National bee pest surveillance workshop

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Plant Health Australia

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MT11034

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Final Report

National Bee Pest Surveillance Workshop

HAL project number MT11034

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Plant Health Australia

12th October 2012

Horticulture Australia Limited Project Number: MT11034

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Report statement:

This report summarises the outcomes of project MT11034 to hold a 2-day National Bee Pest Surveillance Workshop.

Acknowledgement:

PHA would like to recognise all who have contributed financially and in-kind to this project, including

- Horticulture Australia Ltd

12th October 2012

Disclaimer:

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1. Introduction

Background

In global terms, Australian honey bee and plant industries are fortunate to experience relative freedom from many pests (invertebrates, pathogens and diseases) that can adversely affect them. Maintenance of our plant health status is vital to retain existing trade opportunities, negotiate access to new overseas markets and in terms of impact of honey bee pests on pollination, ensure the profitability and viability of pollination responsive plant industries.

Industry biosecurity is the protection from risks posed by pests to industries through actions such as preparedness, surveillance, exclusion, eradication, and control. No quarantine system, no matter how efficient, can ensure Australia's industries are totally protected from exotic pests and industry biosecurity is therefore a shared responsibility involving governments, industry, and the general community. For the honey bee industry, several exotic pests have either recently become established in Australia (e.g. small hive beetle and Asian honey bee) or been detected at ports of entry (e.g. the Giant honey bee).

In addition to recently established pests, the honey bee industry has a number of key exotic pest threats that would have significant impact on production of honey and bee products if they entered and became established in Australia. Importantly, these pests would have a major impact on the delivery of pollination services, as well as on the presence of feral bees which provide a significant contribution to incidental pollination. One such pest, Varroa mite, is present in all major beekeeping areas of the world except Australia. Based on the experience in other countries, if left unmanaged a Varroa mite infestation will destroy a hive completely within 2-3 years (Keogh *et al.* 2010). Given this, it is likely that feral honey bee populations in Australia will be wiped out should Varroa mite become established, therefore increasing the reliance and need for paid pollination services by many plant industries.

Due to the nature of feral honey bee movement within regions, potentially between hives through robbing of honey, and particularly through the movement of hives through commercial pollination services, it is anticipated that a pest such as Varroa mite would spread very quickly once an incursion occurs into Australia. For eradication to be considered technically feasible, an incursion would need to be detected early i.e. before the pest had a chance to spread widely and become established in a large number of bee colonies (Honey bee industry and Pollination Continuity Strategy Steering Group, 2011).

Surveillance is therefore considered a key component of biosecurity, especially around areas that are considered high risk sites for the entry of new swarms that may carry Varroa mite such as international ports.

For the past 12 years a national program of surveillance for bee pests has operated at some key ports of entry through deployment of sentinel hives (Barry *et al.* 2010). Funding and support for the program over this period has been provided by Department of Agriculture, Fisheries and Forestry (DAFF) with in-kind support provided by state government jurisdictions and beekeepers.

Funding to run this program was originally provided by DAFF to Animal Health Australia. As honey bee pests and diseases are now managed under the Emergency Plant Pest Response Deed (EPPRD) through Plant Health Australia (PHA) the management of the National Sentinel Hive Program was also moved to PHA in January 2012. However, the remaining DAFF funding for this program will end by June 2013.

Sentinel hives are only one method of surveillance for bee pests and it should be noted that they are not useful for detection of pest bees such as Asian honey bees. Additional techniques for the detection of pest bees and bee pests such as sweep netting, remote surveillance of hives, and industry contribution through programs such as BeeForce, as well as bait boxes need to be explored as complimentary surveillance techniques.

This workshop with key stakeholders effectively determined what the National Bee Pest Surveillance Strategy should contain for each state and territory, as well as how this national surveillance strategy it will be funded and implemented in the future.

Given the benefits for pollination responsive industries and the honey bee industry, this workshop enabled improved surveillance activities at high risk ports of entry and improved early detection methods of Varroa mites and other bee pests.

Literature reviewed

Barry S, Cook D, Duthie R, Clifford D, Anderson A (2010) Future Surveillance Needs for Honeybee Biosecurity RIRDC Publication 10/107.

Birtchnell M and Gibson M (2008) Flowering Ecology of Honey-producing Flora in South-East Australia RIRDC Publication 08/098.

Honeybee industry and Pollination Continuity Strategy Steering Group (2011) A honeybee industry and pollination continuity strategy should Varroa become established in Australia.

Keogh RC, Robinson AP and Mullins IJ (2010) The Real Value of Pollination in Australia RIRDC Publication 10/081.

Paton DC (2008) Securing long-term Floral Resources for the Honeybee industry RIRDC Publication 08/087.

Aims and objectives

The aim of the workshop was to hold a 2-day National Bee Pest Surveillance Workshop to inform decision makers and funders what the National Bee Pest Surveillance Program should contain, and how it may be funded, post June 2013.

