Plant Health AUSTRALIA

MACQUARIE University

EXERCISE MOTUS

Biosecurity Preparedness Simulation Exercises

Testing Oriental Fruit Fly Preparedness

Sydney, 18-19 July 2024

Cairns, 8-9 August 2024

EXERCISE REPORT

ABOUT THE REPORT

The Exercise Motus Report was authored by Plant Health Australia (PHA) in consultation with the Exercise Planning Team which includes representatives from Industry and Government. The purpose of this report is to provide a summary of activities and a critical analysis of the outcomes and learnings of Exercise Motus. The information presented was informed by exercise evaluation and the observations of the Exercise Planning Team and Exercise Evaluators.

Any feedback or questions in relation to the report can be directed to PHA as follows:

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ACKNOWLEDGEMENT

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Version Control

VERSION	DATE	COMMENTS
0.A	17/04/2025	Draft provided by PHA to Project Committee and Macquarie University
	30/04/2025	Final version submitted to Macquarie University

TABLE OF CONTENTS

Abbreviations

AgVic	Agriculture Victoria
BAU	Business as usual
BISOP	Biosecurity Incident Standard Operating Procedure
CCEPP	Consultative Committee on Emergency Plant Pests
CEO	Chief Executive Officer
CA	Control Area
DAFF	Department of Agriculture, Fisheries and Forestry
DCP	Dangerous contact premises
EPP	Emergency Plant Pest
EPPRD	Emergency Plant Pest Response Deed
FASTA	Fresh and Secure Trade Alliance
HPP	High priority pest
IAEA	International Atomic Energy Agency
ILC	Industry Liaison Coordinator
ILO	Industry Liaison Officer
NMG	National Management Group
NSW DPIRD	New South Wales Department of Primary Industries and Regional Development
PBPWG	Plant Biosecurity Preparedness Working Group
PIB	Peak Industry Body
PIF	Plant Industry Forum
PIRSA	Department of Primary Industries and Regions, South Australia
PFA	Pest Free Area
PHA	Plant Health Australia
QDPI	Queensland Department of Primary Industries
RA	Restricted Area
SARDI	South Australian Research and Development Institute
TFE	Technical Feasibility of Eradication

EXECUTIVE SUMMARY

Bactrocera dorsalis (oriental fruit fly, OFF) is a significant horticultural biosecurity threat to Australia, with the potential to cause large scale economic impacts should it establish in Australia. Oriental fruit fly has an extensive host list and causes damage to a crop when female flies pierce the fruit or vegetable's skin to lay their eggs beneath the surface. This process introduces bacteria which causes rotting, which the maggots will then feed on. If OFF were to establish in Australia it could cause significant damage to Australia's $17 billion horticulture industry.

To enhance biosecurity preparedness for OFF, Exercise Motus, led by Plant Health Australia conducted multiple simulation exercises across Sydney and Cairns to test current and potential requirements for managing an OFF incursion. The exercise involved extensive collaboration between industry and government representatives and examined the response by government and industry to a detection in Sydney, New South Wales (NSW) and in Mareeba, Queensland (QLD).

Discussions and activities during the exercises focused on the following objectives:

- Understanding the immediate actions that would need to be undertaken by both government and industry in the early phase of a response to maintain business continuity.
- Examining the impacts on business continuity through identifying the effects on production and movements at a regional and state level.
- Testing recommended fruit fly commodity movement protocols (from an infested area for treatment prior to going to market) that have been developed under the Biosecurity preparedness for Oriental Fruit Fly (FF18001) project.
- Identifying potential issues or critical gaps in the recommended movement protocols and solutions that could be considered by the Biosecurity preparedness for Oriental Fruit Fly (FF18001) project team.

Each of these objectives were tested in the scenarios, except for objective 3, which did not occur as the draft protocols contained insufficient level detail to enable participants to provide constructive feedback. As a result, the scenarios were modified to instead ask participants to capture what information would be required to support the development of functional movement protocols in the future.

Key findings from the exercises included the importance of clear and consistent communication, the need for pre-agreed movement protocols, and the significance of engaging all stakeholders, including local councils and community leaders. This report emphasises the value of a unified approach between government and industry to ensure a common understanding and acceptance of response actions.

Several recommendations have been made to improve biosecurity preparedness that require input from state and territory governments, Department of Agriculture, Fisheries and Forestry (DAFF), affected industries, researchers, the National Fruit fly Council (NFFC) and Plant Health Australia (PHA), exemplifying how OFF requires a national approach.

Overall, the Exercise Motus Report demonstrates the commitment of PHA and its partners to safeguarding Australia's horticultural sector from the threat of exotic fruit flies. The collaborative efforts and insights gained from this exercise will undoubtedly strengthen the nation's biosecurity framework and ensure a swift and effective response to future biosecurity threats. It is important to note the importance of reporting early to reduce the impact of the exotic plant pest and prevent spread. The Emergency Plant Pest Response Deed (EPPRD) is a formal, legally binding agreement between Plant Health Australia (PHA), the Australian Government, all state and territory governments and plant industry signatories, covering the management and funding of responses to Emergency Plant Pest (EPP) Incidents. *Bactrocera dorsalis* is an exotic plant pest, and if detected, parties are obligated to respond to eradicate the pest as required under the EPPRD.

RECOMMENDATIONS

	RECOMMENDATION	POTENTIAL LEAD
1	Develop an industry engagement campaign, engaging with affected PIBs, on the impacts of *B. dorsalis,* to reduce apathy regarding fruit fly surveillance.	NFFC
2	In consultation with industry, provide specific information on the signs and symptoms of *B. dorsalis* damage in the forms of fact sheets or webpages. As well as the importance of early reporting and all suspect pests can be reported to the Exotic Plant Pest Hotline (1800 084 881).	NFFC
3	Work with fruit fly impacted industries to inform them of prevention and preparedness activities growers can undertake that may support business continuity during a response.	PHA
4	Work with fruit fly impacted industries to promote the PHA industry resource toolkit to help growers understand response processes and actions.	PHA
5	States and territories to consider how they could best circulate up to date and easily accessible information on movement controls, in the event of an oriental fruit fly outbreak.	All states and territories
6	Ensure funding and investment is sufficient to support the development of nationally agreed host and non-host lists for *B. dorsalis.*	FASTA
7	Develop a communication checklist that Industry Liaison Officers (ILOs) can reference during a fruit fly response, in collaboration with industry.	PHA
8	Inform industry and jurisdictions of their obligations to report the detection of exotic plant pests i.e. *B. dorsalis* as required under the Emergency Plant Pest Response Deed (EPPRD).	PHA
9	Raise awareness of the Australian Emergency Plant Pest Response Plan (PLANTPLAN) as the nationally endorsed guidelines for implementing a response under the EPPRD.	PHA
10	Undertake engagement with key growers (through affected peak industry bodies) of affected hosts in national growing regions to understand the requirements of their supply chain and identify required movement pathways.	NSW DPIRD
11	Submit a paper to the Subcommittee on Market Access, Risk and Trade to prepare pre-determined secure state and interstate transport routes to support the movement of fruit fly affected crops to approved treatment facilities or destruction sites.	NSW DPIRD
12	Explore accepted control options for *B. dorsalis* including existing Interstate	FASTA

	Certification Assurance (ICAs) for QFLY and or Medfly and determine if they can be adapted for *B. dorsalis.*	
13	Considering the outcome of Recommendation 11, review and update the draft movement protocols developed under the Biosecurity preparedness for Oriental Fruit Fly project (FF18001), in consultation with state and territory governments and affected industries.	NSW DPIRD
14	Support discussions through the Subcommittee on Plant Health Diagnostics to develop a National Diagnostic Protocol for *B. dorsalis* and other exotic fruit flies.	DAFF

OVERVIEW OF THE EXERCISE

Background

Extensive work by both government and industry, principally through the National Fruit Fly Council (NFFC), has been completed on the prevention and management of exotic fruit fly in Australia. This is summarised in the publicly available National Fruit Fly Strategy 2020-2025. The proposal was for a simulation exercise to test current and potential requirements required, in the event of an incursion, to allow the safe movement of product out of a 'Suspension Area' to support business continuity and market access.

