SafeFish Technical Exchange Report

Visit of Yellow Fisheries Research Institute Scientists to Australia

Objective

To promote technical exchange between Australian and Chinese scientists in the area of food safety and market access for seafood.

Personnel

Australian hosts: Alison Turnbull, Science Program Leader, and Dr. Tom Madigan, Senior Research Scientist, Food Safety and Innovation, South Australian Research and Development Institute

Chinese visitors: Professor Yuxui Zhai and Dr. Zhijun Tan, Yellow Fisheries Research Institute, Qingdao

Interpreter: Simon Liu, consultant.

Activities

An itinerary for the visit is given below.

On Wednesday 2nd November, Professor Zhai and Dr Tan participated in a meeting with Dr. Madigan and Ms Turnbull where 9 project proposals put forward for collaboration (6 from the YSFRI, and 3 from SARDI) were discussed. Projects favourable to both parties included scientific methods to determine food authenticity (particularly methods based on genetics), improved utilisation of all components of fish, and biotoxin uptake, depuration and transformation pathways. These projects were further developed at a second meeting that evening. Also discussed was the inter-laboratory validation of rapid paralytic shellfish toxin test kits – a project run through SafeFish and managed by SARDI - that the YSFRI is collaborating on as a result of an early technical exchange through ACACA.

Professor Zhai and Dr. Tan undertook a tour of the commercial biotoxin facilities at Advanced Analytical Australia in the afternoon, to learn about the methods of analysis used in Australia, and the way the biotoxin monitoring program is operated.

In the evening the hosts and visitors met for dinner with Professor Gustaaf Hallegraeff from the Institute of Marine Science, Tasmania, and Dr. Tim Harwood, Cawthron Institute, New Zealand. During the course of the meal, the current state of play of marine biotoxin research in Australia, New Zealand and China were discussed.

On Thursday the visiting scientists participated in the Australian Shellfish Quality Assurance Programs biannual conference with over 70 Australian scientists, students, regulators and industry members. The conference highlighted the research occurring in Australia in shellfish food safety, and included talks from visiting scientists in New Zealand. Sessions included biotoxins, microbial pathogens and chemical contaminants. Dr. Tan gave an overview of the work conducted at the Yellow Seas Fisheries Research Institute, with a marine biotoxin focus. The presentations from the day will be uploaded to the SafeFish website, the program is presented below. Dr. Tan and Professor Zhai had opportunities to network with scientists in a range of research fields.

On Friday Professor Zhai and Dr. Tan undertook a tour of the Sydney Fish Markets, followed by a sight-seeing tour of Sydney with Mr. Simon Liu. They visited the Australian section of the Taronga Zoo, and cruised the harbour, taking in sights of the Harbour Bridge and Opera House.

Summary

Overall the trip was a success, and the Chinese have since submitted a research proposal on marine biotoxin uptake and transformations that lists SARDI as collaborators. Professor Zhai and Dr. Tan have a better understanding of the Australian Shellfish Quality Assurance Program and how it is implemented, and made many contacts with researchers in Australia. Discussions will continue with SARDI on taking research collaboration further in the fields of marine biotoxins, food authenticity and seafood utilisation.

Learnings

Professor Zhai was initially invited to Australia on his own, and declined an invitation to speak at the shellfish science conference due to language skills. When Dr. Tan was able to join the exchange, an invitation to present was re-issued. The Chinese confirmed the week before the science conference that they were able to visit, but did not respond to the invitation to give a presentation. At this stage programs were printed, and the Chinese were not included on the program. This caused embarrassment during the meeting. During the meeting Professor Zhai met a colleague from school days, and chose to miss the dinner event in order to spend time with his colleague. Our interpreter concluded this was in part in response to the embarrassment of not being included in the program. In future, such arrangements should be confirmed before they visit, and amendments made to the program where necessary.

During the visit language was a barrier to communication. The presence of the interpreter was essential.

