

Final Report

Strengthening Biosecurity for the Australian Vegetable Industry – Phase 2

Project leader:

Zarmeen Hassan

Delivery partner:

AUSVEG

Project code:

VG15020

Project:

Strengthening Biosecurity for the Australian Vegetable Industry – Phase 2

Disclaimer:

Horticulture Innovation Australia Limited (Hort Innovation) makes no representations and expressly disclaims all warranties (to the extent permitted by law) about the accuracy, completeness, or currency of information in this Final Report.

Users of this Final Report should take independent action to confirm any information in this Final Report before relying on that information in any way.

Reliance on any information provided by Hort Innovation is entirely at your own risk. Hort Innovation is not responsible for, and will not be liable for, any loss, damage, claim, expense, cost (including legal costs) or other liability arising in any way (including from Hort Innovation or any other person's negligence or otherwise) from your use or non-use of the Final Report or from reliance on information contained in the Final Report or that Hort Innovation provides to you by any other means.

Funding statement:

This project has been funded by Hort Innovation, using the vegetable research and development levy and contributions from the Australian Government. Hort Innovation is the grower-owned, not-for-profit research and development corporation for Australian horticulture.

Publishing details:

ISBN 978 0 7341 4496 6

Published and distributed by: Hort Innovation

Level 8
1 Chifley Square
Sydney NSW 2000

Telephone: (02) 8295 2300

www.horticulture.com.au

© Copyright 2018 Horticulture Innovation Australia

Content

Content	3
Summary	4
Keywords	5
Introduction	6
Methodology	6
Outputs	7
Plant Health Australia Meeting attendance and Working Groups	8
Outcomes	8
Monitoring and evaluation	9
Recommendations	11
Refereed scientific publications	12
References	13
APPENDIX 1	13
Intellectual property, commercialisation and confidentiality	14
Acknowledgements	15
Appendices	Error! Bookmark not defined.

Summary

It was identified by the vegetable industry that biosecurity and related technical issues are areas where the industry requires appropriate expertise to respond to, and engage with, governments and various plant health bodies. Prior to commencement of the Biosecurity Advisor role in 2011, this lack of expertise was a significant weakness in the vegetable industry's technical capacity. VG15020 provided for AUSVEG's continued industry representation in a range of forums, such as the Consultative Committee on Emergency Plant Pests (CCEPP), and at various biosecurity-related meetings facilitated by the Australian Government. The project also allowed the industry to provide input into Biosecurity Import Risk Analyses (BIRAs) and state biosecurity policies, assist in the development of plant pest contingency plans, and provide input into endemic pest control issues, including the maintenance of existing trade. In addition, the role permitted AUSVEG to participate in various Plant Health Australia (PHA) working groups and other matters surrounding the Emergency Plant Pest Response Deed (EPPRD).

Following the initial appointment of the Biosecurity Advisor in 2012 (VG11013), AUSVEG has engaged widely with industry, government and plant health bodies on biosecurity issues. Through this greater technical capacity and more comprehensive level of engagement, AUSVEG has had stronger and more robust representation at PHA meetings, in various working groups, at emergency plant pest response meetings and in ongoing communications with government bodies and departments such as Biosecurity Australia, PHA and the Department of Agriculture and Water Resources.

Keywords

Biosecurity, EPPRD, AUSVEG, PHA, pest risk analysis, import risk analysis.

Introduction

It was identified by the vegetable industry that biosecurity and related technical issues are areas where the industry requires appropriate expertise to respond to, and engage with, governments and various plant health bodies. Prior to commencement of the Biosecurity Advisor role in 2011, this lack of expertise was a significant weakness in the vegetable industry's technical capacity. VG15020 provided for AUSVEG's continued industry representation in a range of forums, such as the Consultative Committee on Emergency Plant Pests (CCEPP), and at various biosecurity-related meetings facilitated by the Australian Government. The project also allowed the industry to provide input into Biosecurity Import Risk Analyses (BIRAs) and state biosecurity policies, assist in the development of plant pest contingency plans, and provide input into endemic pest control issues, including the maintenance of existing trade. In addition, the role permitted AUSVEG to participate in various Plant Health Australia (PHA) working groups and other matters surrounding the Emergency Plant Pest Response Deed (EPPRD).