2. Method and activities

This 2-day workshop brought together the Australian Honey Bee Industry Council (AHBIC), DAFF, Rural Industries Research and development Corporation (RIRDC), representatives from every state and territory government, as well as honey bee scientists and pollinator reliant industries to determine what the National Bee Pest Surveillance Program should contain and how it could be funded. This workshop had benefits for both the honey bee industry and plant industries dependent on honey bees for pollination.

This workshop was held over 2 days at the Park Royal Hotel at Melbourne Airport. The first day included guest speakers on topics that covered various surveillance strategies that would form part of a national surveillance strategy, as well as a summary of current state and territory surveillance strategies. This state and territory summary also provided scope for what a future surveillance strategy could contain based on risks and detection data.

The second day covered what research would be required as part of a surveillance program, as well as individual state/territory surveillance strategies and funding regimes.

The meeting was coordinated and chaired by PHA. PHA also provided the secretariat responsibilities including workshop organisation and bookings, workshop program, liaising with speakers, writing minutes and distribution of correspondence to all participants. The workshop agenda has been attached to this report. The agreed recommendations from the workshop have been included in the Recommendations section of this report.

PHA is continuing to work with the key stakeholders to enact the outcomes of this workshop to help deliver a National Bee Pest Surveillance Program post June 2013.

3. Results

The workshop helped deliver a funding model which has allowed the National Bee Pest Surveillance Program to continue to operate post June 2013.

PHA is also using the recommendations from this workshop to implement the changes of what the surveillance strategy should contain for full adoption by June 2013 (under the new funding model).

4. Discussion

It is estimated that of Australia's $30 billion agricultural production per annum, approximately $1.8 billion is responsive to honey bee pollination. Plant industries differ in their responsiveness, with almonds and some vegetable seed production being entirely dependent on honeybee pollination while industries such as papaya and some citrus have only a small reliance (or none at all) on honey bee pollination (Keogh *et al.* 2010).

Industries with high reliance on honey bees for pollination are more likely to recognise the need for and use of paid pollination services. Industries with less clear reliance (e.g. pear and stonefruit) may receive significant benefits from incidental pollination provided by feral bees, and these industries are more likely to be negatively affected by the introduction of an exotic pest such as Varroa mite that destroys feral bees in native and urban environments.

This workshop, which brought together industry representatives, government officials and key stakeholders, helped determine what the National Bee Pest Surveillance Program will contain, and how it will be funded, post June 2013. This strategy will ultimately improve the chance of eradication of a new pest introduction before it becomes established and spreads to production areas.

The outcomes from this workshop have helped formalise at a national level targeted surveillance activities, and the potential to combine the National Bee Pest Surveillance Program with other existing surveillance activities such as BeeForce and remote sensing of bee hives.

Benefits of this project

Outcomes from this workshop benefit all pollination responsive industries and the honey bee industry at an industry level. It has effectively delivered a continued funding model for the National Bee Pest Surveillance Program post June 2013, and widened the scope of the surveillance strategy to target bee pests and pest bees. This will increase the chance of early detection of bee pests or pest bees, thus increasing the chances of mounting an effective eradication program.

While adoption of these outcomes is not always taken up by individual producers or beekeepers, dissemination of information on the program will strengthen the importance of the surveillance activities. A range of communication channels will be used for the delivery of messages including development of press releases in the rural media, articles in industry newsletters, industry conferences, and updates at PHA industry meetings.

5. Action Items of Workshop

The workshop delivered 9 recommendations and action items as listed below:

Action Item 1: That AHBIC recommend to the Directors of the Honey Bee Contingency Fund the expenditure of $75,000 p.a. for the 2013/2014 and 2014/2015 financial years to assist in the funding and management of the National Bee Pest Surveillance Program administered by Plant Health Australia (PHA).

Action Item 2: That HAL contribute another $75,000 p.a. starting 1st July 2013 to assist in the funding and management of the National Bee Pest Surveillance Program administered by Plant Health Australia.

Action Item 3: That PHA writes a report outlining current surveillance activities for each jurisdiction, as well as detail future surveillance activities (as of 1st July 2013) as agreed to with each jurisdiction by June 2013.

Action Item 4: That the Honeybee Advisory Committee or the Pollination Program looks into funding two key areas of research that is of relevance to the National Bee Pest Surveillance Program. This includes a species specific PCR laboratory identification for Tracheal mite (*Acarapis woodi*) and determining the levels of confidence in the absence or presence of mites in sentinel hives.

Action 5: That PHA pursue funding with Rural Development Corporations for a coordinator position (>0.5FTE) to coordinate the National Bee Pest Surveillance Program for the first year of the program (2013-2014).

Action 6: That PHA distributes the Queensland Bee Surveillance Program document to each jurisdiction by the end of August 2012.

Action 7: That PHA distributes the Beeforce final report to each jurisdiction by the end of August 2012.

Action 8: PHA to work with HAL and RIRDC on preparing a communiqué for CoxInall by the end of October 2012 regarding the development of this surveillance strategy and how this program is progressing on behalf of pollinator reliant industries and the honey bee industry.

Action 9: That PHA, in conjunction with Cheryl McCarthy (University of Southern Queensland) and the remote surveillance of hive working group, investigate the possibility of trialling a number of remote surveillance bait hives in selected states/territories.