Itinerary

Date	Time	Event	Address
Wednesday 2nd November	11:00 am - 12:30	Meeting with Alison Turnbull, Dr. Tom Madigan and Mr. Liu to discuss collaborative projects	To be determined
Wednesday 2nd November	12:30 – 1:30	Lunch hosted by Alison Turnbull, SafeFish	To be determined
Wednesday 2nd November	2:00 pm	Tour of Advanced Analytical Australia's Biotoxin laboratory	11 Julius Avenue North Ryde NSW 2113
Wednesday 2nd November	3:30 pm	Tour Sydney Institute for Marine Science's Biotoxin facility	19 Chowder Bay Road Mosman NSW 2088
Wednesday 3rd November	6:30 pm	Dinner with selected scientists and regulators, hosted by Alison Turnbull	To be determined
Thursday 3rd November	8:45 am – 5:00 pm	Australian Shellfish Quality Assurance Program's Biennial Science conference	University of Technology Sydney, Collaborative Theatre 08.03.005 Building 8 level 3 Building: Chau Chak Building Location: Bounded by Ultimo Road, The Goods Line, Mary Ann Street and Omnibus Lane, Ultimo
Thursday 3rd November	7 pm	ASQAAC Dinner	Blue Eye Dragon 37 Pyrmont Street, Pyrmont
Friday 4th November	6:30 am	Tour Sydney Fish Markets	Corner Bank Street & Pyrmont Bridge Road, Pyrmont
Friday 4th November	8:00 am	Tour of Sydney with Mr. Liu	

Australian Shellfish Quality Assurance Advisory Committee's science day 2016 – Schedule

Thursday 3rd November

Room: Collaborative Theatre 08.03.005 Building 8 level 3
Building: Chau Chak Building
Location: Bounded by Ultimo Road, The Goods Line, Mary Ann Street and Omnibus Lane, Ultimo

Time	Speaker	Title
0845-0915	***Welcome & An overview of ASQAP***	
	Session 1: An ecological perspective on HABs and biotoxins in shellfish	
0915-0955	Gustaaf Hallegraeff	Unprecedented *Alexandrium* blooms in a previously low biotoxin risk area of Tasmania, Australia
0955-1010	Penny Ajani	Modelling bloom formation of the toxic dinoflagellates *Dinophysis acuminata* and *Dinophysis caudata* in a highly modified estuary, south eastern Australia
1010-1025	Malwenn Lassudrie-Duchesne	Accumulation of paralytic shellfish toxins in Sydney Rock oysters selected for disease resistance
1025-1040	Shauna Murray	Safeguarding commercial and recreational fishing in NSW from ciguatera fish poisoning
1040 - 1120	***Morning Tea***	
	Session 2: Biotoxin screening and confirmatory testing	
1120-1135	Tim Harwood	Improving the risk assessment of toxic shellfish when using instrumental methods of analysis
1135-1150	Mike Boundy	Implementation of a LC-MS method for routine monitoring of shellfish samples for paralytic shellfish toxins and tetrodotoxin
1150-1205	Juan Dorantes-Aranda	**Comparative performance of four immunological test kits for the detection of Paralytic Shellfish Toxins in Tasmanian shellfish**
1205-1215	Alison Turnbull	**Validation of an qualitative screening test for Paralytic Shellfish Toxins to enable regulatory use**
1215-1230	Rendy Ruvindy	The validation and application of *sxtA*-based and species-specific qPCR assays for early detection of PSP-associated dinoflagellate bloom
1230 - 1245	Zhijun Tan	Shellfish aquaculture in China and sanitation control research of our laboratory
1245-1340	***Lunch***	

Time	Speaker	Title
	Session 3: Monitoring and management	
1340-1355	Shelly Alderman and Alex McLaran	The role of the Department of Agriculture and Water Resources in international shellfish product recalls: Preserving Australia's food safety image and maintaining market access
1355-1410	Valeria Torok	National survey for foodborne viruses in Australian oysters
1410-1425	Kate Hodgson	The use of FRNA bacteriophage for rapid re-opening of growing areas after sewage spills
1425-1440	Joel Barrat and John Ellis	Human gastrointestinal pathogens in Sydney Rock Oysters destined for human consumption
1440-1450	Tom Madigan	An outbreak of illness associated with oysters and *Vibrio parahaemolyticus*
1450-1505	David Padula	National Residue Survey (NRS) Fish Program
1505-1520	William King	The effect of microbiological and environmental factors on summer mortality events in Pacific oysters
1520-1600	***Afternoon tea***	
	Session 4: Laboratory analysis and field monitoring	
1600-1615	Bing Cheng	Multiclass detection of marine biotoxins in shellfish via tandem LC-FLD-MS
1615-1630	Andrew Bradbury	Developments at Advanced Analytical Australia(AAA)
1630-1645	Alex De Equiluz	TECTA B16 – Rapid Automated Microbiological Detection
1645-1700	Ros Harvey	A step change in food safety regulation in technology: The Yield case study
1700-1710	Closing remarks	