Bactrocera dorsalis (oriental fruit fly) is a significant horticultural biosecurity threat to Australia, with the potential to cause large scale economic impacts should it establish in Australia. It is number four on the National Priority Plant Pest list[1] together with other high priority exotic fruit fly species. Oriental fruit fly has been recognised as a pest of concern to crops represented by the following signatories to the Emergency Plant Pest Response Deed (EPPRD):

- Apple and Pear Australia Ltd.
- Avocados Australia Ltd.
- Australian Banana Growers' Council Inc.
- Canned Fruit Industry Council of Australia Ltd.
- Cherry Growers Australia Inc.
- Citrus Australia Ltd.
- Dried Fruits Australia Inc.
- Australian Lychee Growers' Association
- Australian Mango Industry Association
- Australian Melon Association
- Passionfruit Australia Inc.
- Raspberries and Blackberries Australia Inc.
- Summerfruit Australia Ltd.
- Strawberries Australia Inc.Australian Processing Tomato Research Council Inc.
- Australian Table Grape Association Inc.
- Australian Grape and Wine Inc.
- AUSVEG

Additionally, the following crops not represented by parties to the EPPRD are also considered hosts:

- Coffee
- Papaya
- Fresh tomatoes
- Tropical exotic fruit (e.g. rambutans, longans)

Additionally, oriental fruit fly is established in Australia's near neighbours, specifically Papua New Guinea and Timor-Leste, which increases the risk of incursion into Australia. Oriental fruit fly moves into the Torres Strait, in far North Queensland, seasonally and the National Exotic Fruit Flies in Torres Strait Eradication Program works to eradicate them. This Response Plan is managed under the EPPRD and is Cost Shared by the Commonwealth, State and Territory Governments and Affected Industry Parties.

The extensive host range, establishment in Australia's near neighbours and market access implications of oriental fruit fly makes it a considerable biosecurity concern. A nationally agreed system for surveillance and quarantine zones in Australia for Queensland fruit fly (Qfly) and Mediterranean fruit fly (Medfly) is in place in the event of an incursion in a pest free area. There is no equivalent agreed system for exotic fruit fly. The guidelines for endemic fruit fly incursions and the historical eradication of Papaya fruit fly (part of the oriental fruit fly complex) in 1998 provided a starting point for the discussions in this exercise. These examples have/had movement restriction guidelines that will be used to pose challenges to participants regarding product movement and business continuity.

The outcomes of this exercise were to assist with informing industry and government about the potential impacts of

[1] https://www.agriculture.gov.au/biosecurity-trade/pests-diseases-weeds/plant/national-priority-plant-pests

an exotic fruit fly incursion, and the domestic regulators on potential movement protocols that could be developed to meet their legislated entry requirements. This sub project was developed as part of Hort Frontiers project FF18001 Biosecurity preparedness for Oriental Fruit Fly and was managed by Plant Health Australia.

This exercise forms part of a larger project funded through Hort Innovation titled *Biosecurity preparedness for Oriental Fruit Fly* (FF18001) led Macquarie University and in collaboration with New South Wales Department of Primary Industries and Regional Development (NSW DPIRD) and South Australian Research and Development Institute (SARDI). Funding for the exercise is through the above project, as well as contributions received through the National Fruit Fly Council (NFFC).

Aim

To improve the resilience of horticulture sectors through informing the development of movement protocols that minimise the impact on industry during an emergency response to an incursion of oriental fruit fly.

Objectives

1. Understanding the immediate actions that would need to be undertaken by both government and industry in the early phase of a response to maintain business continuity.
2. Examining the impacts on business continuity through identifying the effects on production and movements at a regional and state level.
3. Testing recommended fruit fly commodity movement protocols (from an infested area for treatment prior to going to market) that have been developed under the Biosecurity preparedness for Oriental Fruit Fly (FF18001) project.
4. Identifying potential issues or critical gaps in the recommended movement protocols and solutions that could be considered by the Biosecurity preparedness for Oriental Fruit Fly (FF18001) project team.

Scenarios

The fictional scenarios presented in this exercise were the detection of *B. dorsalis* in Sydney, New South Wales (NSW) and in Mareeba, Queensland, QLD.

The Sydney scenario began with a detection at a residential property in Mascot which later escalated to a detection at a commercial property in Kemps Creek. The Mareeba scenario involved a detection on a commercial property at Mareeba.

Both scenarios explored the suggested activities NSW and QLD would take under the specific circumstances and these are further outlined in this report.

Planning and delivery

Exercise planning

Planning was undertaken in a manner aligned with the principles outlined in the Australian Disaster Resilience Handbook 3: Managing Exercises, 2012, Australian Institute for Disaster Resilience CC BY-NC[2]. An Exercise Planning Team comprised of representatives the following organisations provided guidance on the development and implementation of the exercise:

- Plant Health Australia (PHA)
- NSW Department of Primary Industries and Regional Development
- Queensland Department of Primary Industries
- Department of Agriculture, Fisheries and Forestry
- Australian Table Grapes Association

[2] https://knowledge.aidr.org.au/collections/handbook-collection/

- Australian Mango Industry Association
- Citrus Australia
- AUSVEG

Exercise delivery

Exercise Motus was delivered in two locations as a desktop exercise over two days, encompassing several short activities. Each exercise varied in the scenarios presented on Day 1 and had shared scenarios on Day 2. Both scenarios were designed to simulate an incursion of OFF in a production area. This was chosen as it allowed participants to work through the exercise objectives and questions under what would be a realistic scenario, if a real incursion were to occur. The following tables capture the scenarios and activities for both the Sydney and Cairns sessions on Day 1 and the shared scenarios on Day 2.

Table 1. Overview of key activities delivered during Day 1 of the Sydney exercise, delivered 18 July 2024.

