The biosecurity challenge – many pests, many pathways
Australian climate
Remoteness index

- Population: 24,700,000
- Coastline: 60,000km
- 71 ports
Diversity of crops, diversity of growers

- Many production systems – large broadacre, small market garden holdings
- Across each plant industry diverse range of growers
  - Tech savvy, market focussed production, QA integrated into production ➤ smaller or opportunistic growers
  - Single monocultures ➤ diversity of crops on each property
- No single method of providing information
  - Web, social media
  - Print
  - Face to face
- Range in the type of biosecurity information needed
  • Basic farm hygiene ➤ specific and detailed information on key pests, risks and pathways
Many pests

- 373 High Priority Pests across 44 PHA plant industry members
- In 2016 – 79 new detections, extensions of range or new host records in Australia
- There are currently 7 cost shared responses underway
  - Chestnut blight
  - Banana Freckle
  - Khapra beetle
  - Varroa (*V. jacobsoni*)
  - Giant pine scale (Transition to management)
  - Tomato potato psyllid (Transition to management)
  - Torres Strait Fruit Fly - ongoing
Many pathways

Tropical Cyclones
1970 to 2006
People and freight.....

[www.flightradar24.com](http://www.flightradar24.com)
Air traffic over Australia 4 pm Wed

[www.marinetraffic.com](http://www.marinetraffic.com)
Marine traffic 4 pm Wed
Australia’s biosecurity system and the role of farm biosecurity
Australia’s biosecurity system

Emergency Response Arrangements

Emergency Plant Pest Response Deed
- Facilitate immediate reporting
- Facilitate early response
- Parties who fund responses have a role in decision making
- Defined funding responsibilities
- Signed by Australian government, all state and territory governments and 33 plant industries
- Parties have obligation to ongoing process of risk mitigation at national, regional and premises levels

PRE-BORDER
Department of Agriculture and Water Resources
- Risk analysis and import approvals
- Regional biosecurity
- Export market access negotiations
- Offshore assessment, audit and verification
- International standards development
- Capacity building in overseas countries
- Gathering global pest intelligence

AT THE BORDER
Department of Agriculture and Water Resources
- Inspection and monitoring
- Enforcement and compliance
- Implementation of risk management system
- Policy implementation
- Education and awareness
- Monitoring and surveillance

POST-BORDER
Department of Agriculture and Water Resources, state and territory governments, plant industries, PHA, producers and community
- Monitoring and surveillance
- National coordination and response to pest incursions
- Domestic quarantine movement restrictions
- Pest management
- Breeding of resistant varieties
- Emergency preparedness activities
- Simulation exercises
- Education and awareness
- Biosecurity planning
- Farm biosecurity
Farm Biosecurity

‘Set of measures designed to protect a property from entry and spread of pests and diseases’
Essentials for farm biosecurity

Identification and minimisation of biosecurity risks

- **Farm inputs** – plant(ing) material, fodder, fertiliser
- **People, vehicles and equipment** – when, how, why, how many
- **Production practices** – crop monitoring, farm hygiene, fencing
- **Farm outputs** – post-harvest storage and monitoring, transport
- **Feral animals, plants and weeds** – volunteer plants, exotic weeds, weeds as pest reservoirs, feral animals as pest carriers
- **Training, planning and recording** – record keeping
  - Information used to train staff, assist create farm biosecurity plans
National initiatives

Leading examples for plant industries

- Grains Farm Biosecurity Program – PHA, Grain Producers Australia and state govts
- Farm Biosecurity Program – Plant Health Australia (PHA) and Animal Health Australia
- Biosecure HACCP – Nursery and Garden Industry Australia
- CropSafe – Agriculture Victoria
- Vegetable Biosecurity Program – AUSVEG, PHA and Hort Innovation
- Citrus Biosecurity Program – Citrus Australia and Hort Innovation
- National Bee Biosecurity Program – PHA, Australian Honey bee Industry Council, Australian govt and state govts
Importance of industry-led initiatives

• Provides buy-in
• Allows industry to develop and deliver information and systems tailored to their needs
• Provides resources to focus on biosecurity and identification of industry needs
  – RRD4P – “Improving plant pest management through cross-industry deployment of smart sensors, diagnostics and forecasting”
  – Seven Australian Research and Development funding bodies, led by Hort Innovation
  – Initiated and driven by the AUSVEG Biosecurity Program – Jessica Lye and Callum Fletcher
Drivers for farm biosecurity