It was also important that AUSVEG develop internal capacity to be able to address biosecurity issues in the future and this project provided an important mentoring and advising capacity to AUSVEG staff in all areas about biosecurity.

The Australian vegetable industry developed this project to ensure that the industry is effectively able to respond to, and engage with, the Australian Government and various other Bodies and Committees (State and Federal), on a range of relevant biosecurity issues as there was an identified need for a technical expert to represent the industry in this area. The project also provided the Peak Industry Body AUSVEG with ongoing updates and advice on biosecurity-related developments that could impact on the industry.

The critical importance of biosecurity in relation to protecting Australia's \$3.7 billion vegetable industry from foreign pest and disease threats and the need to ensure a greater level of general awareness about serious biosecurity issues within the industry were two of the key factors in proposing a greater technical capacity for the industry through the project.

Equally as important was the critical need for the industry to be able to comprehensively articulate its position on biosecurity issues on a technical level through AUSVEG's obligations under the EPPRD. A greater level of participation in technical pest risk issues and national biosecurity research activities was also considered of high importance. Biosecurity has wide-ranging implications not just from a direct 'cost to industry' perspective, but also in relation to domestic and international trade.

Following the initial appointment of the Biosecurity Advisor in 2012 (VG11013), AUSVEG has engaged widely with industry, government and plant health bodies on biosecurity issues. Through this greater technical capacity and more comprehensive level of engagement, AUSVEG has had stronger and more robust representation at PHA meetings, in various working groups, at emergency plant pest response meetings and in ongoing communications with government bodies and departments such as Biosecurity Australia, PHA and the Department of Agriculture and Water Resources.

Methodology

VG15020 resulted in the appointment of the Vegetable Industry Biosecurity Advisor, Dr. Kevin Clayton-Greene, who was managed by AUSVEG, with the associated consultancy costs funded separately via VG15023. The consultant represented AUSVEG at key biosecurity forums and developed and managed submissions of technical documents to relevant bodies, such as the Department of Agriculture and Water Resources.

Dr. Clayton-Greene also identified key meetings and forums for AUSVEG to be present at and ensured that key communication and advice on biosecurity was disseminated to relevant stakeholders through AUSVEG's communication channels.

A key aspect of the project was also to increase the capacity of AUSVEG on biosecurity concerns, and to that effect, Dr. Clayton-Greene trained Dr. Jessica Lye, Callum Fletcher, and towards the end of the project, Zameen Hassan to represent AUSVEG on key stakeholder forums.

Outputs

Over the three year period covered by this project (2015-18) AUSVEG has been affected by 42 host range extensions of pests already in the country and participated in 39 exotic incursions. Details of 27 incursions that have been decided and closed by the National Management Group (NMG) and are public knowledge, are detailed below, while the others remain confidential.