SYDNEY DAY 1 – SCENARIO AND ACTIVITIES	
Session 1	
Scenario	Suspect flies are found in a surveillance trap at Mascot near Sydney Airport. Both morphological and molecular test results confirm the samples as *B. dorsalis* which were confirmed by a second lab. The NSW Chief Plant Protection Officer (NSW CPPO) notified the Australian Chief Plant Protection Officer (ACPPO) within 24 hours of the first detection. Potentially Affected Industry Parties were identified by PHA under the EPPRD requirements and notified of the detection and a meeting of the Consultative Committee on Emergency Plant Pests (CCEPP) was convened.
Activity	Government participants were asked what movement restrictions would be applied to each of the affected areas and what immediate biosecurity emergency response actions they would take at this point in the response.
Session 2	
Scenario	Following the International Atomic Energy Agency (IAEA) Trapping Guidelines for Area-wide fruit fly Programs, supplementary trapping was deployed which showed the presence of additional suspect *B. dorsalis*. Diagnostics confirmed the presence of several males and one gravid female *B. dorsalis*. NSW DPIRD issues an *Individual Biosecurity Direction* to the owner of Infected Premises 1 (IP1) which places movement restrictions on the premises. A member of the community called the Exotic Plant Pest Hotline (1800 084 881) to report maggot infested fruit they purchased from a roadside stall of a working farm in the Kemps Creek area. NSW DPIRD biosecurity officers collected infested fruit samples from the Kemps Creek farm with confirmation of larvae to be *B. dorsalis*. The Kemps Creek farm becomes Infected Premises 2 (IP2), and a second set of movement restrictions and controlled movement zones are put in place around IP2. Movement restrictions and controlled movement zones have impacted multiple growers, packing sheds, transport infrastructure, transport routes and wholesale suppliers.
Activity	With the escalation of the scenario with restrictions in each of the affected areas, government participants are again asked what their immediate biosecurity emergency response actions would be.
Session 3	
Scenario	Continued supplementary trapping on the Kemps Creek farm showed the presence of an additional suspect *B. dorsalis*. Samples from stripped fruit and traps confirmed the presence of several males and one gravid female *B. dorsalis*. These detections exceed the response threshold set in the Mediterranean fruit fly NSW outbreak eradication plan (this plan aligns with the National Fruit Fly Protocols). With three male flies and one gravid female oriental fruit fly identified an outbreak is now declared and eradication procedures commence.

Activity	Movement restrictions are now in place with a direct impact on growers. Participants were asked the following questions. 1. What the immediate impacts on industry would be. 2. What would be industries' and governments' initial actions to maintain business continuity with respect to: • How movement restrictions are communicated to industry by both government and peak industry bodies. • What role a grower, local/State industry association, or national peak body would play in maintaining business continuity. • What treatments can/would industry accept. • How would governments engage with unaffected industries in the affected area who had been impacted. 3. How would government and industry ensure effective engagement with each other regarding the response actions to ensure a common understanding, including: • Communicating current restrictions to industry (both growers and downstream operators) and communities. • Communicating movement access requirements to government.

Table 2. Overview of key activities delivered during Day 1 of the Cairns exercise, delivered 8 August 2024.

CAIRNS DAY 1 – SCENARIO AND ACTIVITIES	
Session 1	
Scenario	A mango grower contacted the Exotic Plant Pest Hotline (1800 084 881) to report they had seen oviposition marks on mature green mangoes at their farm near Mareeba, Queensland. A Queensland Department of Primary Industries (QDPI) biosecurity officer investigated and collected stung fruit samples, which were sent for larval identification. Steiner traps containing methyl eugenol were deployed with further specimens also sent for identification. Morphological and molecular diagnostic confirmed one male *B. dorsalis*. The Queensland Chief Plant Health Manager (QCPHM) formally notified the Australian Chief Plant Protection Officer (ACPPO) of the detection within 24 hours of becoming aware of the incident. Potentially Affected Industry Parties were identified by PHA under the EPPRD requirements and notified of the detection and a meeting of the Consultative Committee on Emergency Plant Pests (CCEPP) was convened.
Activity	Government participants were asked what movement restrictions would be applied to each of the affected areas and what immediate biosecurity emergency response actions they would take at this point in the response.
Session 2	
Scenario	Following PLANTPLAN guidelines[3] delimiting surveillance was started and data from these surveys was used to identify the Restricted Area, which comprises all properties where *B. dorsalis* had been confirmed (Infected Premises), properties that have come into direct or indirect contact with an Infected Premise or infested plants (Contact Premises) and properties which may have been exposed to oriental fruit fly (Suspect Premises). A Control Area was established around the Restricted Area to control the movement of susceptible hosts and other regulated materials until the extent of the incursion was determined. QDPI issued a Biosecurity Emergency Order under the *Biosecurity Act 2014*, which placed movement restrictions on the Restricted Area and Control Area.
Activity	Movement restrictions are now in place with a direct impact on growers. Participants were asked the following questions. 1. What the immediate impacts on industry would be. 2. What would be industries' and governments' initial actions to maintain business continuity with respect to: • How movement restrictions are communicated to industry by both government and peak industry bodies. • What role a grower, local/State industry association, or national peak body would play in maintaining business continuity. • What treatments can/would industry accept.

[3] https://www.planthealthaustralia.com.au/response-arrangements/plantplan/

	• How would governments engage with unaffected industries in the affected area who had been impacted. 3. How would government and industry ensure effective engagement with each other regarding the response actions to ensure a common understanding, including: • Communicating current restrictions to industry (both growers and downstream operators) and communities. • Communicating movement access requirements to government.

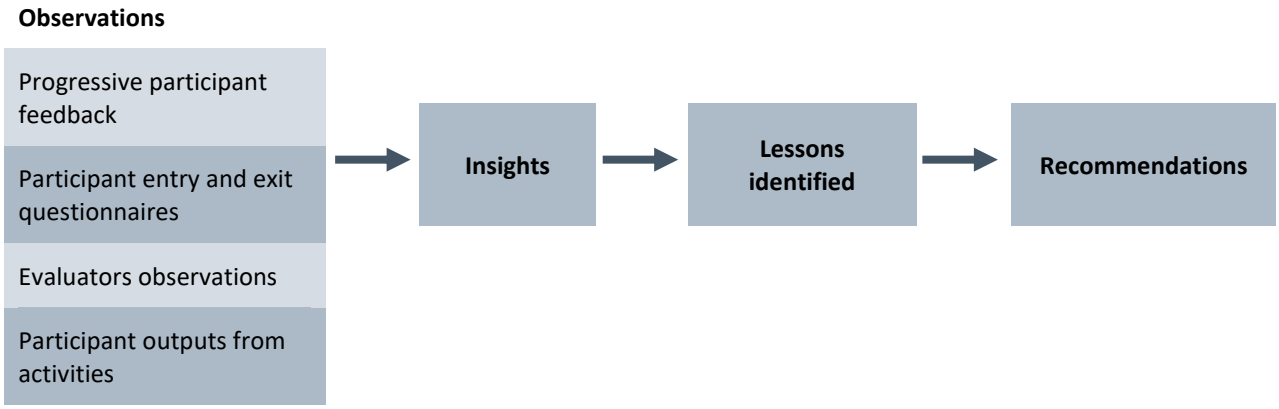
Table 3. Overview of key activities delivered during day 2 of the exercise, delivered 19 July 2024 in Sydney and 9 August 2024 in Cairns.

