



Provenance establishment of Australian and overseas prawn using their natural elemental fingerprints

#### **Biography -**

**John Watling** holds the degrees of Bachelor of Science (Geology), Diploma of Imperial College (Mining Geology and Geochemistry) and Doctor of Philosophy (Mining Geology and Geochemistry) from Imperial College, the University of London. He is a Fellow of the Royal Australian Chemical Institute, a Fellow of the Royal Society of Chemistry, a Chartered Chemist, Chartered Scientist and Registered Analytical Chemist. He has over 35 years experience in instrument design, analytical chemistry and geochemistry and the application of these areas in the exploration industry, academia, research, government service and consultancy. Dr Watling is Winthrop Professor of Forensic and Analytical Chemistry at the University of Western Australia.

Dr Watling is extensively involved in providing forensic evidence associated with provenance establishment of scene of crime evidence to both national and international police agencies and in the development of all aspects of ICP-MS technology for the analysis of evidentiary material. He continues to be an expert witness in cases involving microscopic scene of crime evidence and is now actively involved in the development of analytical methodologies for the provenance establishment and traceability protocols for food and beverages. John is either author or co-author of over 120 national and international publications and has lectured extensively as a plenary and invited speaker to international conferences in a number of disciplines associated with analytical chemistry.

## **Prawn Substitution**

### **A Plan for Action in Conjunction with the National Prawn Marketing Strategy**

#### **Background**

The prawn industry will implement a marketing and promotion program in September 2013. As part of the promotion, point-of-sale promotional materials with an emphasis on Australian prawns will be provided to retailers at no cost. While it is acknowledged that many retailers sell Australian and imported prawns, it is important that everything possible is done to ensure that the marketing materials are not used by retailers in a way that consumers think they are buying Australian if the product is imported.

#### **Tiger Prawns Specifically**

The ACPF and APFA are aware that some retailers substitute imported prawns for Australian prawns and there are recorded convictions for this offence. There is a particular concern that one specific form of substitution occurs frequently and is difficult to detect. This is the substitution of Australian wild or farmed Tiger Prawns with Asian Tiger Prawns. These prawns are the same species (*Penaeus monodon*) and are visually indistinguishable. It is believed that retailers feel safe from detection by State authorities because of this.

#### **Physi-Trace® Testing**

At the request of ACPF and APFA, the Seafood CRC is considering an investment with University of WA to adapt *Physi-Trace*® technology to monitor the level of Tiger Prawn substitution in Australia. Preliminary work (See <http://physitrace.com/home.htm>). *Physi-trace* is used by the Australian pork industry and many other industries for traceback and country of origin monitoring. The technology is apparently proven in forensic case law. The technique would need to be calibrated and validated by testing a range of Australian and imported prawns before it could be used legally. This could be done as a research survey, which would also allow a determination of the level of the substitution occurring at present. The Barramundi farmers are also interested in being involved and the cost to calibrate both products is estimated to be \$100,000 ( We are yet to negotiate this).

#### **The Pork industry Approach as an Example**

The Australian Pork industry uses *Physi-Trace* to monitor the source of pork at retail and as a traceback system to farm of origin using a database built up from samples collected at abattoirs from all farms. This is known as “*Pig-pass*”. Australian Pork Limited, the industry-owned company, manages the Pig Pass system. Advice from Daryl d’Souza at APL is that the operation of Pig Pass centres on the use of *Physi-trace* to conduct testing of pork obtained from retail outlets at random or after receipt of a complaint. Because the whole industry is now aware this is happening, APL does not require retailers to sign any document in return for use of marketing materials. The APL Board has determined a two-step process to be followed when substitution is detected:

- First detection – a visit and discussion with the retailer, plus follow-up monitoring, and a warning letter.
- Second detection – