

# ANNUAL SURVEILLANCE WORKSHOP 2020 PROGRAM

**Dates** 9 & 10 December 2020

**Delivery** Zoom webinar  
Those registered to attend will receive an email with the Zoom meeting joining details.  
(see page 4 for more details)

## Workshop theme

To support the [International Year of Plant Health \(IYPH\) 2020](#) the workshop theme is ‘*International, Regional, National and Local – where do you fit in the surveillance continuum to protect plants and our way of life?*’

## Objectives

1. Build understanding of international, regional, national and local surveillance activities and initiatives in the wider plant pest surveillance system.
2. Connect interested people, share information and grow the Plant Surveillance Network.
3. Facilitate opportunities for capability building and succession planning.

## Contact

Natalie O’Donnell, the Plant Surveillance Network Australasia–Pacific (PSNAP) Coordinator, can be contacted at [PSNAP@phau.com.au](mailto:PSNAP@phau.com.au) with questions about the workshop.

## Acknowledgement

The Annual Surveillance Workshop (ASW) 2020 is delivered by Plant Health Australia (PHA) via funding provided by the Australian Government Department of Agriculture, Water and the Environment (DAWE).



Image: Annual Surveillance Workshop 2019 attendees

## Agenda

All presentations at the ASW2020 will be recorded and made available to PSNAP members on the PSNAP members portal after the workshop. The workshop agenda was shortened to fit a virtual format, therefore there are several additional presentations that will only be available on the PSNAP members portal. These will be uploaded on Monday 7 December 2020.

Timings of the agenda are to best accommodate the different time zones of people attending the workshop, from Fiji to Western Australia.

### Wednesday 9 December 2020

DAY	TIME*	DESCRIPTION
Day 1	10.45 am	Participants login to Zoom
	11:00 am	<b>Welcome and introductions</b> (Natalie O'Donnell, PSNAP Coordinator) <b>Introduction to the surveillance continuum</b> <ul style="list-style-type: none"> <li>National and international (Susie Collins, DAWE)</li> <li>State and operational (Louise Rossiter, NSW DPI)</li> </ul>
		<b>Participant activity</b> <b>International and Regional Surveillance</b> (PSNAP member presentations) Session facilitator – Chris Dale, DAWE <ul style="list-style-type: none"> <li>International Plant Health Surveillance Program – Australia's early warning program for current and emerging regional biosecurity pest risks (Chris Dale, DAWE)</li> <li>Where Plant Health Surveillance fits in the Biosecurity System (BMSB a case study) (Rory McLellan, NZ MPI)</li> <li>Surveillance and studies for endemic and exotic virus diseases in Timor-Leste and northern Australia (Murray Sharman, DAF QLD)</li> </ul>
		<b>Update from Subcommittee on National Plant Health Surveillance Chair</b> (Louise Rossiter, NSW DPI)
		<b>Break</b>
	1:20 pm	<b>National Surveillance</b> (PSNAP member presentations) Session facilitator – Laura Fagan, DPIRD <ul style="list-style-type: none"> <li>More than 20 years of success: Northern Australia Quarantine Strategy surveillance supporting the response to exotic pest fruit fly incursions in the Torres Strait (David Britton, DAWE)</li> <li>National Border Surveillance: Success in protecting Australia's borders (Brittany Hyder, DAWE)</li> <li>Towards sustainable post-border surveillance programs (Paco Tovar, PHA)</li> </ul>
		<b>National Plant Biosecurity Surveillance Strategy review update</b> (Jonathan Terlich, PHA)
		<b>Plant Surveillance Network Australasia-Pacific update</b> (Natalie O'Donnell, PHA)
		<b>Workshop Session: Your Plant Surveillance Network</b> Facilitator – Natalie O'Donnell
	3:30 pm	Day 1 close

\*Times reflected are Australian Eastern Daylight Time (AEDT).

## Thursday 10 December 2020

DAY	TIME*	DESCRIPTION
Day 2	10:45 am	Participants login to Zoom
	11:00 am	Day 2 welcome
		<b>Local Surveillance</b> (PSNAP member presentations) Session facilitator: David Hubbard, PIRSA <ul style="list-style-type: none"> <li>• CropSafe – Victoria’s grains surveillance program (Luise Fanning, AgVic)</li> <li>• Can urban gardeners contribute to General Surveillance to complement targeted surveillance activities for biosecurity in Australia? (Kellyanne Harris, AgVic)</li> <li>• NT Farmers and the initiatives around Asian Vegetable Growers (Simone Cameron, NT Farmers)</li> <li>• iMapPESTS: aiming for the sky in cross-industry plant pest surveillance initiative (Shakira Johnson, AUSVEG)</li> </ul>
		Participant activity
		<b>Surveillance in Trade and Market Access</b> (PSNAP member presentations) Session facilitator: Veronica Hayes, DPIWE <ul style="list-style-type: none"> <li>• Surveillance to support trade and market access (Janine O’Donnell, SDQMA representative for NSW DPI)</li> <li>• Industry Biosecurity and a Shared Responsibility (John McDonald, GIA)</li> <li>• Enhancing surveillance with on farm monitoring (Jeff Milne, Citrus Australia)</li> <li>• MyPestGuide™ learning about overseas surveillance information (Laura Fagan, DPIRD)</li> </ul>
	1:10 pm	Break
	2:00 pm	Surveillance data standards project update (Mark Stanaway, DAWE)
		Introduction to National Surveillance Protocols (Bernie Wittwer, DAWE)
		<b>Workshop session:</b> Introduction and application of National Surveillance Protocols Facilitators – Mark Stanaway, Bernie Wittwer and Natalie O’Donnell
		Workshop evaluation and wrap up (Natalie O’Donnell, PHA)
3:30 pm	Workshop close	

\*Times reflected are Australian Eastern Daylight Time (AEDT).

### Additional presentations on PSNAP members portal

	DESCRIPTION
Available online	<ul style="list-style-type: none"> <li>• The use of surveillance data capture and storage systems to support innovative approaches to sentinel surveillance in botanic gardens (David Gale, PHA)</li> <li>• Strengthening general surveillance through systems thinking (Heleen Kruger, DAWE)</li> <li>• Protecting Queensland Timber Resource (Janet McDonald, DAF QLD)</li> <li>• Uses of AgKonec’s biosecurity data system in Australian plant industries (Peter Whittle, Agkconnect)</li> </ul>

# Virtual workshops

## Accessing Zoom meeting

If you are new to using Zoom and need help joining the meeting, this [short video](#) shows users how to join a Zoom meeting.