DAY 2 – SCENARIO AND ACTIVITIES	
Session 1	
Scenario	The response has moved forward two months and delimiting surveillance in the Export Assurance Zone has confirmed *B. dorsalis* is absent and therefore supports business continuity from this zone. *B. dorsalis* has been contained within the Corrective Action Zone.
Activity	Participants were shown a mock map of their jurisdiction's outbreak zone and asked what the impact on market access and business continuity would be depending on which zones a business was located. Following this discussion, it was anticipated attendees would discuss how the movement protocols, provided by Macquarie University, would be applied to each scenario. However, these movement protocols proved to not have sufficient detail to allow participants to discuss their implementation. Participants were instead asked several questions that aimed to capture what information was needed to generate functional movement protocols: 1. What considerations were needed when developing movement protocols including: ○ What will be the impacts of additional transport costs? How do these relate to seasonal timing? ○ Would additional transport movements affect crop quality? ○ How would the protocols fit into the national fruit fly management system? 2. Do current systems and processes support the implementation of movement protocols? ○ Who will enforce permitting systems, compliance checks and border checks? ○ How will this be communicated? ○ Can existing resources (transport, treatment facilities) meet demand across all affected industries and/or during peak production? ○ What additional resources would be needed? Are these currently widely available? Is there enough to meet demand during peak production?
Session 2	
Scenario	Having explored the scenario and identified challenges, participants are asked to summarise key issues and critical gaps.
Activity	All the participants discussed the challenges of implementing movement protocols and what evidence would be needed to have agreement across all parties. Having noted the challenges participants then discussed solutions to the issues raised.

EVALUATION

The aim of the Evaluation was to gather, analyse and report on the Exercise Conduct and the Exercise Aim and Objectives. The desired outcome of the Evaluation was to provide a set of recommendations, drawn from the lessons identified and data collected during the Exercise, to assist participants and their respective organisations to identify priorities to further enhance their preparedness for a biosecurity emergency response.

The Evaluation methodology adopted was an OIL (Observations, Insights, Lessons) process – gathering observations relevant to the evaluation questions from a variety of sources, analysing that data to identify key insights and themes which can translate into lessons identified and formed into recommendations for future action.



Participants were surveyed prior to and following the completion of the exercise to gauge the impact the exercise event had on their level of preparedness and to inform learnings. Evaluation results from participants are captured in Appendix 2.

Observations and Insights were analysed through the application of a P2OST2E capability framework as described below. The analysis identified common themes, positive aspects to sustain and gaps to address, relating to each element with an emphasis on the 'People', 'Process' and 'Organisation' elements in addition to considering the 'Exercise Management' element more generally. These themes formed the Lessons Identified that were developed into Recommendations. The analysis was undertaken by the Evaluator(s) during both exercises.

ELEMENT	DESCRIPTION
People	Roles, responsibilities, accountabilities and skills
Process	Policy, procedures or processes
Organisation	Structures or jurisdictions
Support	Infrastructure, facilities, maintenance
Technology	Technology, equipment, systems, standards, security, interoperability
Training	Capability qualifications/skill levels, identification of required training and development
Exercise	Exercise development, structure, management, conduct

Source: AIDR Handbook Collection, "Managing Exercises Handbook 3"

PARTICIPANTS

Participants included members of plant industry organisations that represent crops that may be impacted by *B. dorsalis*, government biosecurity/agricultural agencies including state and territory governments, DAFF, Kiwi Vine Health (New Zealand) and members from the exercise planning team. A full list of participant organisations for the Sydney and Cairns workshops is captured below.

LOCATION	ATTENDING ORGANISATIONS
Sydney	Australian Table Grape Association
	Agriculture Victoria
	Citrus Australia
	DAFF
	DPIRD NSW
	Dried Fruit Australia
	Kiwifruit Vine Health
	Melons Australia
	PIRSA
	PHA
	QDPI
	SARDI
	Steritech
	Summerfruit Australia Ltd
	Vinehealth Australia
Cairns	Australian Mangoes
	AUSVEG
	DAFF
	DPIRD NSW
	DPIRD WA
	PIRSA
	PHA
	QDPI

EXERCISE OUTCOMES AND FINDINGS

Opening session

A representative from NSW DPIRD opened both exercises with a background presentation on *Bactrocera dorsalis*. The presentation included key information on the taxonomic history, identification, and associated diagnostic challenges, host range, geographic distribution, and dispersal of this destructive fruit fly. The complexities faced when differentiating fruit flies, particularly with several cryptic species within the *B. dorsalis* complex, were highlighted.

Diagnosticians use specific morphological traits as the quickest and most reliable form of identification of adult flies. However, this can be challenging for the untrained eye, such as growers and agronomists. The visual traits used to identify *B. dorsalis* can vary greatly within the species and, in some cases, closely resemble *Bactrocera cacuminata* (Wild Tobacco fruit fly). This high level of variability between individuals could lead to misdiagnosis by growers who might mistake *B. dorsalis* for the native *B. cacuminata* or *B. musae*.

It is well understood and documented that *B. dorsalis* is highly polyphagous, has a large host range and can establish in new areas over a season. However, there is limited published information on what triggers *B. dorsalis* to move beyond an emergence site or how far they can travel, whether assisted or unassisted.

During the QLD exercise, an overview of the National Exotic Fruit Flies in Torres Strait Eradication Program was provided, detailing its role in preventing the spread of exotic fruit flies into mainland Australia. The trapping network consists of methyl eugenol and cue-lure traps on all inhabited islands and some uninhabited islands with fruit trees in the Torres Strait, as well as the Northern Peninsula Area of Cape York. When the number of target flies reaches agreed thresholds, Northern Australia Quarantine Strategy (NAQS) staff and contractors conduct bait-spraying, while QLD Department of Primary Industries (QDPI) staff and The Torres Strait Island Regional Council (TSIRC) and local contractors provide male annihilation technique (MAT) blocking to eradicate the population. Only male flies are attracted to the lures in the traps; however, so in seasons where female flies have established populations in fruit trees, it leads to larger numbers of detections and a more prolonged eradication effort.

The presentation generated good discussion, leading to a greater awareness of the unknowns regarding *B. dorsalis* and why it is a pest of significance to Australia's plant industries

Immediate impacts on industry

Objective 1 – To understand the immediate actions that would need to be undertaken by both government and industry in the early phase of a response to maintain business continuity.

Governments immediate response actions

As the impacted states in the exercise, NSW and QLD both indicated they would initiate a response under the EPPRD. Both the NSW and QLD Chief Plant Health Manager (CPHM) notified Australian Chief Plant Protection Officer (ACPPO) within 24 hours of a diagnosis. Additionally, potentially Affected Industry Parties were identified by PHA under the EPPRD requirements, ACPPO would initiate Consultative Committee on Emergency Plant Pests (CCEPP) proceedings with notifications sent to jurisdictions, the Commonwealth and AIPs.

Once the OFF diagnosis was confirmed movement controls would be put in place by both NSW and QLD, and movement of produce from the affected area would be restricted. It is likely that other states and territories as well as international trading partners would implement their own movement restrictions once the outbreak has been confirmed.

Both jurisdictions also indicated they would work with AIPs and the DAFF from the onset of the response to develop appropriate communications to both growers and international trading partners. It was also noted that communication would support unaffected states' continued access to international markets and provide confidence that the incursion was restricted to a single state and that determining its extent was ongoing. In both exercise scenarios, government and industry were clear on the communication methods to be used, many of which were existing processes implemented during biosecurity emergency responses such as national talking points.

