Horticulture Innovation Australia

Final Report

Review of the Biosecurity Plan for the Apple and Pear Industry

Alison Saunders
Plant Health Australia Limited

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Level 8, 1 Chifley Square
Sydney NSW 2000
Tel: (02) 8295 2300
Fax: (02) 8295 2399

Contents

Summary

To ensure its future viability and sustainability, it is vital that the Australian apple and pear industry minimise the risks posed by exotic pests and respond effectively to plant pest threats. The plan is a framework to coordinate biosecurity activities and investment for Australia's Apple and Pear industry. It provides a mechanism for industry, governments and stakeholders to better prepare for and respond to, incursions of pests that could have significant impacts on the apple and pear industry. It aims to assist producers to evaluate the biosecurity risks within their everyday farming and business activities, formally identify and prioritise exotic plant pests (not currently present in Australia), and focus on future biosecurity challenges.

The Biosecurity Plan for the Apple and Pear Industry (v 3.0) was developed in consultation with the Industry Biosecurity Group (IBG), a select group of industry, plant health and biosecurity experts. The IBG was coordinated by Plant Health Australia (PHA) and included representatives from the Apple and Pear Australia Limited, relevant state and territory agriculture agencies and PHA.

The development of Threat Summary Tables, constituting a list of almost 250 exotic plant pests and the potential biosecurity threat that they represent to the Australian apple and pear industry was key to the industry biosecurity planning process. Each pest on that list was given an overall risk rating based on four criteria; entry, establishment and spread potential, and economic impact. In this biosecurity plan, endemic pests of biosecurity significance for the apple and pear industry were also listed. It is well understood that good biosecurity practice is beneficial for the ongoing management of endemic pests, as well as for surveillance and early detection of exotic pests.

The Biosecurity Plan for the Apple and Pear Industry also details current mitigation and surveillance activities being undertaken and identifies contingency plans, fact sheets and diagnostic protocols that have been developed for pests relevant to the apple and pear industry. This enables identification of gaps and prioritises specific actions, as listed in the Biosecurity Implementation Table. The development of this table aims to increase industry's biosecurity preparedness and response capability by outlining specific areas of action which could be undertaken through a government and industry partnership.

This plan is principally designed for decision makers. It provides the apple and pear industry and government with a mechanism to identify exotic plant pests as well as to address strengths and weaknesses in relation to the industry's current biosecurity position. It is envisaged that a formal review of the Biosecurity Plan for the Apple and Pear Industry will be undertaken in five years.

Keywords

Apple, pear, biosecurity, industry biosecurity plan, preparedness, biosecurity implementation

Introduction

The Biosecurity Plan for the Apple and Pear Industry was developed in consultation with the Industry Biosecurity Group (IBG), a select group of industry, plant health and biosecurity experts. The IBG was coordinated by PHA and included representatives from the Apple and Pear Australia Limited, relevant state and territory agriculture agencies and PHA

The Biosecurity Plan not only details exotic pest threats of Australia's apple and pear industry, but also contains information on the current mitigation and surveillance activities being undertaken and identifies contingency plans, fact sheets and diagnostic protocols that have been developed for pests relevant to the apple and pear industry.

The plan is a framework to coordinate biosecurity activities and investment for Australia's apple and pear industry and to address strengths and weaknesses in relation to industry's current biosecurity position. It provides a mechanism for industry, governments and stakeholders to better prepare for and respond to, incursions of pests that could have significant impacts on Australia's apple and pear industry.

Methodology

The Biosecurity Plan for the Apple and Pear Industry (BP) has been developed based on National Industry Biosecurity Guidelines developed by PHA and is consistent with other BPs developed or reviewed recently. Additions or modifications to the generic template were determined through the development process in consultation with Industry and Government.