## Webinar tips for attendees

- **Login to the webinar 15 minutes early.** This is to ensure you do not have any technical issues and do not delay the start of the workshop.
- **Turn off your webcam and microphone.** This is to allow all participants to focus on the presenter and their presentation.
- **Chat function.** You can choose to ask a question to the PHA Moderator or to the whole workshop. Be selective with where you target your question.
- **Questions**
  - Wait until the Q&A session to ask questions.
  - Follow the guidance of the facilitator, raise your hand (using the Zoom option) and wait until called upon.
  - Time is limited, so be brief when asking your question.
  - If there is not enough time for your question, send it to the PHA Moderator via the chat function and it will be answered afterwards.
- **Technical issues**
  - If you lose connection, sign back in to the workshop the same way you did at the start and you will continue where you left off.
  - If you lose connection during a breakout session. Same as above, log back into the main workshop and you will then be reallocated to your group.
  - If you are experiencing issues with sound or video, send a message to the PHA Moderator through the chat function and they will try to assist.
  - If you cannot access the webinar at all, email [PSNAP@phau.com.au](mailto:PSNAP@phau.com.au) and someone at PHA will try to help you resolve the issue. Email is the best way to contact the ASW2020 team as we will not be near our phones once the webinar starts.  
Tip – check you are typing in the webinar details for the correct day of the workshop.

## Webinar tips for presenters:

- **If possible, wear a headset with a built-in microphone when presenting.** This will ensure you can be heard clearly.
- **Don't sit with a window behind you.** The lighting will obscure your face.
- **Test the software at least 30 minutes before the webinar starts.** If you have external microphones and cameras, plug these in before testing. Use this [website](#) to test your internet speed, browser, operating system, camera, microphone, and sound. This way, you avoid any software mishaps or issues before the webinar.
- **Slow down and try to use eye contact whenever possible.** We know, it sounds weird to stare into a web camera, but doing this once in a while helps to connect to your audience. Slowing down to allow the attendees to process your information also allows them to retain more information.
- **Use graphics and avoid reading from slides.** Use graphics and avoid overcrowded slides as well as reading from them - most of the information humans process is visual.
- **Repeat the question if provided via the chat.** This is to ensure everyone knows what which question you are answering.

## PSNAP Professional Development Opportunities

The Plant Surveillance Network Australasia Pacific (PSNAP) was established in 2017 to improve Australia's capability and capacity to detect plant pests that impact on plant industries, the environment and the community. A professional development program is being developed for members and will include the following.

### Surveillance Residential Program

The Surveillance Residential Program allows individuals to travel to other locations, domestically or internationally, to gain skills and knowledge relevant to their role in plant health surveillance and allow the sharing of ideas and practices. The underpinning purpose of the program is to improve the surveillance system by improving the capability of individuals.

Participants are asked to share their outcomes with the PSNAP and present at an ASW following their project.

Projects are selected through an application process. The next round will be advertised in January 2021.

### Training workshops

Multiple practical training workshops will be held annually. The training will focus on the various elements of plant health surveillance, such as development and use of National Surveillance Protocols, data standards, data collection, survey design, sample collection (i.e. how to collect, bag and label samples) and development and use of field triage guides. Other potential workshops could include training for specific pest targets in different environments. Send any training workshop ideas to [PSNAP@phau.com.au](mailto:PSNAP@phau.com.au).

Opportunities are advertised on the PSNAP website.

## Share opportunities and information with PSNAP members

You can share relevant information, events and opportunities with other PSNAP members through the PSNAP website. This could include job opportunities, workshops, fact sheets and publications etc.

Contact the Network Coordinator through [PSNAP@phau.com.au](mailto:PSNAP@phau.com.au).

### Job opportunity – Diagnostics and Surveillance Networks Coordinator

Plant Health Australia (PHA) is seeking a self motivated, organised, good communicator to fill the role of Diagnostics and Surveillance Networks Coordinator for a 12 month contract.

This position has primary responsibility for the coordination of the [Plant Surveillance Network Australasia-Pacific](#) (PSNAP) and the [National Plant Biosecurity Diagnostic Network](#) (NPBDN). The role includes driving the prioritisation and implementation of professional development opportunities for diagnosticians and surveillance personnel to address identified gaps in the national plant biosecurity diagnostic and surveillance systems.

Full details of the role are available at [planthealthaustralia.com.au/jobs/](http://planthealthaustralia.com.au/jobs/)

Applications close on Monday 14 December 2020. If you are interested in the position and will not have the opportunity to complete your application by the closing date, send an expression of interest email to [admin@phau.com.au](mailto:admin@phau.com.au). PHA will advise whether you can submit an application after this date.

## PSNAP member presentation abstracts

### DAVID BRITTON

#### **More than 20 years of success: Northern Australia Quarantine Strategy surveillance supporting the response to exotic pest fruit fly incursions in the Torres Strait**

*David Britton, DAWE*

Exotic pests, weeds and diseases present in near neighbouring countries to the north of Australia represent a major threat to Australian agricultural production and the environment. The Northern Australia Quarantine Strategy (NAQS) section of Department of Agriculture, Water and the Environment conducts surveillance for plant and animal pests, weeds and diseases arriving from the north. As part of this, NAQS maintains a network of fruit fly surveillance traps in the Torres Strait and the Northern Peninsula Area of Cape York (NPA). These traps detect seasonal incursions of key exotic fruit fly pests from Papua New Guinea and West Papua. Detections of target species in these traps initiates proportional response activities delivered by the response owner the Queensland Department of Agriculture and Fisheries (QDAF) (supported by NAQS officers based in the Torres Strait). The level and nature of the response activity delivered depends on the number of detections and proximity of the detections to mainland Australia. This surveillance and response represent one of the great success stories for biosecurity in Australia and provides a model for a long-term shared biosecurity responsibility between government, industry and community.

### SIMONE CAMERON

#### **NT Farmers and the initiatives around Asian Vegetable Growers**

*Simone Cameron, NT Farmers Association*

Simone Cameron is an Industry Development and Biosecurity Officer for the NT Farmers Association. NT Farmers Association is the peak body for all the plant-based industries in the Northern Territory. They support and represent established and emerging agribusiness industries. The total value of farming production in the NT in 2019 was around \$456 million, growing from zero in the 1980's with vegetables providing \$61 million, melons \$69.4 million, mangoes \$128.8 million and other tropical fruit \$22.4 million.

