

**2012/030 Prawn Superpowers Summit
– enhancing awareness of emergency
aquatic animal disease response
arrangements for the Australian
prawn farming industry**

Matt Landos, Helen Jenkins

March 2013

FRDC Project No. 2012/030



AUSTRALIAN
**Prawn
Farmers**
ASSOCIATION



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2012/030 Prawn Superpowers Summit – enhancing awareness of emergency aquatic animal disease response arrangements for the Australian prawn farming industry

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for the Australian prawn farming industry**

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2012/030	Prawn Superpowers Summit – Enhancing awareness of emergency aquatic animal disease response arrangements for the Australian Prawn Farming Industry.
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1. NON-TECHNICAL SUMMARY:

The Australian prawn farming sector provides significant income to regional economies, particularly parts of Queensland. The entrance of an exotic disease can potentially cripple the industry. Hence, it is prudent to reduce the risks of disease incursion domestically and on-farm.

Since 2010, a number of disease outbreaks have been reported within the prawn farming industry in South-East Asia. This highlights the importance of biosecurity (the practice of disease prevention and management) within the industry. The summit assisted in raising awareness of exotic diseases and strategies to prevent and control emergency disease events.

Engagement of the industry for on-going disease surveillance is important. The summit provided further education to improve current practices on-farm to aid in disease surveillance. As the project had an interactive framework, it encouraged industry to help identify areas of improvement in the current system.

The summit was run on the 31st July 2012, and provided a platform for the collaboration of government workers, farmers, researchers and industry. Approximately 35 people were in attendance for the biosecurity summit, and were provided with case studies and examples of the consequence of emergency aquatic animal disease outbreaks suffered by international industry. The necessity of disease prevention was the focus throughout the summit as the limitations of treatment and control were detailed. Applied prevention measures for Australian farms were highlighted.

2. ACKNOWLEDGEMENTS:

The following presenters supported the summit, and provided perspectives from their international, national, state and research perspectives on important biosecurity measures and responses for the prawn industry. Their collective contribution added substantially to the information communicated on the day. Their support is gratefully acknowledged.

1. Dr Matthew Briggs, Shrimp Farming Consultant, Thailand.
2. Dr Ian Anderson, Biosecurity Officer DEEDI, Queensland.
3. Katie Humphrey, Commonwealth Department Agriculture Fisheries & Forestry.
4. Professor Garry Lee, University Western Australia, WA.

3. BACKGROUND:

The Australian prawn farming sector is a significant contributor to regional economies, particularly in Queensland. The viability of the industry is contingent on maintaining its relative disease-free status with respect to major viral diseases which have been documented to cause wide-spread losses in shrimp culture internationally. Ongoing vigilance is essential to ensure that Australia does not become another of the countries to become infected by catastrophic viruses such as white spot. Maintaining regard to biosecurity measures to prevent disease incursion, and disease spread will support the ongoing viability of the prawn farming industry.

There have been widespread and severe outbreaks of WSSV internationally:

24 April 2011	Saudi Arabia
23 September 2011	Mozambique
3 October 2011	Mexico
30 November 2011	Brazil
4 December 2011	Saudi Arabia – Jazan

In September 2010, an infected container of shrimp carrying white spot was inadvertently released into the Australian market place. This highlights the need for farmers to be vigilant in ensuring the industry remains free from WSSV and other exotic and domestic diseases, through maintaining strong biosecurity measures both at Australia's borders and within farms.

4. NEED:

Given the widespread international outbreaks (2010-2012), industry partnered with Dr Matthew Landos to prepare and provide a summit to:

- a. Connect a host of local and global key experts in the aquaculture field, to educate and engage with domestic producers in biosecurity concepts;
- b. Provide opportunity for industry to identify improvements in the current system and communicate these issues to relevant Government agencies;
- c. Assist in raising awareness of the risks and processes which are in place to prevent and control emergency diseases should they occur.

Please see appendix for summit presentation list.

5. OBJECTIVES:

- Raise awareness of prawn diseases and emerging risks entering Australia
- Identify and understand the processes in place to respond to emergency diseases should they occur
- Identify any improvements in the current system and communicate these issues to industry and Government agencies
- Working together to ensure industry preparedness to respond to disease risks in Australia

6. METHODS:

1. Interactive session on the potential risk pathways for incursion of disease on-farm
 - a. Biosecurity measures and practices on-farm and at hatchery level
 - b. Experience of international speakers drawn to determine successful and unsuccessful management of disease outbreak
2. Informative session outlining Australia's current disease status
 - a. Background for further surveillance and engagement of industry
3. Interactive session to determine risk mitigation measures at farm level
 - a. Response to suspected disease outbreak on-farm
 - b. Response from the government (state and commonwealth level)
4. Informative session on current disease surveillance techniques and programs
5. Discussion within industry to outline areas of improvement and further research/development

7. RESULTS OF SUMMIT:

1. ***To raise awareness of prawn diseases and emerging disease risks entering Australia.***

Presentations were provided on the following topics:

- a. Emerging diseases of concern of wild stock and prawn farms internationally
- b. Prawn disease status in Australia

The summit highlighted the importance of biosecurity to the industry by using examples of emergency disease outbreaks faced by other countries and in other aquaculture industries.

