affecting the vegetable industry.

At the start of the project, SARP reports were required for 27 vegetable crops. Later, two groups were removed, Chokos & Fennel leaf, as no specific industry crop data were available for them.

The SARP reports will identify key pest priorities, evaluate the availability and effectiveness of chemical control tools, determine gaps in the pest control strategy and identify suitable new or alternative pesticides to address those gaps. Whilst the outcomes may not be a complete assessment of all pests and control methods, they will prioritise the major pest issues in each vegetable group.

At a time when access to chemicals is getting harder, when certain pests continue to develop chemical resistance, when faced with the ever-present threat of overseas pest entry and when export markets increasingly seek chemical free produce, the industry needs all the information it can get to face these challenges and continue to improve their productivity.

In such a challenging and ever-changing environment, the 25 SARP reports will provide the industry with a blueprint to identify what products are available, what is being lost, what new products are being developed by registrants and what is in the horizon, via minor use permits in the short term and via label extension in the long term, in terms of pest control options.

New opportunities would ideally involve,

a) Better IPM strategies,

b) Novel biopesticides,

c) Improved approaches to pest and disease management (lures, sterile-male pest release techniques and

the use of semi-chemicals and 'softer' chemicals").

Collectively, the SARP reports will be a road map for industry stakeholders to plan for pest control in the near future and allocate (levy investment) resources for maximum gains.

Keywords

SARP; Diseases; Pests; Weeds; Fungicide, Insecticide; Herbicide.

Introduction

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 horticultural production and respective IPM programs. They control the various diseases, insects and weeds that affect crops 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 horticultural industry regarding pesticide access, Hort Innovation undertakes regular reviews of the pesticide requirements for various crops via a Strategic Agrichemical Review Process (SARP).

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

Exotic plant pests, not present in Australia, are not addressed in this document. A biosecurity plan has been developed for the vegetable industry in consultation with industry, government and scientists. The Biosecurity Plan outlines key threats to the industry, risk mitigation plans, identification and categorisation of exotic pests and contingency plans. High priority exotic pests have been assessed based on their potential to enter, establish, and spread in Australia (e.g., environmental factors, host range, vectors) and the cost to industry of control measures.

Methodology

The major objectives of this project for each crop type were:

- Update the current pest and disease priorities,
- Update current pesticide options available,
- Update Regulatory Risks, MRLs
- Identify potential new solutions to address gaps identified.

These objectives were achieved through the following steps for each of the 25 vegetable crop groups:

1. Industry survey: An internet survey was designed and conducted to gather feedback from the industries about their current priorities for diseases, insects, weeds and plant growth regulators. This was carried out via a separate project (VG16060 - Vegetable Agrichemical Pest Management Needs and Priorities (AUSVEG)) the results of which were collated and analysed for incorporating into the current project.
2. Industry Priorities: Survey results were used to update the list of priorities (high, moderate, low). In some cases, the survey information was augmented through direct consultation with key industry personnel.
3. Agricultural Regulatory Risk Assessment Document which was produced via a separate project (MT17019 – Regulatory Support & Co-ordination (AKC) was also incorporated into the SARP report for easy cross-checking risks associated with available chemical options.
4. Current Solutions: Available pesticides (registrations, minor use permits) were updated using online resources of the APVMA. Pesticides at risk were identified through consultation with Kevin Bodnaruk using the resources of MT17019 (Regulatory Support & Co-ordination) and various MRL databases were used to update MRLs for each crop.
5. Potential New Solutions: Feedback from AgChem forums and other market intelligence was used to identify potential new solutions, while factoring in their overall suitability (IPM compatibility, mode of action, risk profile, MRL's, efficacy, OH&S, environmental safety and sustainability). Known pesticide solutions that are currently under development with registrants or in current Hort Innovation projects were also included.
6. SARP Reports: Reports were produced to bring all information together, incorporating industry needs and insights along with the solutions to address the pest and disease priorities identified.

Outputs

The project identified and prioritised the major insect, disease and weed pests of each of the 9 crop groups (25 vegetable crops). It identified the current chemical control options, indicating whether there are any risks associated with the existing options, e.g., regulatory, IPM issues, etc. as well as any gaps where there are either no options currently available or there are insufficient options to provide for sustainable pest management in the short to medium term.

The project has produced:

18 Updated SARP reports (Leek, Spring onion & Shallots, Brassica vegetables, Cucumber, Zucchini, Eggplant, Peppers, Sweet corn, Head lettuce, Leafy lettuce, Spinach & Silverbeet, Brassica leafy vegetables, Green beans, Snow & Sugar snap peas, Carrot, Beetroot, Celery & Parsley).

7 new SARP report (Fennel bulb, Pumpkin, Squash, Okra, Root & tuber vegetables (Swede, Turnips, Parsnips, Radish & Horseradish), Artichoke & Rhubarb).

Outcomes

The outcomes of this project are:

- A comprehensive list of the current pesticide control options for each vegetable group, which will assist the industry to reference what products are registered for those uses.
- A clear indication of where the horticultural industry should pursue additional pest control options to address priority pest issues in each vegetable type, either through new registrations in conjunction with registrants or by obtaining minor use or emergency use permits through the APVMA.
- The reports have been presented in a format that will enable easy updating of the data as new information becomes available in the future.

The project provides the various vegetable industries with a strategic outlook that directs ongoing efforts to ensure the availability of effective chemical pest control tools that contribute to a productive, profitable and competitive industry.

Monitoring and evaluation

A monitoring and evaluation program was not required for this project.

Recommendations

All recommendations are contained within the SARP reports produced by the project.

Refereed scientific publications

Not applicable.

References

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 2020-21	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

Intellectual property, commercialisation and confidentiality

There has been no intellectual property generated that requires management by Hort Innovation. All general information and knowledge are freely available and the SARP reports are published on the Hort Innovation website.

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Appendices

Published SARP reports of 25 vegetables. (Leek, Spring onion & Shallots, Brassica vegetables, Cucumber, Zucchini, Eggplant, Peppers, Sweet corn, Head lettuce, Leafy lettuce, Spinach & Silverbeet, Brassica leafy vegetables, Green beans, Snow & Sugar snap peas, Carrot, Beetroot, Celery, Parsley, Fennel bulb, Pumpkin, Squash, Okra, Root & tuber vegetables (Swede, Turnips, Parsnips, Radish & Horseradish), Artichoke & Rhubarb)

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