In the Sydney exercise, due to the peri-urban location of the outbreak, participants noted that messaging would be tailored to the urban setting to engage people on the impact *B. dorsalis* would have on hosts and crop production.

Scenario escalation

In both exercise scenarios *B. dorsalis* has been detected in production areas and participants were again asked what government's immediate biosecurity response actions would be, given movement restrictions are in place within the impacted zones. Governments indicated they would implement a range of actions that were in-line with general biosecurity response actions including involving industry at this early stage with a request for industry liaison officers (ILOs).

Treatment options would be identified to make sure businesses can continue to operate. There would also be engagement with local governments and community leaders to help support and spread messaging to growers and the general public. To support government efforts Plant Industry Forum (PIF) members indicated they would consider meeting to assist in the deployment of suitable ILOs given the large number of affected industries.

The government's overview of their immediate actions raised questions for industry participants regarding the longer-term impacts of the response. These issues have been captured later in this report, however, the discussion at this point in the exercise highlighted the need for industries to have detailed information on response actions especially those that affect business continuity and for it to be available during the early stages of the response. Many of the concerns raised by industry were not about the immediate actions such as surveillance or crop destruction but looked further ahead to what was needed to treat affected crops so they could be moved to markets and for growers to continue to trade.

Industry asked:

- What crop movement would be allowed in or out of the areas placed under a biosecurity order?
- What would be the impact on production outside the affected area?
- Would proof of freedom be affected at this stage?
- What would be the impacts on international export?
- Is there a discrepancy between the information communicated locally and what is conveyed to international trading partners - are the messages given to growers consistent with those shared with trade partners?
- When should Owner Reimbursement Costs (ORC) be discussed with affected growers?

This level of questioning emphasised the importance plant industries place on business continuity with a focus on the long-term impacts of a response. Being impacted by a response was noted but knowing what was needed to continue to trade was more of a concern based on the questions raised.

Immediate impact to industry

In both exercise scenarios, it was quickly identified that for industry, there would be a high level of concern and uncertainty, and the level of impact would vary depending on seasonal variations and which industries were affected. However, for all impacted industries movement restrictions would have economic implications including loss of access to markets leading to income losses and reduced confidence from investors, lenders and consumers.

Industry noted that the fear associated with response impacts could result in grower's reluctance to report any unusual insect damage on their crops. While growers represented under the EPPRD would be eligible for ORCs, it was noted that to support growers' willingness to report, they would need a greater understanding that there were reimbursements available for specific costs and losses incurred during a response under the EPPRD. Industry participants highlighted that growers may find it difficult to understand the importance of *B. dorsalis* especially in areas or states where other fruit fly species are present. Educating growers on the importance of reporting all unusual symptoms including green fruit that has been stung and still appeared marketable was needed.

Industry participants identified several recommendations to improve communication and help alleviate grower concerns of aspects of a response process during an incursion. There may also be a need to develop additional industry-specific information on prevention and preparedness activities that growers can undertake to support business continuity, including record-keeping requirements for ORC claims.

Recommendation 1	Develop an industry engagement campaign on the impacts of *B. dorsalis,* to reduce apathy regarding fruit fly surveillance.
Recommendation 2	Provide industry with specific information on the signs and symptoms of *B. dorsalis* damage in the forms of fact sheets or webpages.
Recommendation 3	Work with fruit fly impacted industries to inform them of prevention and preparedness activities growers can undertake that may support business continuity during a response.
Recommendation 4	Work with fruit fly impacted industries to promote the PHA industry resource toolkit to help growers understand response processes and actions.

Industries identified the immediate impacts of an OFF incursion on business continuity but noted uncertainty around solutions to these impacts. This uncertainty could lead to panic, loss of social license towards response activities, or distrust in the evidence-based approach to pest eradication efforts. Greater acceptance of response activities and disruption to business continuity may occur if longer-term solutions are known and communicated to affected growers.

While the flow-on effects of trade restrictions on downstream businesses such as transport companies, supermarkets, or commercial nurseries were out of scope for the exercise, it is worth noting they would also be impacted and incur economic losses. Engaging these businesses similarly to affected plant industries would support their understanding of response actions and the implications for their businesses. It is vital these downstream industries support compliance outlined in movement protocols to ensure a response has the best chance of successful eradication.

Maintaining business continuity

With barriers to business continuity identified, participants were asked how they would engage with Affected and non-Affected Industry Parties to maintain operations.

Participants indicated that an ILO would be requested and provided to support response planning and public information functions in control centres. There would be a high level of communication with Affected industries and growers, and all participants agreed it was important to provide consistent messaging to all Affected Parties.

Referring to past responses, participants indicated there was a need for improved communication on how affected growers accessed or were provided information regarding certification and compliance to allow the movement of crops. It was also noted that greater harmonisation was needed between jurisdictions to support the movement of commodities. A centralised location where this agreed information could be found would remove uncertainty and difficulty in meeting response requirements was supported.

Recommendation 5	States and Territories to consider how they could best circulate up to date and easily accessible information on movement controls, in the event of an oriental fruit fly outbreak.

Participants agreed that having an agreed host list to identify AIPs and a non-host list to reassure non-affected industries as participants initially questioned which crops would be considered hosts and, consequently, which industries would be affected during both exercise scenarios.

Participants acknowledged there was significant time and money required to commission the development of nationally agreed host and non-host lists for *B. dorsalis* and a lack of resources from both government and industry. At the time of the exercise the Plant Health Committee (PHC) Plant Biosecurity Preparedness Working Group (PBPWG) was also looking into identifying gaps and that the development of an agreed host list for priority plant pests was on their radar.

It was also observed that pre-agreed host lists developed for Emergency Plant Pests (EPPs) were not recognised by the CCEPP in previous responses. As *B. dorsalis* is listed as a Category 2 EPP in Schedule 13 of the EPPRD, the development of agreed lists for both host and non-host crops would provide a pathway forward and certainty for Affected Parties during a response. Development of lists should be in collaboration with government and peak industry bodies (PIB) to provide certainty to Affected Parties decision-making and pre-agreement commitment that the lists will be accepted during a response.

Recommendation 6	Ensure funding and investment is sufficient to support the development of nationally agreed host and non-host lists for *B. dorsalis.*

Effective engagement to ensure a common understanding

Exercise participants acknowledged the importance of effective engagement between government and industry to ensure a common understanding and acceptance of response actions. During the exercise, various engagement processes and opportunities for improvement were identified to help support collaboration and increase responsiveness.

Feedback indicated that existing processes as part of an EPPRD response such as Affected Party representation on the CCEPP and National Management Group (NMG), and an ILO within the incident control centre would facilitate engagement and information exchange during the response. These processes also allow Affected Parties to raise questions and address concerns to improve their understanding.

Additionally, tasks performed by the Public Information function within the Incident Management Team (IMT) would be implemented. These include developing National Talking Points, industry advice updates, website updates, and face-to-face meetings with affected growers and communities.