The Biosecurity Plan for the Apple and Pear Industry covers the following sections:

- Executive Summary
    - Executive summary of the BP
    - Established pests identified of biosecurity significance
    - High Priority Pests (HPPs) identified which pose the greatest risk to the industry
    - Implementation options for the BP, including potential action items regarding biosecurity in the apple and pear industry
- Introduction
    - Introduction and overview of the BP and any industry specific introductory information
- Threat identification and pest risk assessment:
    - Identification and analysis of exotic plant pest threats relevant to the industry, compiled into Threat Summary Tables (TSTs)
- Risk mitigation and preparedness:
    - Pre-emptive strategies that can be adopted at the national, state/territory, regional and individual producer levels to reduce the risks posed by exotic plant pests
    - On-farm biosecurity activities recommended, including those currently being implemented within the industry, to reduce the biosecurity risk to individual growers and the industry as a whole. Note that while this section outlines on-farm activities, it is not intended to be a Farm Biosecurity Manual.
- Response management:
    - Reference to the Emergency Plant Pest Response Deed, including roles and responsibilities of the apple and pear industry and the exotic threats identified within it of relevance to the apple and pear industry
    - Reference to the overarching framework, PLANTPLAN (the National Emergency Preparedness and Response Plan)

- The general procedures, organisations and contacts responsible for handling an emergency plant pest incident within the industry

The process of developing this BP involved:

1. Identification of an Industry Biosecurity Group (IBG) (Table 1) including representatives from the apple and pear industry, governments and scientific experts.
2. Development of the TSTs of exotic pest threats to the apple and pear industry.
3. Meeting of the IBG to develop and adapt the information in the BP specifically to the apple and pear industry.
4. Coordination of consultation on drafts of the BP through the IBG. The document was distributed to additional stakeholders as required (Table 2).
5. Endorsement of the BP by the industry (through Apple and Pear Australia Limited) and governments (through Plant Health Committee).
6. Launch at an appropriate industry event, supported by media releases

Consultation with the apple and pear industry, government departments and scientific experts was sought throughout the development process to ensure that all stakeholders had input into the document. While ownership of this document resides with the apple and pear industry and PHA, all efforts will be made to ensure stakeholders will be satisfied with the final outcomes.

Table 1. Members of the Apple and Pear IBG

Name	Organisation	Area of expertise
Rohan Burgess	PHA	Biosecurity
Adrian Clay	Montague Orchards	Industry
Fiona Constable	Vic DEDJTR	Pathology
Angus Crawford	APAL	Industry
Jacky Edwards	Vic DEDJTR	Pathology
Tony Filippi	Integrity Fruit	Industry
Kyla Finlay	Vic DEDJTR	Wind dispersal
Chin Gouk	Vic DEDJTR	Pathology
Susie Green	Apple and Pear Growers SA	Industry
Barbara Hall	SARDI	Pathology
Barney Hyams	Guevgeli Orchards	Industry
Lionel Hill	DPIPWE	Entomology
Rachel Mann	Vic DEDJTR	Pathology
Peter Nimmo	QDAF	Entomology
Rebekah Pierce	NSW DPI	Industry

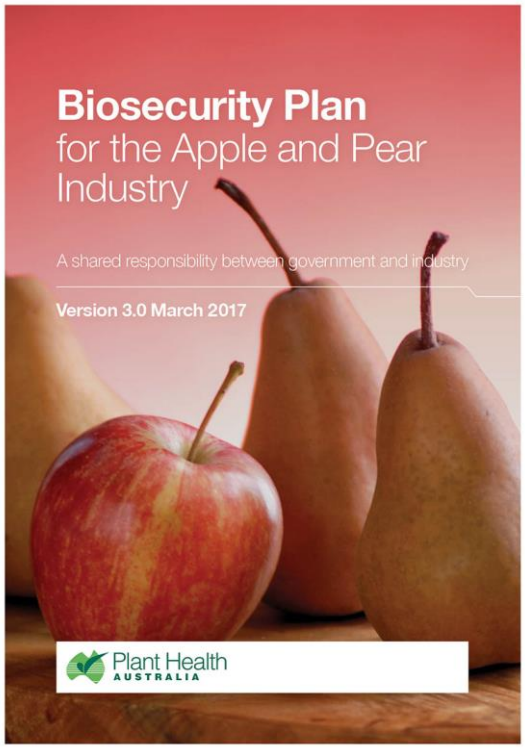
Name	Organisation	Area of expertise
Marc Poole	DAFWA	Entomology
Brendan Rodoni	Vic DEDJTR	Pathology
Alison Saunders	PHA	Biosecurity
Jenny Shanks	PHA	Biosecurity
David Williams	Vic DEDJTR	Entomology