Plant Pest notifications and EPP Incident status table

Notification to the CCEPP	Plant Pest information			Notifying agency / jurisdiction	Current status	Reason for current status
	Scientific name	Common name	Pest type			
30-Oct-18	<i>Macrophomina pseudophaseolina</i>	NA	Fungus	QLD	Closed (pending NMG decision)	Not an EPP
10-Aug-18	<i>Aleurothrixus trachoides</i>	Solanum Whitefly/ Capsicum Whitefly	Insect	Qld (NAQS)	Closed (pending NMG decision)	Not technically feasible to eradicate
31-Jul-18	<i>Faba bean Breeza virus (FBBV)</i>	Faba bean Breeza virus (FBBV)	Virus	NSW	Closed (pending NMG decision)	Not an EPP
29-Jun-18	<i>Phodoryctis caerulea</i>	Bean miner	Insect	QLD	Closed (pending NMG decision)	Not an EPP
11-Jul-18	<i>Endive necrotic mosaic virus (ENMV)</i>	Endive necrotic mosaic virus	Virus	NSW	Closed (pending NMG decision)	Not technically feasible to eradicate
24-May-18	<i>Pyrrhocoris apterus</i>	European fire bug	Insect	VIC	Closed	Not an EPP
19-Apr-18	<i>Columnea latent viroid</i>	<i>Columnea latent viroid (CLVd)</i>	Viroid	NSW	Closed (pending NMG approval)	No evidence of an established population
7-Feb-18	<i>Impatiens necrotic spot virus</i>	Impatiens necrotic spot virus	Virus	NSW	Closed	Not technically feasible to eradicate
22-Jan-18	<i>Halyomorpha halys</i>	Brown marmorated stink bug	Insect	NSW (Horsley Park)	Closed	EPP that has not established
21-Dec-17	<i>Halyomorpha halys</i>	Brown marmorated stink bug	Insect	Qld (Port Alma)	Closed	EPP that has not established
22-Nov-17	<i>Halyomorpha halys</i>	Brown marmorated stink bug	Insect	NSW (Glendenning)	Closed	Response Plan - EPP eradicated
17-Nov-17	<i>Henosepilachna signatipennis</i>	Spotted lady beetle	Insect	QLD (NAQS)	Closed	Not technically feasible to eradicate
12-Jul-17	<i>Candidatus Liberibacter solanacearum</i>	Vegetative disorder/ yellows decline	Bacteria	NSW	Open	EPP that is technically feasible to eradicate (Response Plan [non-cost shared] endorsed 15 November 2017)
26-Jun-17	<i>Dickeya dianthicola</i>	Black leg of potato	Bacteria	WA	Closed	Not technically feasible to eradicate
3-Feb-17	<i>Bactericera cockerelli</i>	Tomato potato psyllid	Psyllid	WA	Open	Response Plan - Transition to Management Phase
14-Sep-16	<i>Stagonosporopsis citrulli</i>	NA	Fungus	QLD	Closed	Not reasonably believed to be an EPP
9-Sep-16	<i>Potato spindle tuber viroid</i>	Potato spindle tuber viroid (PSTVd)	Viroid	VIC	Closed	Not technically feasible to eradicate.
1-Jul-16	<i>Colletotrichum cairnsense</i> sp. nov. (reported as <i>Colletotrichum</i> sp.)	Chili anthracnose	Fungus	QLD	Closed	Not technically feasible to eradicate

Notification to the CCEPP	Plant Pest information			Notifying agency / jurisdiction	Current status	Reason for current status
	Scientific name	Common name	Pest type			
29-Jun-16	<i>Varroa jacobsoni</i> on <i>Apis cerana</i>	Varroa mite	Mite	QLD	Open	Response Plan – Proof of Freedom Phase
1-Jun-16	<i>Carlavirus-Cowpea mild mottle virus group</i>	Cowpea milk mottle virus group	Virus	QLD	Closed	Not technically feasible to eradicate
6-Jun-16	<i>Fusarium/Gibberella fujikuroi</i>	Bakanae disease	Fungus	QLD	Closed	Not technically feasible or cost beneficial to eradicate
4-May-16	<i>Pepper vein yellows virus</i>	PeVYV	Virus	WA	Closed	Not technically feasible to eradicate
30-Mar-16	<i>Dickeya zeae</i>	NA	Bacterium	QLD, NT	Open (NT Incident only) Closed (QLD Incident only)	Awaiting results of pathogenicity testing (NT Incident only) QLD Incident closed
11-Feb-16	<i>Xanthomonas perforans</i>	Bacterial leaf spot	Bacterium	QLD	Closed	Not reasonably believed to be an EPP
11-Jan-16	<i>Tetranychus horridus</i>	NA	Mite	VIC, NSW	Closed	Not technically or cost beneficial to eradicate
7-Jul-15	<i>Oligonychus plegas</i>	Red spider mite	Mite	QLD	Closed	Not technically or cost beneficial to eradicate
24-Jun-15 (first notified 18 Jan 2013)	<i>Melon Necrotic Spot Virus</i>	Melon Necrotic Spot Virus (MNSV)	Virus	NSW VIC (16 May 2016)	Closed	NSW – not technically feasible to eradicate VIC – not technically feasible to eradicate

The advisor has produced 21 articles for *Vegetables Australia* and *Potatoes Australia* (see attached Table in Appendix 1), which have provided important biosecurity-related information to growers and other stakeholders in the vegetable industry.

The major topics covered by this are summarised below.