NT Farmers Association initiated and assisted with the collaboration of coordinated area wide surveillance surveys predominantly for non-English speaking background farms. Since 2013 they have been pivotal in driving the development of positive strong and resilient relationships with the industries Asian vegetable growers. This assistance ensures that any seasonal pests and disease issues in crops are kept to a minimum and that when any unfortunate incursions have occurred that efficient and practical measures are in place to enable growers to continue operations as quickly as possible with little economic and financial impacts. The NT Farmers Association are a significant conduit for communication channels between our vegetable and market garden growers and other industry organisations such as NAQs and various government agencies. Plant health surveillance is cornerstone to the biosecurity continuum and the continued successful development of the northern plant industry of which NT Farmers Association has a large role to play.

## CHRIS DALE

### **International Plant Health Surveillance Program – Australia’s early warning program for current and emerging regional biosecurity pest risks**

*Chris Dale, DAWE*

Australia’s management of risks on regulated and unregulated pathways is largely based on intelligence and information about the pest status of other countries and the pathways that are active into Australia. The International Plant Health Surveillance Program (IPHSP) provides this early warning and pre-border intelligence in Australia’s northern near neighbours, and is one of five national plant health surveillance programs coordinated and delivered through the Department of Agriculture, Water and the Environment (DAWE).

The IPHSP has coordinated and delivered an annual program of surveillance, diagnostics and capacity development activities across Indonesia, Timor-Leste, Papua New Guinea and Solomon Islands since 2012, identifying regulated and natural pest pathways from Australia’s regional and near neighbours into Australia, targeting pests and locations that provide information to better manage Australia’s border and supporting Australian plant biosecurity preparedness activities.

This presentation will provide an overview of the International Plant Health Surveillance Program and its importance to the Australian Plant Health Surveillance Network and National Biosecurity system and its Regional and International linkages to the Asia Pacific Plant Protection Organisations (RPPO’s) and the International Plant Protection Commission (IPPC).

## LAURA FAGAN

### **MyPestGuide™ learning from overseas surveillance information**

*Laura Fagan, DPIRD*

Preventing invasive species from entering new areas is the most desirable and effective control strategy. Detecting pests in advance of the border can be most challenging and not all surveillance information is suitable to support the commercial trade environment. Australia needs reliable surveillance to identify the presence and/or absence of priority biosecurity pests to determine levels of risk and put in place appropriate preparedness and management measures. Can we learn anything from examining overseas surveillance information to enhance our own trade and market access and reduce our biosecurity risk? Using data collected from MyPestGuide™ users I determine the applicability and operational use of overseas information for measuring biosecurity risks to the existing commercial trade and market access pathway.

## LUISE FANNING

### **CropSafe - Victoria’s grains surveillance program**

*Luise Fanning and Kellyanne Harris, Agriculture Victoria*

The CropSafe program is an active surveillance system looking for new pests and diseases in the Victorian grain belt. CropSafe is delivered by Agriculture Victoria’s Agriculture Services Grains team in collaboration with a number of major agribusiness companies and private consultants since 2007.

CropSafe is a general surveillance program that relies on data obtained by agronomists, who are trained to identify key pests and diseases of concern. Around 200 agronomists are involved (approximately 85 per cent of Victoria’s agronomists) in inspecting canola, cereal and pulse crops, looking for anything that appears unusual to send in for expert diagnosis. The program has a streamlined sample receipt, analysis, reporting and record keeping process for all samples that are submitted for diagnostics. Agronomists are asked to provide basic data on the type, number and area of crops inspected. The data is then analysed for an estimate of confidence of area freedom for exotic pests and diseases of those crops. The surveillance standards in place ensure that contestable claims for area freedom can be matched with relevant data. In 2018 CropSafe agronomists reported on just over 1.9 million hectares which is approximately half of the estimated 3.2 million hectares of grain crop in Victoria.

## DAVID GALE

### **The use of surveillance data capture and storage systems to support innovative approaches to sentinel surveillance in botanic gardens**

*David Gale, Daniela Carnovale and Sharyn Taylor, Plant Health Australia*

Australia has over 150 botanic gardens and arboreta that hold a range of native and introduced plant species and are visited by millions of people each year including many from overseas. These factors make botanic gardens excellent sentinels for the early detection of exotic plant pests. A pilot project funded by the Department of Agriculture, Water and the Environment has established the Botanic Gardens Biosecurity Network to explore the ways in which staff and volunteers, can undertake effective surveillance for exotic plant pests. This pilot project in botanic gardens in Western Australia, Victoria, Tasmania, New South Wales and the Australian Capital Territory has been supported by the use of the MyPestGuide™ Reporter app through which absence, and suspect positive, reports have been received for the five target pests. Data are being collated into AUSPestCheck™, to provide national aggregation and visualisation. This presentation will use the Botanic Gardens Biosecurity Network as a case study to illustrate the flow of data from staff and volunteer members of the Botanic Gardens Biosecurity Network using the MyPestGuide™ Reporter app through to AUSPestCheck™, and the potential for the outcomes of this project to support the continued development of the Australian Plant Sentinel Network.

## KELLYANNE HARRIS

### **Can urban gardeners contribute to General Surveillance to complement targeted surveillance activities for biosecurity in Australia?**

*Jo Chong Wah & Kellyanne Harris, Agriculture Victoria*

Social research shows that the community are willing to participate in biosecurity surveillance but don't know 'how' or 'why' it's important. The *National Plant Biosecurity Surveillance Strategy 2013-2020* identified 'General Surveillance' as a critical component of the national surveillance system and there is interest in urban/peri-urban areas because of their position on risk pathways for pests and diseases.

The Urban Plant Health Network (UPHN) launched in October 2019 is connecting gardeners in Melbourne with industry and government experts specialising in plant health and biosecurity. Organisations involved include Agriculture Victoria, NGIV, Box Hill Institute, Cesar, AUSVEG, NSW DPI, NSW Local Land Services, Citrus Australia. Agriculture Victoria and the Department of Water and Environment fund the initiative.

The UPHN encourages Melbourne gardeners to learn about exotic pests and get involved in general surveillance of high priority pests. The UPHN highlights six high priority target pests:

- Brown Marmorated Stink Bug
- Asian Citrus Psyllid
- Glassy winged-Sharpshooter
- Red Imported Fire Ant
- Exotic bees
- Spotted Wing Drosophila

With the UPHN project using MyPestGuide Reporter urban gardeners can report anything unusual in their gardens, focusing on the six pests above.