Reflecting on past experiences, participants noted that engagement would be more successful if it was clear and free of bureaucratic language. It should provide information to manage expectations of response activities and timeframes, including those that growers may be unaware of, such as diagnostics and surveillance, and have clear expectations of their roles and responsibilities. Delivering this information to industries before a response, rather than during, would allow growers to plan ahead and understand what is expected of them. Additionally, communications should outline the compliance requirements of each biosecurity zone, with clear instructions on what can and cannot be done, and what documentation is required to meet the compliance requirements for each zone

The discussion around both scenarios highlighted the need to extend communication and engagement activities beyond signatories to the EPPRD or Affected Parties. Including urban and peri-urban communities, local councils and

community leaders and downstream businesses were some options that could be considered. In the Sydney exercise scenario, non-agricultural communities, such as backyard growers, were impacted by the response, and it was agreed that their understanding of compliance with response activities was critical. The discussions highlighted the importance of compliance across all sectors of the community, not just those directly impacted.

Participants agreed that successful response communication needed to be regular, ongoing throughout the response, repeated, delivered in multiple ways, and be a unified approach between government and industry. This consistent and unified messaging (i.e. national talking points) would allow affected growers and communities to see that responding to biosecurity incidents is a shared responsibility requiring a united effort.

Recommendation 7	Develop a communication checklist that Industry Liaison Officers (ILOs) can reference during a fruit fly response, in collaboration with industry.

Impact to market access

Objective 2 – Examine the impacts on business continuity through identifying the effects on production and movements at a regional and state level.

Consistency in restriction zone terminology

To understand what situations would require movement protocols to be developed for moving a crop or crop product, participants were presented with several scenarios where impacted growers needed to move their crops with the goal of accessing existing markets. Participants were also asked how business continuity changes, depending on where each grower was located within the zones, and how that would impact their market access.

To support discussion, participants were provided an overview of what restrictions would be put in place for each of the following zones.

Table 1: Descriptions of zone used during in each exercise. The terms used are not equivalent between Sydney and Cairns.

SYDNEY	EXPLANATION	CAIRNS	EXPLANATION
Delimitation zone	A radius around all properties where *B. dorsalis* has been confirmed	Dangerous contact premises	Properties that have come into direct or indirect contact with an infected premise or infested plants or exposed to *B. dorsalis.*
Corrective action zone	A radius extending from the discovery point, including the delimitation zone, where no host can move without CPPO approval	Restricted Area	A relatively small area (compared to a Control Area) around an Infected Premises that is subject to intense surveillance and movement controls.
Export assurance zone	A radius beyond the corrective action zone where the movement of host crops is prohibited without treatment or processing to be free from fruit fly	Control Area	An area around the restricted area where movement is controlled but not restricted. The area is intended to reduce likelihood of *B. dorsalis* spreading beyond the Restricted Area.
Control movement zone	All areas within the circle surrounding the epicentre and including all other zones, in which area freedom is suspended.	Pest Free Area (PFA)	An area where *B. dorsalis* is known not to occur as demonstrated by scientific evidence and in which, where appropriate, this condition is being officially maintained.

In the Sydney exercise scenario, participants were confused why NSW would use the zone terminology outlined in the National Fruit Fly Protocol, rather than PLANTPLAN, which is used for responding to established fruit fly outbreaks. Additionally, participants felt the terminology used in the National Fruit Fly Protocol was complicated and the names of each zone did not clearly indicate the restrictions in place or what affected growers could expect. Participants questioned why, if the response was under the EPPRD, the terminology outlined in PLANTPLAN was not used.

In the Cairns exercise scenario, terminology as defined in PLANTPLAN was used, but there was still confusion among participants about the movement restrictions that would be implemented in each zone during a response.

Participants highlighted a desire for consistent terminology to be applied across jurisdictions and understand where the terminology was sourced from.

Recommendation 8	Inform industry and jurisdictions of their obligations to report the detection of exotic plant pests i.e. *B. dorsalis* as required under the Emergency Plant Pest Response Deed (EPPRD).

Recommendation 9	Raise awareness of the Australian Emergency Plant Pest Response Plan (PLANTPLAN) as the nationally endorsed guidelines for implementing a response under the EPPRD.

Participants discussed the necessary support for crop movement in the absence of movement protocols. They agreed that business continuity depended on the permissions within each zone and the type of crop grown. For zones immediately surrounding the detection point, jurisdictions indicated that no crops would be moved to market or treatment facilities until surveillance confirmed the area was free from B. dorsalis. For other zones, participants extensively discussed the requirements to support business continuity for growers. A summary of these discussions is provided at Table 2.

Table 2: Summary of participant's discussion of requirements to allow movements for each scenario. Sydney and Cairns terms have been grouped together for ease of reference, noting they are not exact equivalents to one another.

TERM	SUMMARY
Delimitation zone and Infected Premises	No movement of affected crops to market. Only movement of affected crops to destruction or disposal sites
Corrective action zone Restricted Area	• As with the Delimitation Zone and Infected Premises, it is unlikely that jurisdictions would allow the movement of crops outside the Corrective Action Zone/Restricted Area due to the severity of *B. dorsalis* impacts. • Destruction of host crops and surveillance to ensure the pest hadn't spread would occur in these zones. • Depending on the scale of the response and at which point during the season it occurred, large volumes of host material may need to be disposed of. If there is limited capacity within the zone for disposal, movement protocols may be required to transport host material to destruction sites outside of the zone. • A delay in implementing response actions would place added pressure on Affected parties and delay a return to business for growers.
Export assurance zone Control Area	• While host movement can occur, it would be unlikely that the treatment needed to meet market access requirements was within an impacted zone and a movement protocol would be required for transportation to a treatment facility. • Secure transport would need to comply with a control order, biosecurity direction or permit, or Plant Health Certificate, which would need to be monitored to ensure compliance. • For some crops the time and cost to transport would be economically unviable especially if crops needed to travel long distances. For example, Mareeba to Brisbane or Sydney to Melbourne to be treated at an irradiation facility. • There are currently no agreed treatment options for B. dorsalis therefore it would take time to establish accepted methods agreed upon by industries and governments. • If existing treatment facilities are available, they may not have the capacity to treat the volume of affected crops and provide treatment options suitable for all potentially affected plant material.

Control movement zone
 	
Pest Free Area (PFA)
	• It was assumed that:
	  ○ If a crop was secured and compliant it could move through the control movement zone and Pest Free Area zones to treatment.
	  ○ Crops that had been treated at an approved facility could move however continued monitoring/testing may be required by movement protocols.
	• It was discussed whether consumers would need to show proof of purchase to ensure the product was from an unaffected area or identify where in the supply chain it was purchased.
	• How hitchhiker *B. dorsalis* could be managed was also discussed. This again raised the issue of host and non-host crops, noting that in past responses non-host crops were subject to response actions as they can provide a movement pathway out of the response area.

Following discussion, it was identified that movement pathways needed to support business continuity for Affected industries during a response need to be identified. Additionally, it was suggested that control measures or protocols that would enable acceptance of produce into other jurisdictions and how the affected crops would be transported to approved treatment facilities should be investigated. As part of this work, consideration could be given to matters such as:

- Allowed movements agreed upon by all jurisdictions
- Required certification to ensure compliance
- Risk assessment of possible movements and methods, with definitions outlining compliance requirements
- Development of commodity and movement-specific protocols rather than a single protocol for all industries
- Likelihood of affected crops in various production areas having access to suitable treatment options
- Feasibility of implementing draft protocols, including how compliance will be resourced and facilitated during a response.