The push

- Too many pests, pathways and risks for one agency to manage
- Biosecurity underpins many of our trade arrangements – domestic and international
- Commonwealth funded reviews – shared responsibility; One Biosecurity
- Emergency Plant Pest Response Deed - obligations
- Legislative changes – General Biosecurity Obligation/Duty
  - ‘Ought to know’ about a biosecurity risk – New South Wales
  - Expectation to ‘assess and manage risks...to ensure they do not spread a pest, disease or contaminant’ – Queensland
Drivers for farm biosecurity

The pull

• Incentives to improve business
  – New pests can increase production costs and complexity;
  – Markets are demanding pest free products (at a country, regional or consignment level)
  – Pest detections can stop or interrupt trade
• Industry (growers, consultants) know their businesses better than anyone else
  – Best placed to undertake surveillance, exclusion, mitigation measures
• Market access
  – Absence data; by-catch
Changes in farm biosecurity

Source: KG2 Farm Biosecurity Research Report

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<thead>
<tr>
<th></th>
<th>2010</th>
<th>2013</th>
<th>2017</th>
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<tbody>
<tr>
<td>Controlling weeds</td>
<td>85%</td>
<td>90%</td>
<td>95%</td>
</tr>
<tr>
<td>Keeping records</td>
<td>60%</td>
<td>70%</td>
<td>80%</td>
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<tr>
<td>Inspect on purchase</td>
<td>40%</td>
<td>50%</td>
<td>60%</td>
</tr>
<tr>
<td>Restrict access to property</td>
<td>50%</td>
<td>60%</td>
<td>70%</td>
</tr>
<tr>
<td>Clean machinery/equipment</td>
<td>70%</td>
<td>80%</td>
<td>90%</td>
</tr>
<tr>
<td>Report anything unusual</td>
<td>30%</td>
<td>40%</td>
<td>50%</td>
</tr>
<tr>
<td>Isolate new plant material</td>
<td>20%</td>
<td>30%</td>
<td>40%</td>
</tr>
</tbody>
</table>
Benefits from implementing farm biosecurity

Source: KG2 Farm Biosecurity Research Report

41% had implemented an action suggested in farm biosecurity material
Current gaps in farm biosecurity

Surveillance

• Governments and industry peak bodies have the need to collect data for evidence of absence – depending on supply chain, individual businesses don’t see this need
  – Their data is not nationally aggregated (yet)
  – Individuals don’t see their role in a national picture
• Many plant producers use consultants
  – Few current incentives to provide surveillance data or discuss surveillance protocols – considered to be IP; client in-confidence
  – Business model requires payment for services – lack of interest in providing data for ‘industry good’
• Issues with recognising the value of industry data (international and national standards)
The gaps continued

**Preparedness**

- While industry (peak body and producers) are aware of the threat of exotics, business drivers still not strong enough to implement change
- Reasons for not implementing farm biosecurity:
  - costly insurance for something that may not eventuate
  - something inevitable that nothing can be done about
  - something the government is responsible for
- ‘Normalisation’ of biosecurity practices occur often only after a major incursion
- Significant impact on livelihoods, people, families, communities – occurring to someone else......
The gaps continued

**Emergency Response**

- At a national level, plant industries are part of decision making and cost sharing
- At a business level, greater awareness, partnership and recognition required

- Range of implementation of biosecurity systems implemented on-farm
- Example in response to Panama Disease TR4
  - QDAF process of engagement and partnership with growers assisted government identify risks and industry implement mitigation measures
  - Sophisticated and professional Farm biosecurity systems in place that assisted emergency response
The way forward

Farm Biosecurity – a true partnership

1. **Information, awareness and communication** – improvements in sharing what we do
   - Confidentiality; privacy; commercial in confidence; lack of trust etc
   - True consultation

2. **Tools** – needed for data collection, data capture, surveillance, diagnostics, farm hygiene
   - How do we make these available?
   - Work with businesses and agencies not against them

3. **Respect**
   - Across, within and between industry and government
The way forward continued

4. **Culture**
   - Normalisation of biosecurity needs to occur.
   - Change in responsibilities

5. **Resources**
   - may take time to transition greater role to industry
   - small and emerging industries?

6. **Recognition**
   - Inputs, skills, expertise, resources, data/information
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