The UPHN uses traditional approaches along with digital technologies to share information and promote surveillance. You can follow the UPHN on Facebook and Twitter (@Urbanplanthlth) or visit the website [extensionaus.com.au/urbanplanthealthnetwork](http://extensionaus.com.au/urbanplanthealthnetwork)

## BRITTANY HYDER

### **National Border Surveillance: Success in protecting Australia's borders**

*Brittany Hyder, DAWE*

The National Border Surveillance (NBS) is a national surveillance program performing surveillance at premises with Approved Arrangements involved in the importation of goods from overseas and First Points of Entry (airports, seaports and mail centres) across Australia. This program has been operating since November 2016, concentrating on the early detection of any exotic plant pests and diseases but particularly of high priority targets on the lists of National Priority Plant Pests and, more recently, Exotic Environmental Pests. The NBS has shown great success in the early detection and at times eradication of various high risks pests including invasive ants, snails, other invertebrates and plant diseases.

## SHAKIRA JOHNSON

### **Tile iMapPESTS: aiming for the sky in cross-industry plant pest surveillance initiative**

*Shakira Johnson, AUSVEG; Rohan Kimber, SARDI; Andrew Baker, Data Effects; Brendan Rodonl, Agriculture Victoria; Dusty Severtson, DPIRD; Dean BrookeS, University of Queensland; Nicole Thompson, Sugar Research Australia; David Teulon, The New Zealand Institute for Plant & Food Research Limite;, Jessica Holliday, Hort Innovation, Australia*

Australia's agriculture and horticulture industries have joined forces to change the way airborne pests and diseases are detected. The iMapPESTS: Sentinel Surveillance Systems for Agriculture program (iMapPESTS for short) will provide the foundation for a nationwide plant pest surveillance system to monitor and report the presence of pests that threaten major agricultural sectors across Australia, including grains, cotton, sugar, horticulture, wine and forestry industries.

A custom-designed prototype 'sentinel' mobile surveillance unit has been designed to offer optimal sampling of either airborne fungal spores or airborne insects.

Samples captured by the sentinels are sent to entomologists and molecular diagnosticians for identification of target pests and diseases, such as powdery mildew and light brown apple moth. The sentinels also collect environmental data at the time of sampling, which are married with pest and disease information and stored in a secure cloud-based system for downstream reporting.

Agriculture Victoria are using samples to test the application of Next Generation Sequencing diagnostic techniques for the broadscale detection of exotic pests and diseases. The iMapPESTS website aims to act as a centralised repository for all project-related data, reports and other materials generated across the eight distinct sub-projects nested within the overarching project.

## HELEEN KRUGER

### **Strengthening general surveillance through systems thinking**

*Heleen Kruger, ABARES, DAWE*

General surveillance is increasingly seen as a cost-effective way to obtain monitoring data about pest and disease status. Different forms of general surveillance are already making a considerable contribution to Australia's biosecurity system. However, such initiatives can be challenging to instigate and maintain due to interrelated social, institutional, organisational, ecological and infrastructure dimensions. Much of the literature dealing with general surveillance focuses on certain aspects of general surveillance only, such as data management, community engagement or the development of smart phone applications. In addition, there is considerable fragmentation between sectors (plant, animal, marine and environment) in their pursuits to progress general surveillance with limited sharing of lessons learned between them. In response to these challenges ABARES' General Surveillance Project explores general surveillance from a holistic systems thinking perspective to capture key considerations for the different system components and the dynamics between them in order to develop general surveillance guidelines. This session will provide an overview of the project, progress to date and next steps.

## JANET MCDONALD

### Protecting Queensland Timber Resource

*Janet McDonald, DAF Qld*

The Qld forest & timber industry value chain contributes approximately \$3.2B to the economy and employs 10,000 people. The softwood industry supplies raw materials that contribute >\$550M.

As part of a project developing a high-risk forest biosecurity surveillance program, Janet McDonald, DAF Forest Health Team, identified three high risk areas around Brisbane as being of particular risk based primarily on the concentration of Approved Arrangements (AAs) with high quantities of imported goods being processed. Spatial datasets of high risk sites were created, these include AAs, seaports, airports, sawmills, hardware stores and timber importers. Sites where previous incursions have been detected were also mapped.

*Pinus* sp. trees around these high risk sites were located using remote sensing methods and mapped, which greatly reduced the time and resources needed for surveillance and on-ground health assessments. This new mapping also reduced the amount of time required to design and implement the Projects high risk area trapping surveillance program.

As part of the same project key stakeholder groups were targeted for forest biosecurity awareness training. These groups included the Qld Arboricultural Association, Council arborists/field staff and arboriculture students.

Training focused on high priority biosecurity pests, symptom recognition, reporting, field hygiene and collection techniques. It has enabled arborist's and field staff to recognise damaging tree pests and diseases, and will help to highlight future threats increasing our capacity to detect exotic pests and pathogens before they become established.

This high risk site mapping and forest biosecurity training is essential to improving the likelihood of early detection, enabling more rapid and targeted eradication, thereby protecting Queensland's pine plantations.

## JOHN MCDONALD

### Industry Biosecurity and a Shared Responsibility

*John McDonald, Greenlife Industry Australia*

Across state, territory and commonwealth legislation and within the rhetoric of biosecurity strategies, reports, infopacks, brochures, etc., there is the continued promotion of the mantra of a 'Shared Responsibility' along the biosecurity continuum. This is particularly focused upon industry with the expectation growers will take on higher levels of activities and assist government in areas such as surveillance, specifically in support of Australia's national evidence of absence.

Plant producers are likely to be heavily exposed to financial pain if they participate in a national surveillance program under the current approach across Australian governments when managing plant pest incursion responses. The system fails to recognise the value of a business(s) participating in such a manner and in fact will openly claim value for supporting national evidence of absence yet will not apply the same value domestically. For industry to be an equal partner in the 'Shared Responsibility' the national system, particularly states and territories, will need to change the overall approach as the current policies and regulations are not conducive to such an environment. Industry is investing more in plant biosecurity than they have historically with grower based programs such as BioSecure HACCP offering opportunities to underpin broader policy and regulatory change.

## RORY MCLELLAN

### Where Plant Health Surveillance fits in the Biosecurity system (BMSB a case study)

*Rory MacLellan, Surveillance Incursion Investigation Plant Health, Biosecurity New Zealand*

This presentation will show where and how targeted Plant Health Surveillance fits in the whole of Biosecurity continuum within New Zealand, using a recent detection of Brown Marmorated Stink Bug (BMSB), (*Halyomorpha halys*) as an example. BMSB is a pest of concern in all of Australasia and continues to spread throughout Europe and North America in the Northern Hemisphere and has recently been detected in Chile in the Southern hemisphere.