Table 2. Scientists and others who contributed information for review of the BP

Name	Organisation	Area of expertise
Victoria Ludowici	PHA	Biosecurity

Outputs

The Biosecurity Plan for the Apple and Pear Industry was developed following research conducted by Plant Health Australia together with extensive consultation with personnel from both industry and government. The BP is currently with Apple and Pear Australia Limited for industry endorsement and will be sent to the Plant Health Committee for Government endorsement. The BP will be launched with a media release and at an industry event in 2017, With the timing and event being determined by Apple and Pear Australia Limited.



The two key outputs of the biosecurity planning process were the development a high priority pest (HPP) list for Australia's apple and pear industry (Table 3) and the development of a biosecurity implementation table (Table 4).

The HPP list identifies the highest risk pests of Australia's apple and pear industry, allowing industry to prioritise its biosecurity preparedness activities.

The biosecurity implementation table (Table 4) is the fundamental planning document that will serve to guide the industry and government in delivering its biosecurity priorities. This table aims to provide the focus and strategic direction for plant biosecurity activities relating to Australia's apple and pear industry over the next five years.

Table 3 High priority pests of the Australian apple and pear industries

Scientific name	Common name	Host(s)	Plant part affected	Overall risk
INVERTEBRATES				
DIPTERA (Flies and midges)				
Bactrocera dorsalis	Oriental fruit fly	Wide host range including apple, European pear, Asian pear, capsicum, papaya, citrus, mango, plum, cherry, apricot, peach, guava, and many other hosts	Fruit	**HIGH**
Dasineura mali	Apple leaf curling midge	Apple	Leaves, growing points	**HIGH**
Drosophila suzukii (syn. *Leucophenga suzukii*)	Spotted wing drosophila	Wide host range including cherry, Rubus, grapes, soft skinned fruits and apple and pear (when damaged)	Fruit	**HIGH**
Rhagoletis pomonella	Apple maggot	Apple, European pear, Asian pear, crab apples (*Malus* spp.), hawthorn (*Crataegus* spp.), chokeberry (*Aronia arbutifolia*), cranberry (*Vaccinium macrocarpum*), dogwood, (*Cornus florida*), *Prunus* spp., Japanese rose (*Rosa rugosa* and *Rosa carolina*), Cotoneaster	Fruit	**HIGH**
HEMIPTERA (Stink bugs, aphids, mealybugs, scale, whiteflies and hoppers)				
Dysaphis plantaginea	Rosy apple aphid	Apple, plantain, almond	Leaves, stems, fruit	**HIGH**
Halyomorpha halys (syn. *Halyomorpha mista*)	Brown marmorated stink bug	Very wide host range including apple, Asian pear, European pear, beans, maize and a range of other crops	Above ground plant parts, especially fruit	**EXTREME**
LEPIDOPTERA (Butterflies and moths)				
Cydia inopinata (syn. *Grapholita inopinata*)	Manchurian fruit moth	Apple, quince, European pear	Fruit, seeds	**HIGH**

Scientific name	Common name	Host(s)	Plant part affected	Overall risk
Lymantria dispar	Gypsy moth (Asian and European strains)	Extremely polyphagous including apple, European pear, Almond-leaved pear (*P. amygdaliformis*), European crab apple (*M. sylvestris*), chestnut, hazelnut, pecan, pistachio, walnut, *Prunus* spp., *Pinus* spp., maples, oaks, elms, box elder, birches, red gum, maize, *Rubus* spp., blueberry, spruce	Leaves, flowers	**HIGH**
Lymantria mathura	Rosy gypsy moth, pink gypsy moth	Preferred hosts are: Manchurian crab apple (*M. mandshurica*), Manchurian walnut (*Juglans mandshurica*), Mongolian oak (*Quercus mongolica*) and Japanese emperor oak (*Quercus dentata*) Apple is also affected[1]	Leaves and fruit	**HIGH-MEDIUM**
Lymantria monacha	Nun moth	Birch, beech, spruce (*Picea* spp.), pines, oaks. Also affects apple and European pear, elms apricot and raspberry	Leaves	**HIGH-MEDIUM**
POLLINATION PESTS[2]				
Tropilaelaps mercedesae	Tropilaelaps mite	Honey bees (*Apis dorsata, A. laboriosa, A. mellifera*)	Brood and adult	**HIGH**
Varroa destructor	Varroa mite	Honey bees (*Apis cerana, A. mellifera*)	Brood and adult	**EXTREME**
BACTERIA				
Erwinia amylovora	Fire blight	Apples, European pears, Asian pear, hawthorns, firethorn, medlar, loquat, quince	Leaves, stems, trunk, fruit, blossoms	**HIGH**
FUNGI				
Monilinia fructigena	Brown rot	Apple, European pear, Asian pear, quince, *Prunus* spp.	Leaves, stems, growing points, fruit	**HIGH**
Monilinia mali	Monilinia leaf blight, blossom wilt	Apple, Siebold's crab apple (*Malus sieboldii*)	Leaves, blossoms, fruit	**HIGH**

[1] OPPO/EPPO, 2005

[2] See Appendix 2 for additional information on these and other honey bee pests

Scientific name	Common name	Host(s)	Plant part affected	Overall risk
Monilinia polystroma	Asiatic brown rot	Apple, quince, pear (Asian and European species), *Prunus* spp.	Shoots, leaves	**HIGH**
Neonectria ditissima (syn. *Neonectria galligena*)	European canker, nectria canker, crotch canker, eye rot	Wide host rage affecting more than 60 species including apple, European pear (*Pyrus communis),* Asian pear (*Pyrus pyrifolia*), loquat, walnut, oak, maple, horse chestnut, alder, birch, hickory, dogwood, hazel, beech, ash, walnut, butternut, tulip tree, aspen, cherry, rose, willow, rowan tree, elm	Whole plant, trunk, stem, fruit	**HIGH**

Table 4. The proposed Biosecurity Implementation Table for the Australian Apple and Pear Industry (2016-2021)

Biosecurity theme	Action	Responsible party[3]	Due date
Building capacity and capability **(aligns with Strategy 4 of NPBS, Schedule 6 of IGAB)**	**1.** Establish a specific biosecurity reference group to help coordinate industry's future biosecurity activities and to review implementation plan annually.	Apple and Pear Industry, Plant Health Australia, State Government	2017/2018 (ongoing)
	2. Activate the EPPR levy to cover costs for Torres Strait Fruit Fly and *Varroa jacobsoni* responses	Apple and Pear Industry	2017
Plant biosecurity education and awareness **(aligns with Strategy 7 of NPBS, Schedule 6 of IGAB)**	**1.** Promote, disseminate and demonstrate biosecurity information and practices for growers, regularly through industry channels such as newsletters, field days/forums (such as future orchards scheme) and a dedicated biosecurity section on the APAL website including best on-farm biosecurity practices, such as hygiene principles, planting clean (through APFIP), managing farm visitors and raising awareness of the need to report anything unusual to the hotline and to undertake and record regular pest monitoring activities.	Apple and Pear Industry	2017-2021
	2. Investing in on-farm biosecurity planning workshops for growers	Apple and Pear Industry, Plant Health Australia	2018
	3. Develop factsheets, for high priority pests such as: Spotted wing drosophila, Brown marmorated stink bug, Manchurian fruit moth, Rosy gypsy moth, Nun moth, Asiatic brown rot, and Monilinia leaf blight and review existing fact sheets to ensure they are both up to date and provide relevant advice.	Apple and Pear Industry, Plant Health Australia, DPI Vic to provide review	2018-2019
	4. Develop a shed poster including exotic and established pests to look out for, to monitor and to report when found.	Apple and Pear Industry, Plant Health Australia, NSW DPI	2018
	5. Update Apple and Pear Orchard manual and dedicated website for biosecurity materials and practices relevant to the A&P Industry – with a focus on planting clean, managing pickers and contractors, IPM, guidelines for exporters, and including established pest and weed management and IPM context to provide more immediate relevance for growers.	Apple and Pear Industry, Plant Health Australia	2018-2019