- Technical comment and review of Pest Risk and Import Risk Analyses on crops or pests that may have an impact on the vegetable or potato industries
- Emergency Plant Pest Response Deed Activities, including CCEPP and NMG participation
- Plant Health Australia Working Group and Meeting attendance
- Imported Seed Working Groups
- National Biosecurity Round Tables
- Plant Health Committee Liaison
- National Pest Management Plans and Industry Biosecurity Plans for the potato and vegetable industries
- Categorisation committee and document preparation
- Scientific Advisory panels
- Member of the Horticultural Advisory Panel to the Plant Biosecurity CRC
- Written advice to AUSVEG to support submission on biosecurity R&D and the biosecurity system pertaining to the IGAB review in 2017

Outcomes

As a result of the activities in VG15020, there has been an increase in biosecurity awareness and preparedness within the vegetable industry, greater knowledge of the biosecurity system, as well as better technical representation of the industry at all levels of government.

All of these outcomes have been met and in many cases exceeded.

The Biosecurity Advisor has assisted the industry by providing technical guidance to enable AUSVEG to more

fully participate in a range of formal biosecurity processes and meetings, many of which are of a scientific or technical nature. The Biosecurity Advisor has also provided regular biosecurity reports that have been communicated both internally within the industry, including to state vegetable grower organisations, the AUSVEG Board and Hort Innovation, as well as externally (i.e. publicly) via *Vegetables Australia* and other AUSVEG publications in order to reach vegetable levy payers.

The outcome from this investment has been a major change in the profile of AUSVEG in the area of biosecurity. AUSVEG participates in many aspects of the biosecurity sphere and is seen as a valuable contributor to the national biosecurity environment. Genuine dialogue now exists between AUSVEG and all jurisdictions in Australia, with AUSVEG now actively consulted for its views on biosecurity matters. AUSVEG has also been asked to provide advice to government on the Risk Analysis process, whilst its representations around the risks posed by seed borne pathogens has seen a consultative group set up that involves industry and government working together to improve biosecurity and harmonise regulations and their introduction.

AUSVEG has conducted many workshops on on-farm biosecurity around Australia using the expertise of Dr. Clayton-Greene, which have been both well-attended and received.

Participation in working groups with regulators has resulted in significant savings to levy payers through minimising regulatory impacts on trade and market access, whilst at the same time ensuring that biosecurity is serving the best interests of producers. This has been particularly the case around seed importation regulations and the fallout from the TPP incursion in Western Australia

Over the project period, the biosecurity advisor provided comment on a number of Import Risk Assessments and other technical documents of relevance to levy payers. In the case of risk assessments, whilst many of these were for non-vegetable products, they nonetheless were potential source of pests/pathogens of concern to levy payers.

Risk Assessments considered were;

- Fresh Salacca fruit from Indonesia
- Dragon Fruit from Vietnam
- Fresh strawberries from Korea
- Group risk analysis for thrips and associated viruses on all fresh produce
- Fresh Limes from Tahiti
- Table Grapes from the Sonoran region Mexico
- Apiaceous Seed
- Cucurbit seed
- Dragon Fruit from Indonesia
- Brassicaceous seed
- Pospiviroids and imported tomato seed
- Breadfruit from the Pacific
- Mealy bugs and associated pathogens on all imported fresh produce

In addition, input was made on the cucumber green mottle mosaic virus management plan and decision tree, as well as drafting the brown marmorated stink bug categorization package for PHA.

The project saw the Biosecurity consultant mentor several AUSVEG officers and has now resulted in AUSVEG and perform levy payers having a much stronger voice in biosecurity and having a strong in-house capacity to deliver biosecurity outcomes.

Monitoring and evaluation

The Biosecurity Advisor has provided input and advice, where needed, on all of the incursions listed in the outputs section of this report. The Biosecurity Advisor has more specifically been involved in activity relating to incursions that are high impact for the vegetable industry, such as the TPP incursion in Western Australia. In addition, it is notable that the vegetable industry is now contributing funds through the Plant Health Levy towards eradication of *Varroa* mite from Queensland and the ongoing Torres Strait Fruit Fly Strategy. Launch

of these initiatives have resulted from strong input from the Biosecurity Advisor during discussions with state and federal governments.