The presentation will also highlight the lessons learned about surveillance for BMSB and what has been implemented in New Zealand for early detection of BMSB.

## JEFF MILNE

### Enhancing surveillance with on farm monitoring

*Jeff Milne, Citrus Australia*

The citrus industry is export focussed, in 2019 over 273,000 t, 40% of production valued at over \$500 m went to overseas markets, predominantly in Asia.

Industry and the Department of Agriculture have developed protocols to ensure pests of concern in Australian citrus are not received in the major markets Korea, China, and Thailand. The protocols consist of Integrated Pest Management, orchard registration, and packinghouse controls and involve regular monitoring for the pests of concern verified by registered crop scouts who conduct at least one orchard inspection to verify the orchard records.

Citrus Australia maintain the database as the KCT (Korea China Thailand). By including exotic pests in the monitoring protocols industry now has evidence of absence from those pests.

Citrus Australia is currently investigating how the data can be transferred to AUSPestCheck and how it can be considered as part of national surveillance.

A pilot on farm yellow sticky trapping program for the Asian Citrus Psyllid *Diaphorina citrii* to understand the process of distribution, deployment, and diagnostics nationally has recently completed.

Citrus Australia is working with agencies to ensure both projects provide recognised surveillance outcomes.

## JANINE O'DONNELL

### Surveillance to support trade and market access

*Janine O'Donnell, NSW DPI*

Abstract to be provided.

## MURRAY SHARMAN

### Surveillance and studies for endemic and exotic virus diseases in Timor-Leste and northern Australia

Murray Sharman<sup>1</sup>, Lynne Jones<sup>2</sup>, Abel Ximenes<sup>3</sup>

<sup>1</sup>Department of Agriculture and Fisheries, Queensland; <sup>2</sup>Department of Agriculture, Water and the Environment, Australian Government; <sup>3</sup>National Directorate of Quarantine and Biosecurity, Timor Leste

Several surveys for virus threats were done in northern Australia and Timor-Leste from 2016 – 2018. Samples were tested during surveys and returned to Australia under quarantine permit for further lab testing for poleroviruses. *Cotton leafroll dwarf virus* – CLRDV (the causal agent for cotton blue disease) has now been detected in *Gossypium barbadense*, *G. arboreum* and *G. hirsutum* in Timor-Leste in many locations across the country and has also been found in ornamental hibiscus. These *Gossypium* species were only present in very low numbers but the virus was present in greater than 25% of *Gossypium* plants tested.

During surveys in Timor-Leste, another three new polerovirus species were found in various host species. A couple of these aphid-transmitted polerovirus species were also detected in northern Australia, suggesting a wind-borne pathway for aphids may exist between Timor-Leste and Australia. Such a pathway may change the risk profile for a possible movement of *Cotton leafroll dwarf virus*, or other insect-borne threats, into northern Australia which is of particular interest with the expansion of cotton production in far northern regions.

## PACO TOVAR

### Towards sustainable post-border surveillance programs

Paco Tovar, PHA

Using recent experiences from the national forest biosecurity program and other programs, this presentation will discuss some of the pitfalls encountered in setting up multi-stakeholder programs, dealing with resource constraints, the benefits of a partnership approach and how to slowly change entrenched paradigms.

## PETER WHITTLE

### Uses of AgKonect's biosecurity data system in Australian plant industries

Barry Sullivan<sup>1</sup>, Pete Whittle<sup>1</sup>, Andrew Geering<sup>2</sup>, Louisa Parkinson<sup>2</sup>, Lara Pretorius<sup>2</sup> and Elize Jooste<sup>3</sup>

<sup>1</sup>AgKonect, <sup>2</sup>University of Queensland, <sup>3</sup>ARC Tropical and Subtropical Crops

Three Australian plant industries use AgKonect's biosecurity data system - Banana, Avocado and Mango - showing powerful surveillance outcomes.

Effective surveillance requires a data system delivering data of high quality, integrity and velocity. This has long been lacking in industries and governments. AgKonect uses Konect, an Australian SaaS field services platform used in many industries to capture and manage data relating to assets on the earth's surface. Through sharing development and maintenance costs, cost and risk are low compared to one-use, purpose-built systems.

AgKonect first biosecurity use was for Banana bunchytop virus, to simplify operations, data capture, analysis and reporting. Banana uses expanded to leaf disease regulation and farm biosecurity auditing. The Mango industry uses AgKonect for monitoring biosecurity pests and phytosanitary certification. The Avocado industry uses AgKonect for a national survey for Sunblotch viroid, for export and nursery accreditation. Nurseries take thousands of geolocated samples, and the research team logs diagnostic data in a shared system.

AgKonect is a readymade biosecurity system, that can be configured and deployed quickly and affordably. It is ready for wide adoption in Australian plant industries and government departments that have long been held back by the practical challenges of biosecurity surveillance data.

We acknowledge the Australian Banana Growers Council and the Australian Mango Industry Association.

# Workshop session details

## Day 1 – Your Plant Surveillance Network

### Session purpose

The purpose of this group workshop session is to reflect on what the Plant Surveillance Network Australasia–Pacific has become to date, and gain an understanding of what all PSNAP members want from this network, now that the membership has expanded to over 250 people.

### Background

The PSNAP was formed to bring together individuals working in plant pest surveillance and related roles to share information and strengthen surveillance capacity and capability across Australia, New Zealand and the nearby regions.

The network was formed in 2017 as an initiative of the Subcommittee on National Plant Health Surveillance (SNPHS), Australia and is overseen by the Plant Surveillance Network Working Group (PSNWG), which is a working group of SNPHS.

### Network aim

The aim of the PSNAP is to strengthen surveillance capacity and capability by improving connections and communication between network members. This will improve our ability to respond effectively to plant pests, safeguarding the economy, environment and communities.

### Objectives

The PSNAP objectives are to:

1. Improve skills to build capacity and capability in the plant health surveillance community
2. Facilitate connections between surveillance practitioners and those requiring surveillance outcomes
3. Share knowledge, tools and resources developed across the network to help increase the efficiency and consistency of plant health surveillance outcomes.