[3] See Error! Reference source not found. for relevant industries for collaboration

Biosecurity theme	Action		Responsible party[3]	Due date
	6.	Integrate best biosecurity practice into industry Best Management Practice, Quality Assurance schemes and the Future Orchards Programme	Apple and Pear Industry, Plant Health Australia	2017
	7.	Incorporate best practice guidelines developed for Apple and Pear exporters broadly across industry (ensuring trade sensitive material is not included)	Apple and Pear Industry	2018-2019
	8.	Raise awareness of the AHBIC CoP for grower who utilise managed hives for pollination as a lever for requiring high health (biosecure) hives	Apple and Pear Industry	2017
	9.	Investigate integrating biosecurity planning principles into whole farm planning workshops to achieve increased adoption	Plant Health Australia	2017
Preparedness and Response **(aligns with Strategy 3 of NPBS, Schedule 7 of IGAB)**	**1.**	Update contingency plan for Fire blight with consideration for the national and cross sectoral context	Apple and Pear Industry, State Departments (Victoria), Plant Health Australia	2017-2018
	2.	Develop a contingency plan for: - Manchurian fruit moth - Rosy apple aphid - Apple leaf curling midge - Oriental fruit fly - Spotted wing drosophila - Apple maggot - European canker - *Lymantria* spp. (incl. Rosy gypsy moth, Nun moth, Gypsy moth) - *Monilinia* spp.	Relevant Industries, Government, Plant Health Australia	2019-2021 or as opportunities arise
	3.	Disseminate the cross-sectoral contingency plan for Brown marmorated stink bug upon its release	Apple and Pear Industry, Commonwealth	2017
	4.	Review potential for pre-emptive pesticide permits to allow rapid control of HPPs in the event of a pest incursion and identify trial work required to acquire a permit.	Apple and Pear Industry, Plant Health Australia, APVMA	2017/18

Biosecurity theme	Action	Responsible party[3]	Due date
	5. Preliminary analysis suggests the below pests are managed overseas using chemicals and emergency permits may be developed for the control of these pests in the event of an incursion. - Oriental fruit fly - Spotted wing drosophila - Brown marmorated stink bug - Apple maggot - Gypsy moth - Fire blight - European canker - Rosy apple aphid - Nun moth - Brown rot - Rosy gypsy moth - Monilinia leaf blight	Apple and Pear Industry. (There may be opportunities to collaborate with other industries, but this would be discussed in consultation with APVMA	2019-2020
	6. Engage with cross sectoral initiatives to improve preparedness for and response to Spotted wing drosophila	Relevant Industries, Government	As opportunities arise
	7. Engage with preparedness and response activities developed for bee pests such as Varroa e.g. simulation activities and National Bee Pest Surveillance and remain up to date with the latest RD&E about optimal pollination and alternative pollinators	Apple and Pear Industry, Pollinator reliant industries, Australian Honey Bee Industry, Government, Plant Health Australia	
	8. EPPRD training for Apple and Pear Industry, Board and Executives and those with Emergency response functions	Apple and Pear Industry, Plant Health Australia	2017
	9. Provide updated information and awareness in relation to what happens once you have reported something unusual to the plant pest hotline across jurisdictions	Plant Health Australia, State Government	2017
	10. Pending progress with Property Identification Codes industry to consider the development of a grower register (including nursery suppliers) to have available in the event of an incursion. Further to this register, industry to consider the development of a response management plan to identify responsibilities and contacts in the event of an incursion	Apple and Pear Industry, Plant Health Australia	2018-2019

