



Australian Government
**Fisheries Research and
Development Corporation**



FRDC project 2009/315.10 Aquatic animal health training scheme - Updating and improving existing practical skills and knowledge to support the effective delivery of vocational aquatic animal health



Aquatic Animal Health training workshop participants

Photo: By Joe Coco

Draft submitted: 28 November 2011

Final Report submitted: 29 November 2011

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FINAL REPORT (DEVELOPMENT AWARD)

AWARD CODE and TITLE

2009/315.10 “People development program: 2011 Aquatic animal health training scheme - Jacqui Johnson”

AWARD RECIPIENT: Jacqui Johnson
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ADDRESS: North Coast TAFE – Trenayr Campus
Locked Bag 5
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HOST ORGANISATION:

Financial host: North Coast TAFE

Course host: North Coast TAFE

DATE: Final Report submitted TBA Draft submitted 28 November 2011

Acknowledgments

I would like to acknowledge the support of:

- The Department of Agriculture, Fisheries and Forestry (DAFF) and the Fisheries Research and Development Corporation (FRDC) for their funding of the Aquatic Animal Health Training Scheme and general assistance;
- North Coast TAFE for their in kind financial assistance;
- Vocational trainers who attended the workshop and their respective employers for funding their attendance
- Head Teacher Lisa Terry for her encouragement and support during the application process, and smoothing the way for this to happen;
- Janet Clark for her support in all matters of administration and her support
- Debbie Hinde and Lyn Withey, for their never ending technical support and support during and after the workshop

ACTIVITY UNDERTAKEN

We hosted a 2 day workshop for vocational trainers to update and improve their practical skills and knowledge in fish health management facilitated by Dr Landos.

OUTCOMES ACHIEVED TO DATE

As a result of participation in the workshop vocational trainers were able to:

Update their knowledge of bio-security, disease identification on farm, monitoring programs and outbreak investigation including disease agents and treatment options

Practice and improve their practical skills as demonstrated by Dr Landos in areas of:

- practical techniques for fish health investigation, including collecting samples, examining and interpretation of the samples. This included best practice sampling techniques and preparation for crustacean and fish.
- Animal welfare and ethics considerations
- Protection of the worker

Through discussion during the workshop trainers were able to:

- Improve their understanding of the complexities and practicalities of fish health investigation, which in turn informs teaching practice;
- Strengthen the relationship between vocational trainers around Australia

Enhance course delivery:

- Update and improve learning materials used for delivering Certificate II, III, IV, Diploma Seafood Industry (Aquaculture) certificates;
- Improve delivery of practical courses for aquatic animal health units for Certificate II, III, IV, Diploma Seafood Industry (Aquaculture) certificates

Background

There is a lack of practical skills for on farm fish health investigation and disease management. The National Aquatic Animal Health Technical Working Group (NAAH-TWG) April 2008 workshop highlighted - 'There is ongoing concern that there are too few suitably trained and accredited aquatic animal health professionals to service Australia's fisheries and aquaculture industries and to ensure succession to a new generation of aquatic animal health professionals.' More recently Dr John Humphrey's presentation at the 2010 Australasian Aquaculture Conference 'Disease investigation in finfish - demystifying the diagnostic process' discussed the need at an industry level for an improvement in investigating fish health skills across the aquaculture industry.

Every state of Australia has an aquaculture industry which requires effective health investigation and disease management. Across Australia aquatic animal health training is being delivered to industry and future stakeholders by vocational trainers using units from the National Seafood Industry Package. Aquatic animal health training is also occurring on the farm informally by other industry professionals.

There is a need to bring together those delivering training, to allow them to update and improve their knowledge and practical skills to enable better delivery and ultimately better outcomes for skill development in farm fish health investigation and disease management to support Australia's fishing and aquaculture industry.

Need

Vocational trainers and industry participants can share their updated and expanded knowledge and skills with new entrants, current stakeholders and host organisations in the aquaculture industry through improved delivery of the relevant SFI04 SFI11 units or on farm training. The workshop information would also improve (where relevant) course materials and resources for aquatic animal health training at the vocational level.

The knowledge from the workshop can be distributed to the wider Aqua-Ed community.

The training will also support the introduction of the new Seafood Industry training package which has just been released.

Objectives

To enable vocational trainers and industry participants an opportunity to update and improve existing practical skills and knowledge in fish health management.

To support the effective delivery of the current and future Seafood Industry Training Package (SFI04 & SFI11) health units.

Methods

Aquatic animal health training workshop

Venue: Trenayr campus TAFE, Grafton NSW

No of participants: 9 vocational trainers from NSW, SA, QLD, VIC, WA and an industry participant.

Purpose: To provide vocational trainers with an opportunity to update and improve existing practical skills and knowledge to support the effective delivery of the Seafood Industry Training Package (SFI04 & SFI11) health units.

Workshop outline

Biosecurity

Disease identification on farm

Monitoring programs

Outbreak investigation

For key species (this was determined by pre workshop survey*) aiming for content on, crustacean and fish.

Disease agents – for crustacean and fish (as identified by participants in pre workshop survey to identify needs*)

Disease identification practical session – for crustacean and fish (determined by pre workshop survey*)

Delivery ideas session - What to do with this information?

Share of ideas on how to enhance educational delivery to be more effective in getting updated or new content related to health units from this workshop to our learners/industry and incorporating it into delivery and assessment practice.

*The pre workshop survey compilation is included as an Appendix attachment

Results/Discussion

What did you learn?

Participants were asked to complete a survey. Nine completed surveys were returned, the results are presented below:

Workshop topic area:	Reinforced what I already knew	Has added to my knowledge, skills & currency	All new knowledge & skills for me
Biosecurity	3	6	

Summary of participant comments:

My understanding of the importance of biosecurity has improved. My training will be improved to incorporate better biosecurity practices – more relevant & better biosecurity skills.

The info on entry points and vectors has made me re-think the way we operate our biosecurity protocols. Also the info on ornamental imports as an entry point for exotic disease was any eye opener.

How important this is for the future of our country and the world.

His definition challenged and changed definitions found elsewhere == for the better

Increased my understanding of biosecurity, and presented some practical real examples

Workshop topic area:	Reinforced what I already knew	Has added to my knowledge, skills & currency	All new knowledge & skills for me
Disease identification		9	

Summary of participant comments:

I improved my skills by observing how a Fish-Vet goes about disease ID and histological tissue sampling. I will pass these skills onto my students.

All of the material on prawn diseases was new to me and I was unaware of the number of viruses prawns can get and the global impact of these viruses.

Understanding correct procedures. New developments and outcomes.

The prevention measures discussed and practised were very useful.

Workshop topic area:	Reinforced what I already knew	Has added to my knowledge, skills & currency	All new knowledge & skills for me
Disease identification practical session	1	8	

Summary of participant comments:

Improved skills in necropsy procedures and biopsy preparation. My students will get these skills.

I have done quite a lot of disease identification relating to fish in the past. But prawns are unknown water for me, which I found fascinating. I also now have a better knowledge of "fixing" samples.

Had not done an official fish dissection.

It was good to prepare samples under the watchful eye of an expert, to confirm my skills.

Workshop topic area:	Reinforced what I already knew	Has added to my knowledge, skills & currency	All new knowledge & skills for me
Monitoring programs	1	8	

Summary of participant comments:

I noted several aspects that I will incorporate into my student "prac roster": accurate record keeping and mandatory entry and analysis of the data records – are two things I picked up.

I learnt that you need to be on top of an outbreak and get to it before you can see the obvious signs.

Continual improvement.

How will you use what we did at the workshop to enhance course delivery?

Workshop topic area:	Will use all the time	Has added to my knowledge and skills	Limited use in my current delivery
Biosecurity	8	3	

Summary of participant comments:

I will enhance my training materials to include the biosecurity material presented by Matt Landos.

I will update our biosecurity SOPs and use them as examples to give to students.

Vital to every aspect of the industry.

Will increase coverage in learning materials/classes.

I deliver Diploma level 'Plan stock health plan'

Bio-security field day on best practice would be a good addition.

Workshop topic area:	Will use all the time	Has added to my knowledge and skills	Limited use in my current delivery
Disease identification	8	2	

Summary of participant comments:

I will enhance my training to incorporate the procedures and practices and the resources that Matt Landos provided during the workshop.

I will tell students the importance of record keeping and to take photos and keep samples when trying to ID diseases.

Be on watch for signs all the time.

Will increase coverage in learning materials/classes.

Workshop topic area:	Will use all the time	Has added to my knowledge and skills	Limited use in my current delivery
Disease identification practical session	5	4	

Summary of participant comments:

I will incorporate the practices and procedures that I learnt from Matt into my training materials. They are industry relevant.

I will now incorporate some work on fixing sampling for pathological testing into our prac classes.

Using correct procedures.

Will increase coverage in learning materials/classes.

Workshop topic area:	Will use all the time	Has added to my knowledge and skills	Limited use in my current delivery
Monitoring programs	4	5	

Summary of participant comments:

I will incorporate procedures and practices into my daily student practical roster (simulated work place) as suggested by Matt Landos.

Ensuring records are not just taken for the sake of it.

Will increase coverage in learning materials/classes.

Did we achieve the workshop objective: To enable vocational trainers and industry participants an opportunity to update and improve existing practical skills and knowledge in fish health management. ?

There was overwhelming agreement amongst participants that the workshop objective was achieved.

Summary of participant comments:

I believe that objective was achieved very comprehensively. I am confident that the skills and knowledge that I learned will enable me to deliver what the industry needs to a high standard.

With SFI11 just published on training.gov.au it is time to update my fish health units. By learning from a practising fish vet I have learned what a spread of industries – not just one (if I had validated my resources with a fish farmer). I believe the workshop will help all delegates in meeting VQF requirements, especially standard 1, elements 1.2 (industry consultation), 1.4 (trainer currency) & 1.5 (validation of materials, and standard 3 element 3.2 (continuous improvement).

I believe the objective was achieved. This workshop gave everyone involved the opportunity to network and share their knowledge and skills with each other. Everyone was able to contribute something of relevance from their industry sector and ultimately “train the trainers”.

All areas were achieved.

Yes, the workshop was really informative. Matt’s case studies really put everything in perspective & really showed the importance of monitoring & looking at ALL factors.

The workshop allowed me to update currency by reinforcing the importance of biosecurity, practical dissection (correct procedures) relating it to the training package.

I have increased and improved my skills during the workshop. This will allow me to improve my delivery to students and enhance their experience.

The workshop was very useful to me as a trainer. Diseases affecting Barramundi and Yellowtail Kingfish were discussed at length and are very topical to ACAR and the industry if services in WA.

Benefits and Adoption

Key industry sectors that vocational trainers are working with are identified below.

Industry sectors identified:

WA: Hatchery Finfish, Finfish & Freshwater Crustaceans.

SA: Freshwater RAS Inland Barramundi farm, Marine Seacage Finfish growers

QLD: Prawns and Barramundi; Vocational training, Agri-Food Skills Australia Ambassador; Marine, Ornamental and Freshwater fish

VIC: Trainees at various farms around Vic covering species such as Trout, Murray Cod, Eels, Abalone, Barramundi.

NSW: Silver perch, some students involved in prawns. Freshwater and marine fish.

How will your attendance at this workshop benefit the industry sectors you are working with?

Summary of participant comments:

I learned skills that I can pass onto my students, trainees and existing workers. My knowledge and skills are refreshed and updated. I can better target my training to areas of need within my industry sectors.

Assist in skills transfer.

Very timely and valuable update of delivery materials and practical learning activities for skill transfer to industry sectors.

Allow me to update learning materials and practical classes to enable students to benefit from my attendance at the workshop. Confirmation of my current skills as valid.

Pass on improved techniques to students thereby to industry through my teaching.

I plan to incorporate the information & techniques used at the workshop into notes/handouts & demonstrations relating to the relevant units of the training package.

This workshop will also help with updating course material and practicals for our Aquatic Animal Health short course.

By improved teaching techniques.

Educate and advocate the importance of biosecurity & sustainable food security for the world.

Will help focus on disease prevention, symptoms priorities.

This opportunity has allowed me to update and expand my skills and knowledge in aquatic animal health training. Through my teaching role as a TAFE teacher new entrants and current stakeholders in the aquaculture industry will be able to benefit directly. It will also allow me to provide effective advice to the industry in general when called upon.

Further Development

Participants were asked where to from here?

There was a recognised need by participants for more ongoing training in aquatic animal health training to support vocational trainers and their delivery.

Summary of participant comments:

This is the first nationally coordinated professional development workshop conducted in Australia for trainers. This is so vital to educators who educate the future of our industry.

This workshop was by far the most interesting and rewarding I have attended. I could listen to Matt Landos speak about epidemiology and his on-going fight against aquatic pollution for hours. It was great to meet everyone and I think that the whole networking process is invaluable. Thanks to everyone involved.

I also think it would be a good idea to make the Aquatic Animal Health Workshop and annual event to keep up to date with any developments.

It would be good to try and quantify the benefits that this training returns to industry. This is obviously extremely difficult, but a demonstrated "return on investment" would make future workshops more likely to be approved.

Thank you very much FRDC, TAFE NSW, Jacqui J, Matt Landos and the delegates. Thanks to TAFE SA for allowing me to attend.

It was recognised by Dr Matt Landos after the workshop; "There certainly seemed to be a need to gather up the national TAFE expertise more regularly, and a workshop seems a good way to facilitate these sorts of interactions."

We would like to see a program that looks specifically at supporting advanced training in fish health investigation customised to the VET sector. This would allow more accurate dissemination of aquatic animal health training to occur to new and current stakeholders around Australia. There by at industry level improving the development of investigative fish health skills across the Australian aquaculture industry.

Possible future training options – An idea?

In order to take this program further, participants expressed a keen interest in attending a workshop with a focus on updating knowledge and skills covered at this workshop. It would also need to include a practical workshop session on higher practical skills performed on farm* by technicians such as:

Summary of participant identified workshop areas:

- Simple staining techniques
 - Methods for determining effectiveness of filtration technology
 - Aseptic necropsy techniques
 - Microbiological techniques
 - Plating of bacterial swabs
 - smear preparation
 - basic viral id – staining of slide
 - Further detail on disease treatments and vaccination techniques
 - Produce short videos for key species that can be used in teaching and on farm
- On farm interpretation
– what does this mean?

**these were identified by Dr Landos during the workshop*

There were also many ideas expressed for workshops that were not related to Aquatic Animal Health workshops.

Planned outcomes

Participants were asked: how should we disseminate this information?

Summary of participant comments:

Only the delegates present have really benefited so far. I have an obligation to disseminate the workshop information to the rest of my staff, but maybe the workshop information could be made available more widely? Through Aqua-Ed web site.

I think the DVD idea is a good one. That way we can easily have access to notes, discussion, videos etc. in one format.

Audio and video recordings of the workshop sessions including practical sessions were collected. This information along with the powerpoints will be compiled onto a DVD to be given to delegates and will be available at Aqua-Ed 2012.

Appendix Aquatic Health Workshop Outline Compilation of feedback

The table below outlines the topics to be covered, I need you to look through this table and provide some input into the workshop content. Is there anything in particular you would like to cover in relation to these areas and your course delivery? In other words what information do you need? What have I missed?

Please feel free to make comments as required.

Topics to be covered	Your input
<p>Bio-security</p> <ul style="list-style-type: none"> • What is it? • What does it mean? • Update on National program • On Farm programs – what does it mean –key components, current trends and issues, industry sectors examples <p>How a farm would go about developing biosecurity plans from whole of farms down to sections.</p>	<ul style="list-style-type: none"> • Small scale low energy RAS systems for hatchery • For me the on-farm, individual enterprise focus (strategies, techniques, best practice methods for farmers, etc) would be useful. All of these topics would be useful also. • Concerns of translocation of disease transferred from workers working overseas. Either transfer to Australia or overseas • biosecurity for the marine and freshwater ornamentals trade • risk of disease introductions and risk of escapes • Overview of biosecurity in global prawn aquaculture- why is there a need for it – some examples of poor/inadequate/non-existent biosecurity protocols and their consequences on stock and farm viability. Not necessarily specific to prawns again depending on interest but would be good to include a global overview • On farm biosecurity – hatchery to pond, pond to pond, equipment, staff and vehicle movement, quarantining a pond while still working others. Step by step practical examples of on farm biosecurity • Examples of Biosecurity SOPs • Many examples of biosecurity in practice in SE Asia – from small techniques through to whole of farm biosecurity plans.
<p>Disease identification on farm <i>For key species (to be determined based on workshop participants) aiming for content on mollusc, crustacean and fish.</i></p>	<p>Your key species of interest :</p> <ul style="list-style-type: none"> • Barramundi broodstock, larvae, fingerlings, sub-adult 3 • Tiger prawns 1 • Fish not specific 2 • Mollusc not specific 1 • Silver Perch 3

	<ul style="list-style-type: none"> • Kingfish 2 • Abalone maybe 1 • Crustaceans not specific 1 • Eels 1 • Murray Cod 1 • Mullaway 3 <p><i>nos. next to name represent people interested</i></p>
<p>Monitoring programs Disease agents – for <i>mollusc, crustacean and fish (depending on participants)</i></p> <ul style="list-style-type: none"> • current key threats – trends and life cycle information • new and emerging threats • use of prevention and management programs on farm • on farm sampling programs – effective on farm sampling program? sampling numbers, frequency and timing of sampling programs 	<p>Disease management plans</p> <p>Sources of extra information or recommendations or guidelines for farmers on prevention and management programs and on farm sampling programs... could also be useful</p> <p>How managers can implement a quality stock health monitoring and reporting regime that all staff can understand – Some examples</p> <p>Also for hatcheries and floating pontoons in sea rivers</p> <p>Mostly interested in prevention & management programs, as well as, diagnosis & treatment</p>
<p>Outbreak investigation including disease agents and treatment options Treatment options including</p> <ul style="list-style-type: none"> • update key registered chemicals/ use of vaccines • withholding periods • treatment applications – practical • treatment cost in dollar terms and other eg welfare, biosecurity, environment considerations 	<p>Early diagnosis and treatment Prevention strategies Sustainability Yep, this would all be good for me Overview on how diseases and disease outbreaks occur including water quality, vectors and any other stressors <input type="checkbox"/> Trends in disease screening techniques</p>
<p>Please identify the animal/s you would like covered:</p>	<p>Some specific mention was made of Black tiger prawns Barramundi 1 Not specific 1</p>