### Benefits of the PSNAP

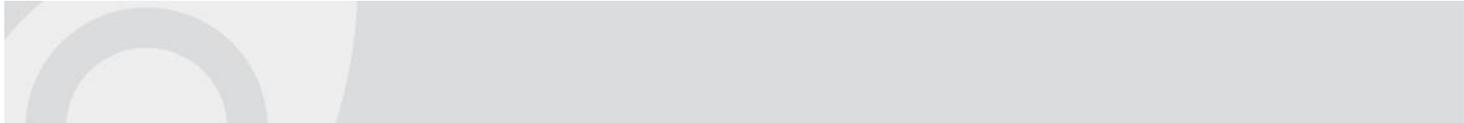
The PSNAP gives members access to surveillance resources, enabling members to stay up to date with current practices and develop their skills. Membership also provides access to the PSNAP Professional Development Program, which has been developed to allow participants to:

- learn new and develop existing skills
- keep up to date with best practices
- promote ideas for new projects
- expand contacts and networks
- establish mentoring opportunities
- facilitate industry succession planning.

The PSNAP Professional Development Program includes:

1. *Surveillance Residential Program*

The PSNAP Surveillance Residential Program enhances the national capability and capacity to detect plant pests by developing the skills of individuals. Those working in plant health surveillance gain essential skills and knowledge through experiences they would not otherwise



have access to in their own organisation. The program allows participants share their ideas and experience, improve collaborations and build on existing networks.

2. *Training workshops*

Skills-based training workshops are delivered to PSNAP members that focus on specific elements of plant health surveillance, such as development and use of National Surveillance Protocols, data standards, data collection, survey design, sample collection (i.e. how to collect, bag and label samples), and use of field triage guides.

3. *Annual Surveillance Workshops*

The Annual Surveillance Workshops (ASW) provide opportunities for PSNAP members to come together to exchange tips and techniques, share knowledge and find out what other surveillance personnel are doing and experiencing in their jobs.

### Workshop questions

1. How do you see the PSNAP contributing to your professional development?
2. What information and opportunities would you like made available to you through the PSNAP?
3. How can we improve the relevance of the PSNAP and provide further benefits to members?

## Day 2 – Introduction and application of the National Surveillance Protocols

### Session purpose

The purpose of this group workshop session is to review and provide feedback on the structure and content of draft National Surveillance Protocols (NSPs), specifically the methodology section.

### Surveillance Protocol

A surveillance protocol is a technical reference guide for conducting surveillance on a specific plant pest or group of plant pests. It includes information on surveillance methodology, pest biology and taxonomy, identification and sample processing.

### National Surveillance Protocols

A NSP should be easy to read, well-structured and with an adequate amount of detail to enable readers to understand the surveillance purpose and methodology. NSPs include information and/or reference to:

- Why the surveillance is required
- Scope
- Pest biology/ecology relevant to surveillance
- Risk/pathway analysis
- Surveillance methodology
- Data recording
- Diagnostic considerations

### SNPHS Reference Standard

NSPs follow the agreed processes for the development and approval of National Surveillance Protocols for Plant Pests as described in the SNPHS Reference Standard, [available here](#).

SNPHS are undertaking a review of the Reference Standard and feedback from this session will contribute to that review. Specific areas requiring clarification include:

- Level of detail – there should be enough detail to write a work instruction but will not cover the resource and operational differences for the various organisations that will use the protocol .
- Surveillance design – does not include statistical design because the statistic design will change at regional levels, between ports and between seasons, plus some pests lack quantitative information for design.
- Data protocols – ongoing work to develop a database. However, there is a need to validate the tools to be used in the database and establish confidence in the data.

### Draft NSPs for review

Three draft NSPs will be reviewed at the ASW2020. Each group will be assigned one protocol to focus on. The protocols can be downloaded from the [ASW2020 events page on the PSNAP website](#). You will need to login to the members portal to access this page. The protocols to be reviewed are:

- Fire blight (*Erwinia amylovora*)
- Gypsy and Nun moth (*Lymantria spp.*)
- Khapra beetle (*Trogoderma granarium*)



## Workshop questions

1. Could your program write a work instruction for surveillance from the information within the surveillance methodology section?
  - Why/why not?
2. Do you have other expectations of the protocol content?
  - Should any sections be added, expanded or removed?
  - Is the document too long or too short?
3. What are your expectations of the surveillance design section?
  - Is it too regional or program specific to be useful?
  - What about pests that do not have good design information? E.g. if the information does not exist.
4. Do the data protocols clearly describe the minimum data you must provide to create a valid pest record for your pest?

## ASW participant list

FIRST NAME	SURNAME	ORGANISATION	STATE	PEST
Mona	Akbari	DAWE	ACT	Gypsy moth
Femi	Akinsanmi	UQ	QLD	Khapra beetle
Rosamund (Mundi)	Allen	DAF QLD	QLD	Khapra beetle
Lucy	Aukett	PHA	ACT	Fire blight
Rosalie	Banks	DAF QLD	QLD	Khapra beetle
David	Britton	DAWE	QLD	Fire blight
Rohan	Burgess	PHA	ACT	Gypsy moth
Simone	Cameron	NT Farmers Association	NT	Khapra beetle
Daniela	Carnovale	PHA	ACT	Gypsy moth
Sally	Chesworth	PHA	ACT	Khapra beetle
Matt	Chifley	PHA	ACT	Gypsy moth
Susie	Collins	DAWE	ACT	Fire blight
Lisa	Coppinger	DAF QLD	QLD	Khapra beetle
K'trie	Coster	GRDC	ACT	Gypsy moth
Louise	Croeser	DPIRD	WA	Fire blight
Chris	Dale	DAWE	ACT	not allocated
Nitesh	Datt	Biosecurity Authority of Fiji	Fiji	Khapra beetle
Kath	Deboer	PHA	ACT	Khapra beetle
Emily	Donaldson	DJPR	VIC	Fire blight
Lauren	Drysdale	NSW DPI	NSW	Fire blight
Janine	Duncan	DPIRD	WA	Khapra beetle
Trevor	Dunmall	PHA	QLD	Khapra beetle
Laura	Fagan	DPIRD	WA	Khapra beetle
Luise	Fanning	DJPR	VIC	Fire blight
Mary	Finlay-Doney	NT DITT	NT	Khapra beetle
Callum	Fletcher	AUSVEG	VIC	Fire blight
Mel	Frousheger	NT DITT	NT	Khapra beetle
David	Gale	PHA	ACT	Gypsy moth
Cherie	Gambley	DAF QLD	QLD	Khapra beetle
Billy	Gordon	NSW DPI	NSW	Gypsy moth
Kathy	Gott	NSW DPI	NSW	Fire blight
Rebecca	Hamdorf	PIRSA	SA	Gypsy moth
Nichole	Hammond	DPIRD	WA	Khapra beetle
Kellyanne	Harris	DJPR	VIC	Fire blight
Zarmeen	Hassan	AUSVEG	VIC	Fire blight
Veronica	Hayes	DPIPWE	TAS	Khapra beetle
Sally	Heaton	NT DITT	NT	Gypsy moth
Simone	Heimoana	CSIRO	NSW	Gypsy moth
Juliane	Henderson	DAF QLD	QLD	Gypsy moth
Rudi	Hoffman	DJPR	VIC	Fire blight
Christine	Horlock	DAF QLD	QLD	Gypsy moth