Biosecurity theme	Action		Responsible party[3]	Due date
Surveillance **(aligns with Strategy 2 of NPBS, Schedule 4 IGAB)**	**1.**	Development of a surveillance strategy for high priority pests (exotic and established) of the Apple and Pear Industry. The strategy is to be developed as a collaborative exercise between relevant state departments and industry to understand what surveillance (both targeted and general) is currently taking place – and to identify the best path forward to achieve a robust surveillance program. Attention to surveillance tools, data capture, diagnostic a training needs wold also need to be considered in such a strategy.	Government, Apple and Pear Industry	2018-2019
	2.	Hold an Apple and Pear National Surveillance Strategy workshop to identify what surveillance is occurring nationally, to consider gaps and to prioritise surveillance activities for industry and government in the future	Apple and Pear Industry, State Government, SPHPS, PHA	By 2018
	3.	Consider a national approach to surveillance strategies across all plant based industries given the significant overlap across industry and community sectors	Commonwealth, Plant Health Australia	2017-2019
	4.	Surveillance to be coordinated for the following pests (taking into account the need to include other hosts and possibly other industries that have pests in common): - Rosy apple aphid - Manchurian fruit moth - Rosy gypsy moth - Monilinia leaf blight - Apple leaf curling midge - Brown rot - Fire blight - Apple maggot - European canker - Spotted wing drosophila - Asiatic brown rot - Nun moth - Brown marmorated stink bug - Gypsy moth (covers both European and Asiatic species)	Relevant Industries, State Government, SNPHS	Ongoing further to development of the Apple and Pear Surveillance Strategy (2018)

Biosecurity theme	Action	Responsible party[3]	Due date
	5. Undertake targeted surveillance for the following *established* pests of market concern for the apple and pear industry: Queensland fruit fly (China, Taiwan, Vietnam), Lesser Queensland fruit fly (China, Taiwan), Mediterranean fruit fly (China, Taiwan, Vietnam), Fullers Rose Weevil (China), Codling moth (China, Taiwan), Woolly apple aphid (China), Apple mussel scale (China), Garden weevil/Vine calandra (China, Vietnam), Light brown apple moth (China, Taiwan, Vietnam), Plague thrips (China, Taiwan), Pear scale (China), Brown rot disease (China), Western flower thrips (Taiwan), San Jose scale (Vietnam), Oriental fruit moth (Vietnam)	Apple and Pear Industry	Ongoing further to development of the Apple and Pear Surveillance Strategy (2018)
	6. Consider including exotic pests as part of the training for Third Party Accreditation for surveillance by crop scouts/monitors	Apple and Pear Industry, Commonwealth, Plant Health Australia (work with other industries that also undertake this training e.g. citrus)	2018
	7. Consider development of surveillance app. of APAL's HPPs – potentially capturing this data through AusPestCheck	Apple and Pear Industry	2018-2021
	8. Support the National Bee Pest Surveillance Program (NBPSP)	AHBIC, Pollinator Dependent, Industries, HIA, PHA	2016-2021