6. Acknowledgements

PHA would like to acknowledge the significant contribution of those involved with the development and implementation of this workshop, including in-kind support from the following:

- Australian Honey Bee Industry Council;
- Surveillance coordinators from state and territory government agencies (Vic, SA, WA, Qld, NSW, NT, Tas) for providing presentations;
- Presenters to the workshop
    - Simon Barry and Peter Caley (CSIRO)
    - Sabine Perrone (BSASP Pty Ltd)
    - Cheryl McCarthy (University of Southern Queensland)
    - Gary Kong (PB CRC)
- PHA Membership;
- Horticulture Australia Ltd (matched levy funding)

Agenda

Plant Health AUSTRALIA

Day 1: National Bee Pest Surveillance Workshop

Park Royal Hotel, Melbourne Airport

Tuesday 3rd of July 2012

TIME	TOPIC	PRESENTER
10:00 am	Morning tea on arrival	
10:30	Workshop introduction and participant introduction	Rod Turner, Chair
11:00	National bee pest surveillance program	Sam Malfroy and Glynn Maynard
11:30	Remote surveillance of hives	Cheryl McCarthy
12:00	AHB smart traps	Gary Kong
12:30	Lunch	
1:30	BeeForce	Sabine Perrone
2:00	Port risk assessment of bee pests and pest bees	Simon Barry
2:30	20AA port interception data	Rod Turner, Chair
2:50	VIC surveillance program	Russell Goodman
3:10	NSW surveillance program	Nick Annand
3:30	QLD surveillance program	Mark Cozens
3:50	Afternoon tea	
4:10	NT surveillance program	Vicki Simlesa
4:30	WA surveillance program	Bill Trend
4:50	SA surveillance program	Michael Stedman
5:10	TAS surveillance program	TBC
5:30	Close of Day 1	Rod Turner

Agenda

Day 2: National Bee Pest Surveillance Workshop

Park Royal Hotel, Melbourne Airport

Wednesday 4th of July 2012

TIME	TOPIC	PRESENTER
8:30 am	Coffee and tea on arrival	
9:00	Summary of Day 1	Rod Turner, Chair
9:30	Research required for a future surveillance program	All
10:30	Morning tea	
11:00	State surveillance programs and future funding arrangements	All
12:30	Lunch	
1:30	State surveillance programs and future funding arrangements	All
3:00	Afternoon tea	
3:30	Summary of workshop	Rod Turner, Chair
4:00	Close of meeting	

Please Note: We have booked a room at the Park Royal for a 3-course meal on the night of Tuesday 3rd. This will be free of charge for all workshop participants; however, each person will be required to pay for their own drinks. **Please confirm attendance and any dietary requirements by 22nd June**. If you need any more information please feel free to contact me.

Sam Malfroy – Project Officer
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Attendees

Representative	Organisation	Attendance on the 3rd and 4th of July
Rod Turner (Chair)	Plant Health Australia	Yes
Sam Malfroy (Secretariat)	Plant Health Australia	Yes
Felicity Andriunas	Plant Health Australia	Yes
Lindsay Bourke	AHBIC	Yes
Stephen Ware	AHBIC	Yes
Ian Zadow	AHBIC	Yes
Peter McDonald	AHBIC	Yes
Rod Pavy	AHBIC	No
Trevor Weatherhead	AHBIC	Yes
Dave Alden	RIRDC	Yes

Kim James	HAL	Yes
Michael Hornitzky	Chair, Honey Bee Advisory Committee	Yes
Glynn Maynard	DAFF	Yes
James Walker	NAQS	Apology
Gerald Martin	Chair, Pollination Committee	Yes
Sabine Perrone	Consultant and BeeForce principal scientist	Yes
Cheryl McCarthy	Research Fellow (remote sensing of beehives), USQ	Yes
Simon Barry	Program Leader, Environmental Informatics, CSIRO	Yes
Peter Caley	CSIRO	Yes
Sharyn Taylor	CRC Plant Biosecurity	Yes
Gary Kong	CRC Plant Biosecurity	Yes

Nick Annand	NSW Surveillance team	Yes
Doug Somerville	NSW Surveillance team	Apology
Tim Burfitt	NSW Surveillance team	Yes
Mark Cozens	QLD Surveillance team	Yes
Vicki Simlesa	NT Surveillance	Yes
Bill Trend	WA Surveillance	Yes
Michael Stedman	SA Surveillance	Yes
Andrew Bishop	TAS Surveillance	Yes
Russell Goodman	VIC Surveillance	Yes
Ben Brown	Almonds	Yes
Annie Farrow	Apple and Pear	Yes
Ken Gaudion	Cherries	Yes

John Tyas	Avocado	Apology
John Moore	Summerfruit	Apology
Hugh Gurney	AUSVEG	Yes
Kevin Clayton-Greene	AUSVEG	Yes
Virginie Gregoire	Canning Fruit	Yes
Dianne Fullelove	Melon	Apology
Joanne Thomas-Ward	Onion	Apology
Bill Fuller	Australian Seed Federation	Apology