FIRST NAME	SURNAME	ORGANISATION	STATE	PEST
David	Hubbard	PIRSA	SA	Gypsy moth
Michael	Hughes	Quintis	WA	Fire blight
Tim	Hurst	DJPR	VIC	Gypsy moth
Brittany	Hyder	DAWE	VIC	Fire blight
Sue	Jaggar	DPIRD	WA	Gypsy moth
Rebecca	James	DAWE	NT	Gypsy moth
Sylvia	Jelinek	NSW LLS	NSW	Gypsy moth
Shakira	Johnson	AUSVEG	VIC	Fire blight
Lynne	Jones	DAWE	QLD	Fire blight
Nikki	Jones	DJPR	VIC	Fire blight
Jeevan	Khurana	GRDC	ACT	Khapra beetle
Heleen	Kruger	DAWE	ACT	Khapra beetle
Emily	Iamberton	PHA	ACT	Fire blight
Simon	Lawson	USC	QLD	Khapra beetle
Tara	Lee	DAWE	VIC	Fire blight
Jessica	Lehmann	PHA	ACT	Khapra beetle
Pauline	Lenancker	SRA	QLD	Fire blight
Jo	Luck	PBRI	VIC	Gypsy moth
Rory	MacLellan	NZ MPI	NZ	Gypsy moth
Craig	Marston	DAWE	QLD	Fire blight
Janet	McDonald	DAF QLD	QLD	Fire blight
John	McDonald	GIA	QLD	Gypsy moth
Kym	McIntyre	DAF QLD	QLD	Gypsy moth
Jeff	Milne	Citrus Australia	VIC	Khapra beetle
Jim	Moran	DJPR	VIC	Fire blight
Ashlee	Morgan	DAWE	VIC	Khapra beetle
Robyn	Morrison	DJPR	VIC	Khapra beetle
Ian	Naumann	DAWE	ACT	Khapra beetle
Merran	Neilsen	NT DITT	NT	Fire blight
Gertraud	Norton	DAWE	ACT	Gypsy moth
Chris	Oakeley	Biosecurity Blitz 30-day challenge winner	WA	Fire blight
Janine	O'Donnell	NSW DPI	NSW	Khapra beetle
Natalie	O'Donnell	PHA	ACT	not allocated
Karen	OMalley	NSW LLS	NSW	Gypsy moth
Simon	Ong	Quintis	WA	Khapra beetle
Amy	Parry	DPIRD	WA	Khapra beetle
Ceri	Pearce	DAF QLD	QLD	Fire blight
Suzy	Perry	DAF QLD	QLD	Gypsy moth
Maxine	Piggott	NT DITT	NT	Khapra beetle
Kevin	Powell	SRA	QLD	Gypsy moth
Carol	Quashie-Williams	DAWE	ACT	Gypsy moth
Madeleine	Quirk	AUSVEG	VIC	Gypsy moth
Anil	Raghavendra	NSW DPI	NSW	Fire blight

FIRST NAME	SURNAME	ORGANISATION	STATE	PEST
Anil	Raghavendra	NSW DPI	NSW	Khapra beetle
Fiorella	Ramirez Esquivel	DAWE	ACT	Khapra beetle
Darsh	Rathnayake	NT DITT	NT	Gypsy moth
Louise	Rossiter	NSW DPI	NSW	Fire blight
Jenny	Shanks	PHA	ACT	Gypsy moth
Murray	Sharman	DAF QLD	QLD	Gypsy moth
Joshua	Smith	DJPR	VIC	Fire blight
Lisle	Snyman	DAF QLD	QLD	Khapra beetle
Mark	Stanaway	DAWE	QLD	not allocated
Ranjith	Subasinghe	DAWE	NSW	Fire blight
Sharyn	Taylor	PHA	ACT	Khapra beetle
Jonathan	Terlich	PHA	ACT	Khapra beetle
Brian	Thistleton	NT DITT	NT	Gypsy moth
Jenifer	Ticehurst	DAWE	ACT	Khapra beetle
Paco	Tovar	PHA	WA	Fire blight
Lucy	Tran-Nguyen	NT DITT	NT	Fire blight
Rod	Turner	PHA	ACT	Fire blight
Pete	Whittle	Agkonnnect	QLD	Fire blight
Terri	Wilson	Nutrano	VIC	Gypsy moth
Bernie	Wittwer	DAWE	QLD	not allocated
Christine	Wood	DPIRD	WA	Khapra beetle
Karl	Wotherspoon	Sustainable Timber Tasmania	TAS	Gypsy moth
Abel	Ximenes	Plant Quarantine Timor Leste	Timor-Leste	Gypsy moth
Ken	Young	GRDC	ACT	Fire blight