Recommendation 10	Undertake engagement with key growers of affected hosts in national growing regions to understand the requirements of their supply chain and identify required movement pathways.
Recommendation 11	Submit a paper to the Subcommittee on Market Access, Risk and Trade to prepare pre-determined secure state and interstate transport routes to support the movement of fruit fly affected crops to approved treatment facilities or destruction sites.

Industry business continuity plans

Industry participants were asked if they had established business continuity plans and if these plans had been communicated with industry members.

Industries represented at the Sydney component of the exercise indicated they did not have business continuity plans, nor did they see it as a viable priority given the limited resources available to most PIBs. Citrus Australia is exploring business continuity as part of a response strategy being developed for the citrus industries high priority pests (HPP). Both DAFF and AgVic indicated they are also doing some work to support continuity including the development of strategies for pests that are consistently detected (such as BMSB) and are looking to simplify and expand the process.

Due to the time, cost and collaboration needed to develop business continuity plans it was suggested that pooling resources across multiple industries would be beneficial. It was also noted that HPPs such as *B. dorsalis* should be prioritised.

Implementing movement protocols

Objective 3 – Test the recommended fruit fly commodity movement protocols (from an infested area for treatment prior to going to market) that have been developed under the Biosecurity preparedness for Oriental Fruit Fly (FF18001) project

Objective 4 – Identify potential issues or critical gaps in the recommended movement protocols and solutions that could be considered by the Biosecurity preparedness for Oriental Fruit Fly (FF18001) project team.

Testing the proposed movement protocols

While objective 3 of the simulation exercise originally sought to test recommended fruit fly commodity movement controls with participants, it was determined they did not have sufficient information to test them in the scenario. Unfortunately, this means objective 3 was unable to be met. To support future efforts to develop the movement controls participants were instead asked several questions that aimed to capture what information was needed to generate functional movement protocols:

1. What considerations were needed when developing movement protocols including:
    - What will be the impacts of additional transport costs? How do these relate to seasonal timing?
    - Would additional transport movements affect crop quality?
    - How would the protocols fit into the national fruit fly management system?
2. Do current systems and processes support the implementation of movement protocols?
    - Who will enforce permitting systems, compliance checks and border checks?
    - How will this be communicated?
    - Can existing resources (transport, treatment facilities) meet demand across all affected industries and/or during peak production?

Many of the questions raised at this point in the exercise scenarios had also been considered and discussed during previous sections of the exercise.

How movement protocols could be implemented

While considering the impacts and challenges of the possible movements a clear theme emerged from participants; that without efficient access to affordable treatment options, the ability to move host crops would be limited.

Whilst considering treatment options was out of scope for this exercise, a greater understanding of what treatments were available was needed to support decision-making by all Affected Parties during a response including the feasibility of eradication.

It was discussed that currently there was no approved treatment for *B. dorsalis* in affected produce to allow for market access from an Export assurance zone/Control Area. Approved treatments currently used for other fruit fly species to support market access was not a feasible option for all potentially affected crops, were not geographically available in all growing areas and may not be approved by other jurisdictions if applied during a *B. dorsalis* response.

Additionally, if treatment options were approved it was discussed that additional costs would be incurred to meet movement protocol requirements, transport crops to treatment facilities, implement treatment protocols and transport to market. Based on the shelf life of crops post-harvest, these requirements would not be feasible for all affected crops and for many would not be cost-effective. Crops would either perish during transport, treatment would affect crop quality, or the cost of transport and treatment could not be recovered at the point of sale.

Participants also noted that if current approved treatment facilities did meet the requirements to support efforts to allow for market access during eradication, they may not have the capacity to meet demand during a response. Industry raised concerns regarding how priority would be given when a wide host list and host range are impacted. Would export or high-value crops be given priority over lower-value state-based crops?

While this exercise was being developed the Fresh and Secure Trade Alliance (FASTA) was launched and had been

exploring current treatments that were available (i.e. cold storage, heat treatment, irradiation and chemical options) and what they can be used for in various circumstances in overseas countries where *B. dorsalis* is also a horticultural pest. This is a step in the right direction, but further research is needed to ensure there is agreement from all jurisdictions, our trade partners and the Australian Pesticides and Veterinary Medicines Authority (APVMA).

Recommendation 12	Explore accepted control options for *B. dorsalis* including existing Interstate Certification Assurance (ICAs) for QFLY and or Medfly and determine if they can be adapted for *B. dorsalis.*
Recommendation 13	Considering the outcome of Recommendation 11, review and update the draft movement protocols developed under the Biosecurity preparedness for Oriental Fruit Fly project (FF18001), in consultation with state and territory governments and affected industries.

Secure transport pathways need to be identified to allow the movement of impacted crops from affected areas to treatment facilities or unaffected crops through affected areas to market. These activities also need to be supported by inspection protocols that are agreed to by industry and resources allocated to enforce compliance activities (e.g. staff).

The general public and consumers were also identified as barriers to implementing movement protocols. It was noted that during other responses, gaining the approval of those outside horticultural industries and ensuring their compliance when following response activities was essential to effective eradication. Communication is needed to ensure the general public understand the importance of complying with biosecurity orders during a response. Communication strategies need to educate and target those not directly involved in horticultural industries to ensure compliance across all sectors.

Participant feedback and exercise discussions noted that the National Diagnostic Protocol (NDP) for *B. dorsalis* as well as other exotic fruit flies needed to be developed and maintained. For states such as QLD where *B. dorsalis* closely resembles native fruit flies and there is a high volume of insects collected in traps, a quick, reliant NDP is needed to provide rapid diagnostics during an incursion and to meet proof of freedom for our trading partners. This diagnostic work is currently being undertaken by the FASTA.

Recommendation 14	Support discussions through the Subcommittee on Plant Health Diagnostics to develop a National Diagnostic Protocol for *B. dorsalis* and other exotic fruit flies.

FEEDBACK ON EXERCISE MOTUS

To evaluate the success of the simulation exercises, participants were asked to fill out both pre and post workshop questionnaires. Part of this evaluation included post workshop feedback on the following questions:

1. What actions or processes would improve the movement restrictions?
2. What are the greatest impacts movement restrictions will have on business continuity?
3. What actions or processes would improve the likelihood of the industry meeting the movement protocol requirements?
4. What information or resources do you feel would assist industry to be better prepared? E.g. guidelines, background information, reference materials or on-farm processes
5. What challenges do you see?
6. What solutions do you see to these challenges?

While this feedback was not mandatory, and was open ended several general themes were presented from participants.