Talks provided information on international emergency responses associated with disease outbreaks, their limitations and possible improvements in practice. Extrapolation and incorporation of these experiences into both national and on-farm biosecurity planning was encouraged.

Dr Matthew Briggs, an invited international expert, provided the summit with considerable current knowledge on emerging prawn diseases, outlined the following:

- a. Potential causes of disease (management, environment and pathogens);
- b. Descriptions of known and emerging disease syndromes (EMS, white faeces disease, loose shell syndrome, white spot disease); and
- c. Outline viable management options.

2. Identify and understand the processes in place to respond to emergency diseases should they occur.

Biosecurity principles

The principles of biosecurity were outlined to provide a platform for discussion. Dr Matt Landos discussed on-farm emergency disease responses, and included the following key points:

- a. Concepts in biosecurity including disease prevention, detection, eradication and control;
- b. On-farm biosecurity;
- c. Identification of risks, risk pathways and risk mitigation options at critical control points;
- d. Contingency planning and decision-making.

Disease response and management - State Government perspective

State and Territory Governments in Australia have primary carriage for disease control in aquaculture industries. With assistance from the Commonwealth, all have developed emergency disease response plans, and participated in training exercises simulating disease outbreaks. Dr Ian Anderson presented detailed information on the State's response to disease outbreaks including the procedures associated with the management of emergency disease outbreaks:

- a. Tracing;
- b. Surveillance;
- c. Destruction/disease eradication;
- d. Treatment of prawns and products;
- e. Disposal of animals and by-products;
- f. Decontamination;
- g. Vector control;
- h. Sentinel stock and restocking; and
- i. Increasing public awareness.

Disease response and management - Commonwealth Government perspective

Katie Humphrey (DAFF Commonwealth Government representative) and state representatives discussed their role in an aquatic animal disease emergency, providing information on the following:

- a. Defining freedom from disease;
- b. Disease outbreak response;
- c. Division of responsibilities;
- d. Steps taken in the development of cost-sharing agreements

3. Identify any improvements in the current system and communicate these issues to industry and Government agencies:

Improvements identified to facilitate emergency disease responses included:

- a. update in field guides to diseases significant in Australia and disseminating NACA disease cards;
- b. regular simulation exercises involving industry to build greater familiarity with disease reporting and response frameworks of the State and Commonwealth Governments (AQUAVETPLAN manuals)
- c. support for ongoing diagnostic networks encouraging sample submission and ensuring communication of results back to the farm
- d. greater integration of field veterinary extension services to communicate and translate laboratory results into on-farm disease control and prevention measures

The need for on-farm biosecurity protocols individually tailored for each facility was apparent. However, a limitation is cost. Sharing these costs between beneficiaries for annual auditing and the development of biosecurity/health management plans could potentially encourage better practices throughout the industry.

4. Working together to ensure preparedness to respond to disease risks in Australia

The summit brought together staff from relevant government bodies, industry, aquatic animal health professionals and researchers to collectively reach a better understanding of disease risks, disease prevention methods, disease management and disease response at the nation and on-farm level.

The speakers provided detail about on-farm biosecurity measures and the necessity of prompt response from farms to State authorities to a suspected emergency disease, using both local and international examples. The summit further reinforced the pivotal role of biosecurity in supporting existing industry production and growth.

The overall response from the industry was positive, and there were clear outcomes from the summit outlined below:

5. Strategies identified to prevent spread and eliminate WSSV:

The following strategies were identified with the aim to be incorporated by industry in the event of a WSSV outbreak to prevent spread and eliminate WSSV:

- a. **Tracing: to determine all confirmed and potential locations of the virus**
 - i. Inputs as a source of the virus
 - ii. Origin of diseased prawns
 - iii. Movement of broodstock, PLs and live prawns to other farms
 - iv. Dead uncooked prawns used for bait
 - v. Effluent from ponds and processing plants
 - vi. Farm vehicles moving off the farm
- b. **Surveillance:**
 - i. By clinical signs and lab testing
 - ii. Define extent of infection
 - iii. To detect new outbreaks
 - iv. Info used to define RA and CAs

- v. Monitor progress and success of eradication strategy

c. Destruction of stock:

- i. Must be hygienic and humane
- ii. No spillage of infectious waste
- iii. Avoid harvest stress to limit virus shedding from stressed prawns
- iv. For crustacean destruction, please refer to DAFF AQUAVETPLAN Destruction Manual at the following website:

<http://www.daff.gov.au/animal-plant-health/aquatic/aquavetplan/destruction/contents>

d. Treatment of prawn products and by-products:

- i. Emergency harvest: Cook at 80 degrees celsius for 4.5 minutes or at 60 degrees celsius for 20 minutes.

e. Disposal of animal products and by-products

- i. Important to decrease infection pressure on site (IP and DCPs)
- ii. Burial - only real option but also burning, cooking, ensilage
- iii. Burial sites must be chosen to ensure no contact with waterways or vectors
- iv. Transport to burial sites
- v. Detailed in AQUAVETPLAN

f. Decontamination

- i. Need to work out on a case-by-case basis depending on IP/IA
- ii. Water
- iii. Ponds
- iv. Equipment, tanks, buildings, nets etc
- v. Need to cover legal issues with chosen disinfectant

g. Vector control

- i. Netting over ponds to keep birds from eating dead and/or infected prawns
- ii. Fences around ponds to prevent invasion by mudcrabs and other crustacea

h. Sentinel and restocking

- i. Necessary to follow a fallowing period, and further ~4 weeks following quick-lime and drying
- ii. Restocking on-site will need to be assessed on a case-by-case basis
- iii. Live prawns can be stocked, must remain virus-free (following surveillance and testing of stock)

i. Public Awareness

- i. Emphasise that WSSV is harmless to humans. Incurring this disease can cause a negative marketing effect on all seafood.
- ii. Emphasise to public not to use Green prawns for bait

8. BENEFITS

1. Sectors that have benefited from project:

a. Prawn farming industry:

- i. Enhanced awareness of the need for prudent biosecurity measures;
- ii. Further education regarding disease detection and management
- iii. Awareness of the benefits of a cost-sharing agreement to support disease responses, should they be required.

- b. Prawn wild harvest and importation industry
 - i. Enhanced awareness of risks associated with movement of products into and within Australia.
- c. Government bodies
 - i. Improved relationship with industry to facilitate emergency disease response.
 - ii. Improved reporting of disease by farms, maintains Commonwealth's responsibility to undertake national surveillance for OIE listed diseases
 - iii. Improved awareness of international disease threats to the prawn industries to permit review of biosecurity arrangements at the border with respect to movement of crustacean commodities
 - iv. Opportunity to liaise with APFA in an interactive space
 - v. Improved awareness of plans to be implemented by APFA in response to disease outbreak
- d. Consumers
 - i. Greater security of prawn production through prevention of disease incursion, leads to better food security for consumers.

9. FURTHER DEVELOPMENT

1. Further development in implementation of cost sharing agreements between industry and government was identified during the summit as being required.
2. It is recommended that a project be drafted for the creation of individual farm-based biosecurity protocols based on the risk assessment of each facility and its operations. This will require an on-site visit and discussion with personnel to implement a practicable biosecurity/health management plan. This could be integrated with broader staff training programs.
3. Reinforcement of methods outlined in the AQUAVETPLAN and its principles through use of simulation exercises. This is necessary on an annual basis to keep personnel informed about changes to the contingency plan, and to emphasise the importance of biosecurity and its role in the long-term success of the prawn industry.
4. Industry participation in decision making during an emergency response - this was raised by Commonwealth and State representatives, and further progress is to be provided in a report from the *Department of Agriculture, Fisheries and Forestry*.
5. Ongoing Commonwealth support to bring international experts to the annual APFA conference to provide updates on emerging international prawn diseases and management programs from Americas and Asia, due to the rapidly changing nature of the disease status of Asian prawn stocks, and their near proximity to Australia.

APPENDIX



Prawn Superpowers Summit: Emergency Disease Response Summit Draft Agenda 31st July 2012.

Time	Topic	Presenter
08:50-09:00	Welcome address	Dr Matt Landos/Helen Jenkins
09:00-10:00	Emerging disease of concern to prawn farming and wild stocks	Dr Matt Briggs
10:00-11:00	Farm level biosecurity measures	Dr Matt Landos
11:00-11:20	Morning tea	Morning Tea
11:20-12:00	Australia's disease status and risk pathways	Dr Matt Landos
12:00-12:30	Emergency disease management- The role of the Commonwealth	Katie Humphrey
12:30-13:30	Lunch	Lunch
13:30-14:00	Emergency disease response- The role of the State in identification/control/eradication using hypothetical case study	Dr Ian Anderson - DEEDI
14:00-14:30	Managing serious prawn diseases in Asia or America: Case study 1: TSV, WSD, IMNV, YHV	Dr Matt Briggs
14:30-15:00	Using Physi-Trace technology to assist in tracing outbreaks	Professor Garry Lee
15:00-15:15	Afternoon tea	Afternoon Tea
15:15-17:00	National Prawn Strategy release	Helen Jenkins