## Acronym & glossary list of common terms

ACRONYM	TERM/MEANING
-	<b>Area freedom</b> – absence of a specific pest in a specified location (which may include pest free areas, pest free places of production or pest free production sites).
ASW	<b>Annual Surveillance Workshop</b> – for members of the PSNAP.
-	<b>Biosecurity continuum</b> – describes the range of locations where biosecurity risks may arise and where biosecurity activities take place – pre-border, at the border and post-border.
CSIRO	<b>Commonwealth Scientific and Industrial Research Organisation</b> – an Australian Government agency responsible for scientific research.
DAWE	The Commonwealth <b>Department of Agriculture, Water and the Environment</b> .
DAF QLD	Queensland Government’s <b>Department of Agriculture and Fisheries</b> .
-	<b>Delimiting survey</b> – a survey conducted to establish the boundaries of an area considered to be infested by or free from a pest.
-	<b>Detection survey</b> – a survey conducted in an area to determine if pests are present.
DJPR	Victorian <b>Department of Jobs, Precincts and Regions</b> .
DPIPWE	Tasmanian <b>Department of Primary Industries, Parks, Water and Environment</b> .
DPIRD	Western Australia <b>Department of Primary Industries and Regional Development</b> .
EPP	<p><b>Emergency Plant Pest</b> – a plant pest that is included in Schedule 13 (of the <a href="#">EPPRD</a>) or which is determined by the Categorisation Group to meet one or more of the following criteria:</p> <p>(a) It is a known exotic Plant Pest the economic consequences of an occurrence of which would be economically or otherwise harmful for Australia, and for which it is considered to be in the regional and national interest to be free of the Plant Pest.</p> <p>(b) It is a variant form of an established Plant Pest which can be distinguished by appropriate investigative and diagnostic methods and which, if established in Australia, would have a regional and national impact.</p> <p>(c) It is a serious Plant Pest of unknown or uncertain origin which may, on the evidence available at the time, be an entirely new Plant Pest or one not listed in Schedule 13 and which if established in Australia is considered likely to have an adverse economic impact regionally and nationally.</p> <p>(d) It is a Plant Pest already found in Australia that:</p> <ul style="list-style-type: none"> <li>(i) is restricted to a defined area through the use of regulatory measures intended to prevent further spread of the pest out of the defined area or into an endangered area; and</li> <li>(ii) has been detected outside the defined area; and</li> <li>(iii) is not a native of Australia; and</li> <li>(iv) is not the subject of any instrument for management which is agreed to be effective risk mitigation and management at a national level; and</li> <li>(v) is considered likely to have an adverse economic impact such that an emergency response is required to prevent an incident of regional and national importance.</li> </ul>
EPPRD	<b>Emergency Plant Pest Response Deed (EPPRD)</b> – a pre-agreed cost sharing and response framework for dealing with an incursion of an EPP.
-	<b>Endemic pest</b> – a plant pest which is native to Australia or an established pest which is not subject to containment and is therefore unlikely to be eradicated.
-	<b>Established pest</b> – a plant pest that is perpetuated, for the foreseeable future, within any area and where it is not feasible (whether in terms of technical feasibility or a benefit/cost analysis) to eradicate.
-	<b>Exotic pest</b> – a plant pest that is not known to occur in Australia.
-	<b>General Surveillance</b> – a process whereby information on particular pests which are of concern for an area is

ACRONYM	TERM/MEANING
	gathered from many sources, wherever it is available and provided for use by biosecurity agencies. General surveillance for a pest can support multiple surveillance objectives.
GIA	<b>Greenlife Industry Australia</b> – the peak industry body for businesses and organisations that provide products and services for greenlife production; produce, supply and retail greenlife or promote the benefits of and share greenlife with the community.
GRDC	<b>Grains Research and Development Corporation</b> – invests in research, development and extension to create enduring profitability for Australian growers.
IPPC	<b>International Plant Protection Convention.</b>
ISPM	<b>International Standard for Phytosanitary Measures</b>
NAQS	<b>Northern Australian Quarantine Strategy</b> – delivered by DAWE. Established in 1989 to provide an early warning system for exotic pest, weed and disease detections across northern Australia and to help address unique biosecurity risks facing the region. Details are available <a href="#">here</a> .
NEBRA	<b>National Environmental Biosecurity Response Agreement</b> – sets out emergency response arrangements, including cost-sharing, for biosecurity incidents that primarily impact the environment and/or social amenity, including marine pest incidents, where the response is for the public good.
NSP	<b>National Surveillance Protocol</b> – a nationally endorsed technical reference guide for conducting surveillance on a specific plant pest or group of plant pests for a particular purpose. It includes information on the surveillance methodology, pest biology and taxonomy, identification and sample processing for diagnosis.
NSW DPI	<b>New South Wales Department of Primary Industries</b>
NSW LLS	<b>New South Wales Local Land Services</b>
NT DITT	<b>Northern Territory Department of Industry, Tourism and Trade</b>
–	<b>Phytosanitary measure</b> – any legislation, regulation or official procedure having the purpose to prevent the introduction and/or spread of pests, or to limit the economic impact of regulated pests.
PBRI	<b>Plant Biosecurity Biosecurity Initiative</b> – a partnership between the nation’s plant Research and Development Corporations, working collaboratively with Plant Health Australia, the Department of Agriculture, Water and the Environment, industry, state and federal biosecurity stakeholders.
PHA	<b>Plant Health Australia</b> – the national coordinator of the government-industry partnership for plant biosecurity in Australia.
PHC	<b>Plant Health Committee</b> – the peak government plant biosecurity policy and decision-making forum.
–	<b>Plant Biosecurity</b> – a set of measures which protect the economy, environment and community from the negative impacts of plant pests. A fully functional and effective biosecurity system is a vital part of the future profitability, productivity and sustainability of Australia’s plant production industries and necessary to preserve the Australian environment and way of life.
–	<b>Plant health surveillance</b> – formal and informal monitoring to detect changes in Australia’s plant pest status or changes in plant biosecurity risk or plant pest prevalence, which may affect imports, exports and/or onshore production.
–	<b>Plant pest</b> – any species, strain or biotype of invertebrate pest or pathogen injurious to plants, plant products or bees or impacting social amenity or the environment.
PIRSA	Department of <b>Primary Industries and Regions, South Australia</b>
PSNAP	<b>Plant Surveillance Network Australasia–Pacific</b> – this network.
PSNWG	<b>Plant Surveillance Network Working Group</b> – the working group of SNPHS responsible for the PSNAP.
SDQMA	<b>Subcommittee on Domestic Quarantine and Market Access</b> – a subcommittee of the Plant Health Committee.
SNPHS	<b>Subcommittee on National Plant Health Surveillance</b> – a subcommittee of the Plant Health Committee.

ACRONYM	TERM/MEANING
SPHD	<b>Subcommittee on Plant Health Diagnostics</b> – a subcommittee of the Plant Health Committee.
SRA	<b>Sugar Research Australia</b> – invests in and manages a portfolio of research, development and adoption projects that drive productivity, profitability and sustainability for the Australian sugarcane industry.
–	<b>Surveillance</b> – processes which collect and record data on pest presence or absence through survey, monitoring or other procedures.
–	<b>Surveillance design</b> – process of assessing the pest surveillance requirements to deliver across a range of surveillance objectives in order to better mitigate the risks on identified pest pathways.
–	<b>Surveillance plan</b> – identifies the objectives of the surveillance, the operational groups that will deliver the surveillance activities, the methods that will be used to detect the pest and the sites that will be targeted to address the risks. Surveillance plans will indicate the resources and the quantity of effort required to deliver surveillance to meet the objective.
–	<b>Surveillance protocol</b> – a technical reference guide for conducting surveillance on a specific plant pest or group of plant pests. It includes information on the surveillance methodology, pest biology and taxonomy, identification and sample processing.
USC	<b>University of the Sunshine Coast</b> , Queensland Australia.
UQ	<b>The University of Queensland</b> , Australia.