The Biosecurity Advisor also remains a member of the following working groups:

- Cost sharing Issues Resolutions Group for the EPPRD;
- Consequential losses Issues Resolutions Group for the EPPRD;
- Categorisation Issues Resolutions Group for the EPPRD; and
- Bee Pest Categorisation group (for the purposes of the EPPRD).

These are ongoing working groups and are convened by PHA as and when required, usually via teleconference.

The Advisor, represented AUSVEG, as a member of the Imported Seed Working Group. This working group is chaired by the Commonwealth and is charged with a range of actions including:

- Identifying new and emerging pest risks associated with seeds and seed pathways;
- Assessing the potential impact of those pests on Australia’s production industries;
- Contributing to the review of measures in place to manage priority seed biosecurity risks, including the verification of pest status through best practice diagnostic technologies;
- Engaging with local, national and international seed industries to achieve greater assurance on the biosecurity status of seed for sowing; and
- Identifying priorities for the review of biosecurity risks in seed and any import conditions that may be applied.

The project has undergone regular reporting and monitoring from Hort Innovation and AUSVEG to measure the project’s effect on effectiveness, reach and industry impact; the project has been exceedingly successful in these measures. The project has also undergone continuous monitoring and improvement to ensure that the industry is well-represented on key biosecurity-related issues and that the project creates an enduring legacy of biosecurity awareness, preparedness and expertise amongst members of the industry Peak Industry Body and the vegetable industry more broadly. Given the increased reputation and credibility of AUSVEG on biosecurity-related matters that can be directly attributed to Dr Clayton-Greene and the program, VG15020 has provided strong results for the vegetable industry.

Recommendations

The project has allowed AUSVEG to have a stronger say and effective representation in matters of biosecurity, particularly with engagement with the Commonwealth. This enables industry- and grower-perspective that inform key outcomes for the industry. Additionally, it has enabled AUSVEG to deliver an industry-leading biosecurity program for the industry.

Hence, the key recommendation is a continuity of the project, while in the meantime improving the skill set within AUSVEG to develop long-term capabilities and capacity in biosecurity within the industry.

In the absence of a biosecurity consultant, it is then recommended that AUSVEG limit its engagements, particularly submission of technical documents, to only key critical issues like the EPPRD matters.

Refereed scientific publications

None to report

References

APPENDIX 1

VG15023 – Consultancy Services for Strengthened Biosecurity of the Vegetable Industry – Phase 2

Appendix: A list of all 'Biosecurity brief' articles that appeared in the current project period - Vegetables Australia (VA) and Potatoes Australia (PA) magazines.

Article title	Pages	Issue published
Responding to an exotic pest incursion	0.66	VA March/April 2017
Focus on tomato-potato psyllid incursion	0.66	VA May/June 2017
Tomato-potato psyllid: Biosecurity update	1	PA June/July 2017
Tomato-potato psyllid update	1	VA July/August 2017
Bacterium detected in WA potato crop	1	PA August/September 2017
Discussing biosecurity and trade in the event of an incursion	1	VA September/October 2017
Using hindsight to better prepare for the future	1	PA October/November 2017
The unseen challenges of dealing with potential pathogens	1	VA November/December 2017
Industry biosecurity in focus at roundtable discussion	1	PA December 2017/January 2018
Tomato potato psyllid incursion: What have we learnt?	1.5	VA January/February 2018
Tomato potato psyllid incursion: What have we learnt?	1.5	PA February/March 2018
Learning from the past to prepare for the future	1	VA March/April 2018

Strengthening relationships to improve an incursion response	1	PA April/May 2018
Strengthening relationships to improve an incursion response	1	VA May/June 2018
Has Australia escaped a ‘bullet’?	1	PA June/July 2018
Putting biosecurity into perspective	1	VA July/August 2018
Focus on protecting Australia’s borders	1	PA August/September 2018
Focus on protecting Australia’s borders	1	VA September/October 2018
On-farm biosecurity: Preventing the (seemingly) inevitable	1	PA October/November 2018
On-farm biosecurity: Preventing the (seemingly) inevitable	1	VA November/December 2018
To be confirmed – one page allocated for this edition to be published in mid-December.	1	PA December 2018/January 2019

Intellectual property, commercialisation and confidentiality

No project IP, project outputs, commercialisation or confidentiality issues to report