Biosecurity theme	Action	Responsible party[3]	Due date
Diagnostics **(aligns with Strategy 5 of NPBS, Schedule 4 of IGAB)**	**1.** To request feedback from SPHD (Sub-Committee on Plant Health Diagnostics) regarding the diagnostic priorities, taking into consideration diagnostic capability, surveillance needs for *infield*, high throughput and definitive diagnostics, and opportunities for collaborative approaches. Where funding is limited consideration of opportunities for residential approaches to establishing baseline diagnostics would also be useful. Guidance from SPHD would provide significant assistance to the Apple and Pear Industry in deciding priorities	Apple and Pear Industry, SPHD	2017
	2. Work with SPHD to finalise draft National Diagnostic Protocols for: - Rosy apple aphid (draft) - Gypsy moth (covers both European and Asiatic species) (draft) - Fire blight (draft)	Relevant Industries, SPHD, Government	Pending feedback from SPHD regarding current position in terms of other priorities
	3. Work with SPHD to develop National Diagnostic Protocol for: - Brown marmorated stink bug - Manchurian fruit moth - Apple leaf curling midge - *Lymantria* spp. (incl. Rosy gypsy moth, Nun moth) - Asiatic brown rot - Monilinia leaf blight - Nashi scab (hybrid strains - exotic)	Relevant Industries, SPHD, Government	Pending feedback from SPHD regarding current position in terms of other priorities
	4. Work with SPHD to review National Diagnostic Protocol for: - Brown rot	SPHD, Government, Apple and Pear Industry	Pending feedback from SPHD regarding current position in terms of other priorities
	5. Develop an infield diagnostic test to differentiate between exotic and established *Monilinia* spp. (cross-sectoral)	State government, Apple and Pear Industry	Pending government priorities

Biosecurity theme	Action		Responsible party[3]	Due date
Established pests and weeds **(aligns with Strategy 6 of NPBS, Schedule 5 of IGAB)**	**1.**	Raise industry awareness of pests and weeds of biosecurity significance, and demonstrate how best biosecurity practices has direct relevance to day to day operations for pests already within Australia	Apple and Pear Industry	2018-2019
	2.	Document production practices that are required to address market access pests (APAL export document or updated biosecurity manual)	Apple and Pear Industry	2018-2019
Research and Development Extension (RD&E) **(aligns with Strategy 8 of NPBS, Schedule 8 of IGAB)**	**1.**	Prioritise biosecurity RD&E annually to feed into HIA plant biosecurity RD&E implementation priorities	Apple and Pear Industry	Annually
	2.	Investigate trapping options for spotted wing drosophila and brown marmorated stinkbug	Cross industry initiative	2018/19 as cross industry collaborative opportunities arise
	3.	Invest in alternate pollinator/optimal pollination R&D as a preparedness initiative for bee pests	Apple and Pear Industry, P&F NZ, HIA Pollination Fund, Plant Health Australia	2017-2019
	4.	Consider RD&E to develop an internationally recognised fruit fly control protocol using cold disinfestation (via secure CACS)	Apple and Pear Industry, leading exporters, National Fruit Fly Council, HIA Fruit Fly Fund	2018
	5.	Support and monitor fruit fly RD&E initiatives either underway or planned (e.g. SITplus initiative and area wide management, Qfly and Medfly disinfestation, investigating support for more flexible trade especially with Asia, and more challenging quarantine requirements) that are relevant to Apple and Pear Industry	Apple and Pear Industry, HIA Fruit Fly Fund	Ongoing
	6.	Monitor NFFC website and newsletter to ensure up to date with outcomes from current fruit fly investments	Apple and Pear Industry, National Fruit Fly Council	Ongoing
	7.	Document and disseminate current/future Integrated Pest Management priorities in the industry	Apple and Pear Industry	2017-ongoing

Biosecurity theme	Action		Responsible party[3]	Due date
	8.	Varietal assessment to consider pest resistance (Woolly Aphid)	Apple and Pear Industry	Underway
	9.	Review and monitor biocontrol agents and earwig predation of Woolly aphid	Apple and Pear Industry	Underway
Legislative and regulatory issues **(aligns with Strategy 1 of NPBS)**	**1.**	Raise industry awareness in relation to everyone's individual legal responsibilities according to State legislation (e.g. General Biosecurity Obligation/Duty etc.) through industry articles, or an updated manual	Apple and Pear Industry, Plant Heath Australia	2017
	2.	Review and then raise awareness of how each state/territory deals with reporting of exotic and other notifiable pests, outlining individual responsibility	Apple and Pear Industry, State governments, Plant Heath Australia	By 2018
	3.	Support the initiation of Property Identification Codes nationally for plant based industries as a means to enable traceability and information flow in the event of a biosecurity incursion	Apple and Pear Industry, State governments, Plant Heath Australia	2017-2018
	4.	Review and then raise industry awareness of how each state/territory deals with neglected orchards as a biosecurity issue	Apple and Pear Industry, State government, Plant Heath Australia	By 2018

Outcomes

In delivering this project, the Australian apple and pear industry has an improved understanding of its exotic pest threats, and have a clear path forward in improving biosecurity preparedness.