<p> <input type="checkbox"/> Mollusc 1 <input type="checkbox"/> Crustacean 1 <input type="checkbox"/> Fish 3 </p> <p><i>nos. next to name represent people interested</i></p> <p>General disease identification practical session –best practice sampling techniques and preparation for mollusc, crustacean, fish. Disease identification practical session - <i>for a mollusc, crustacean and fish (depending on participants)</i></p> <p>1. stock behaviour</p> <p><i>Each participant using a mollusc, crustacean and fish (depending on participants)</i></p> <p>2. gross signs</p> <p>3. clinical signs effective and humane euthanasia technique, microscope sampling, collecting samples effectively to send for diagnosis</p>	<p>General comments : Chemical diagnosis</p> <p>A Finfish focus would be most useful to me. Item 3 below would be useful also to check my current skills.</p>
<p>COMPULSORY !!!!</p> <p>Delivery ideas session – what to do with this information? How can you use this information to enhance your delivery? Delivery ideas session - What to do with this information?</p> <p>Share of ideas on how to enhance educational delivery</p>	<p>How should we capture the information from this workshop to share with others?</p> <p>Info booklet Aqua ED Ning online, Re vamp aqua ed ning? Maybe look at FRDC funded portal for aqua ed community of practice Digital media Workbooks with all the topics covered and photographs of techniques etc. I would like to be able to use this info in the development and improvement of our aquatic animal health short course as well as Cert II and III units. Being able to demonstrate disease identification and prevention to students. Could we assemble some basic learning</p>

	<p>resources – to share - for the relevant SFI11 Units of competence? We could cover some of the AQTF requirements for “validation and moderation” while we are altogether. That would be useful to me.</p> <p>Eg (parts of) Units:</p> <p>SFIAQUA221A Control predators and pests</p> <p>SFIAQUA222A Control diseases</p> <p>SFIAQUA316A Oversee the control of predators and pests</p> <p>SFIAQUA317A Oversee the control of diseases</p> <p>SFIAQUA401C Develop and implement a stock health program</p> <p>SFIAQUA505C Plan stock health management</p>
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Feedback received from :	Also attending :
Joe Coco Joe Coco & Associates Queensland,	Dos O’Sullivan Nat. Aqua. Training Institute P/L
Peter Pendoley, Challenger Institute TAFE WA	Anthony Aris Kimberley TAFE
Stuart Whitney Sunshine Coast TAFE QLD	
Suresh Job, Durack Institute Technology WA	
Peter Preece TAFE SA	
Jacqui Johnson NC TAFE NSW	
Lisa Terry NC TAFE NSW	
Glen Searle NC TAFE NSW	
Lachie McKenzie NMIT Vic	
Mark Oliver LMC Training QLD	

Appendix

List of participants and sponsoring organisations:

EOI received and attendance

EOI received in May 2011	Sponsoring Organisation	Attended workshop October 2011
Joe Coco	Joe Coco & Associates Queensland	yes
Peter Pendoley,	Challenger Institute TAFE WA	yes
Stuart Whitney	Sunshine Coast TAFE QLD	yes
Suresh Job,	Durack Institute Technology WA	no
Peter Preece	TAFE SA	yes
Jacqui Johnson	NC TAFE NSW	yes
Lisa Terry	NC TAFE NSW	yes
Glen Searle	NC TAFE NSW	yes
Andrew Ford	Maclean High School	No
Lachie McKenzie	NMIT Vic	yes
Mark Oliver	LMC Training QLD	yes
Dos O'Sullivan	Nat. Aqua. Training Institute P/L	No
Anthony Aris	Kimberley TAFE	No
Will Conn	associated LMC Training QLD	No
Kristie Wright	Yamba Fish Farm	yes

Should be noted those that pulled out did so in advance so I could reorganise and bring others in, with the exception of one who had a last minute problem.