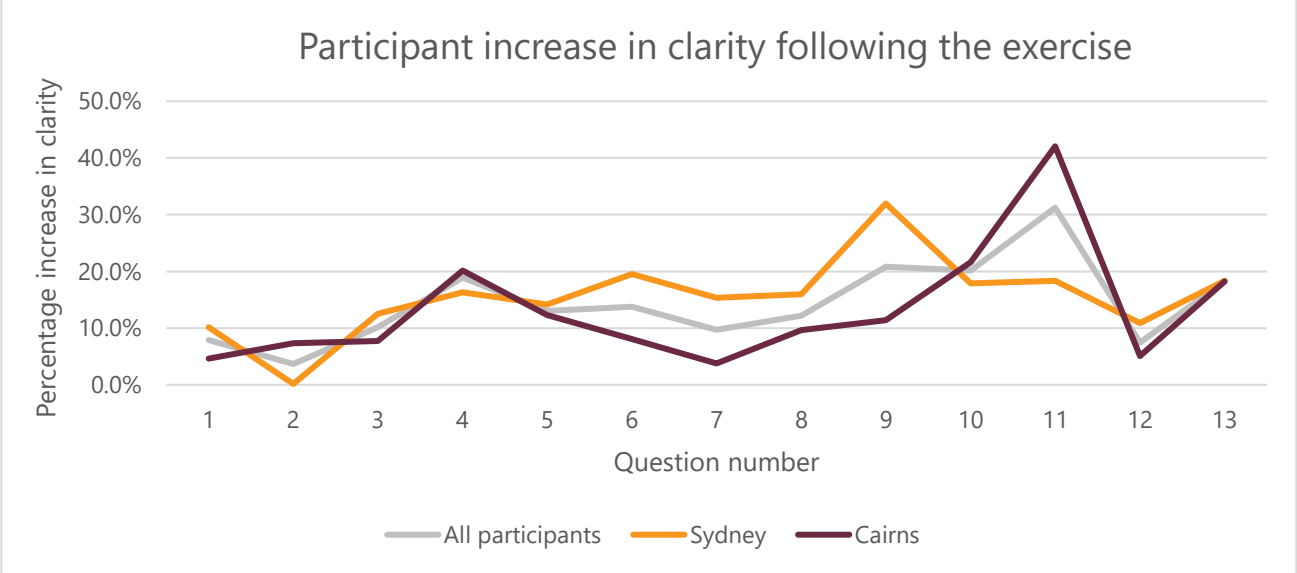
- The lag time in implementing the protocols would impact crops getting to market therefore impacting quality and marketability. This would cause greater economic stress to affected industries as well as impact the supply chain and consumer confidence.
- Ability to access freight options when needed.
- Unclear treatment conditions and bottlenecks in accessing possible current treatment facilities due to limited capacity and volume of affected crops.
- Cross-jurisdictional agreement of movement protocols during a response.
- An increase in processes, forms permits and associated costs that industry and growers will need to absorb to comply with these requirements.
- The ability of business to survive the loss of contracts and income associated with prolonged responses.
- Unclear movement pathways for growers during a response.

APPENDIX . PARTICIPANT FEEDBACK

Participants were asked to give a rating of very clear, clear, unsure, unclear or very unclear to the following questions before and after the workshops. The percentage increase in understanding between the first and second survey is shown in Table 3.

Questions:

1. Objectives of the exercise
2. Immediate biosecurity emergency response actions by governments
3. Impacts on industry during a biosecurity emergency
4. Initial actions by government and industry to maintain business continuity
5. Engagement process between government and industry stakeholders
6. Terminology used to determine the various zones during a response
7. Business continuity in different zones (containment, buffer, surveillance)
8. Impacts on market access during a biosecurity emergency
9. Established business continuity plans within the industry
10. How the movement protocols would be implemented
11. Current systems and processes would support the movement protocols
12. Challenges government and industry face during a biosecurity emergency
13. Potential solutions to implement during a biosecurity emergency



Overall, there was an increase in participant's knowledge in all areas however questions 9 and 11 showed the greatest increase. At the other end of the scale understanding of the exercises objectives, knowledge of government's immediate biosecurity response actions and challenges government and industry face during a response showed the lowest improvement in clarity.

Below are additional comments made by participants reflecting on their involvement in the exercise.

Having worked through the scenario, what actions or processes would improve the movement restrictions?

- Having a clear understanding of treatments available and where those treatment facilities are.
- Develop protocols that are O-fly specific from national protocols.
- What movements could be permitted?
- Chemicals accepted. APVMA permits.
- Movement ICA's in place - transit treatment.
- Communication needs greater industry involvement on the ground and in control centres.
- Movement controls need further work to define consensus across stakeholders or movement protocols.
- Interstate agreements negotiated in place prior to potential outbreak.

- Secure pathways to access treatment options and capacity.
- Established templates and databases for comms and stakeholder groups.
- Government staff resourcing to assist industry with advice
- Clear instructions, communications about what growers can and cannot do, from government to industry.

What actions or processes would improve the likelihood of the industry meeting the movement protocol requirements?

- Having prior understanding of what those protocols will be.
- Availability of suitable treatment options that are cost effective.
- Clear access pathways to treatment facilities.
- Very quick advice on movement protocols being communicated to industry and constantly reinforcement of the protocols.
- Treatments need to be practical and committed in advance so that industry have ability to plan for them.
- Information, incentives, easy-to-fill-out applications for movement (and easy to find, too!)
- Conditions that don't change and certainty on what the future conditions might look like under an evolving (expanding) response.
- Risk based approach to movement of produce.
- Data sharing for decision making.

What information or resources do you feel would assist industry to be better prepare? (EG guidelines, background information, reference material or on-farm processes).

- Clear guidelines on acceptable treatments and movement protocols prepared in advance.
- APVMA permits ready.
- Reference fact sheets on pest prepared and out now.
- Information on what an oriental fruit fly outbreak would mean for individual growers.
- Understanding specific costs for alternative pathways.
- Create situational awareness. Many growers live with Queensland fruit fly so what makes oriental fruit fly special?
- Updated and maintained NDPs and standardised and centralised reference material.
- Accurate and up-to-date host and non-host list.
- A response plan that already exists and includes communication information that is updated every three to five years.

What challenges do you see?

- In the heat of battle, it's a challenge to get information to those who need it. Need to build awareness in peace times.
- Compliance of the public and growers ignoring their responsibilities.
- Transport logistics, understanding of movement protocols and their role.
- Inconsistency between states, detections likely to be in urban rather than production areas and disconnect with urban communities.
- Challenge to finding efficacious treatment if current fruit fly treatments are less than 99.99% effective.
- Complexity of stakeholders.
- Lack of technical understanding and scientific review of treatment options.
- Prioritisation of treatment facilities if large amounts of host material are caught within control zones and treatment facilities can’t meet demand, will market forces determine prioritisation or government intervene?
- Big holes in preparedness. No firm position on dispersal, no clear host list, affected parties or treatments.
- Speed of the response, Government not working together, Industry not working together.
- What happens if *B. dorsalis* gets into World Heritage rainforest?

What solutions do you see to these challenges?

- Simulation exercises in regions with large number of affected industries.
- Start, discussions with others in community/supply chain, not just industry and growers.

- Engagement and participation in the IMT.
- Making preparedness activities a priority.
- CPHOs to all endorse a consistent approach.
- Pre outbreak agreements between stakeholders to ensure continuity and uniformity.
- Research on chemicals or literature review on efficacious treatments.
- Research on host lists.
- Prioritisation may need to consider more than just product value but also options available. For example, some high value products may have multiple treatment options available and therefore might not warrant prioritisation over lower value products.
- Investment in research.
- Collaboration between jurisdictions on issues related to preparedness
- Bringing more industry bodies to the table. Survey to growers for feedback on ways forward. Best ways to engage for compliance.
- Keep funding the Torres Strait program.
- FASTA research, cross-jurisdictional projects, data and information sharing,
- Agreed strategies/national plans.

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