Developing a positive biosecurity culture within an industry is an ongoing commitment for all agricultural industries and it is really encouraging to see the Apple and Pear Australia Limited demonstrate such leadership. This plan demonstrates that commitment from industry and is a key outcome from this project.

Evaluation and Discussion

The biosecurity planning process for the apple and pear industry was a very positive exercise where industry, government and researcher stakeholders worked together to understand the industry's biosecurity threats and to develop a plan to work together to address or mitigate the risks that were identified.

The plan provides a clear line of sight towards national objectives for improved biosecurity, and it is hoped it will provide clear input into annual research and development priorities for the apple and pear industry. At the same time, if fully implemented, the activities identified will provide opportunities for growers to engage in best biosecurity practice on farm.

It is encouraging to note that cross sectoral initiatives identified for attention in the plan specifically in relation to Brown Marmorated Stink Bug and *Xylella fastidiosa* are already underway and the Apple and Pear Australia Limited will be directly involved.

The revision of this biosecurity plan has been part of a pilot program aimed to develop a new and improved biosecurity planning model. As such the biosecurity implementation table is given primacy in the document. The will be reviewed annually to ensure relevance.

Established pests of biosecurity significance have also been added to this plan as it is well understood that improved biosecurity practice will be beneficial in managing pests that are currently present in Australia, at the same time as mitigating the risk of entry, establishment or spread of exotic pests.

(For further detailed discussion, refer to the appended Biosecurity Plan for the Apple and Pear Industry 2017

Recommendations

The development of the BP provides a blueprint for biosecurity requirements within Australia's apple and pear industry. The identification of existing biosecurity resources and the prioritisation of biosecurity threats provides an opportunity for the industry and governments to focus future biosecurity investment. The BP process also highlights where potential gaps in biosecurity capacity and capability can be improved. Recommendations from this project that Australia's apple and pear industry wish to consider include:

- Establishing a biosecurity reference group to help coordinate industry's future biosecurity activities and to review implementation annually.
- Develop fact sheets for all High Priority Pests.
- Update the Apple and Pear Orchard Manual.
- Promote, disseminate and demonstrate biosecurity information and practices for growers, regularly through industry channels such as newsletters, field days/forums and include a dedicated biosecurity section on the Apple and Pear Australia Limited website including best on-farm biosecurity practices.
- Develop contingency plans for all High Priority Pests.
- Engage with preparedness and response activities developed for bee pests
- Development of a surveillance strategy for exotic and established High Priority Pests, collaborating with other industries and jurisdictions where relevant.
- Work with SPHD to finalise, develop or review National Diagnostic Protocols for all High Priority Pests
- Support and monitor fruit fly RD&E initiatives either underway or planned that are relevant to the apple and pear industry
- Conduct EPPRD training for the Apple and Industry, Apple and Pear Australia Limited Board and Executives and those with Emergency Response Functions
- Raise industry awareness in relation to everyone's individual legal responsibilities according to state legislation.

Scientific Refereed Publications

Not applicable

Intellectual Property/Commercialisation

Industry biosecurity issues can be sensitive in nature. For this reason, the planning document will be made available electronically to members of Apple and Pear Australia Limited, or as a hard copy by contacting Plant Health Australia (02 6215 7700).

References

Plant Health Australia Ltd (2016) Biosecurity Plan for the Apple and Pear Industry (Version 3.0 - 2017). Plant Health Australia, Canberra, ACT.

Appendices

Plant Health Australia Ltd (2017) *Draft Biosecurity Plan for the Apple and Pear Industry (Version 3.0 – May 2016).* Plant Health Australia, Canberra, ACT.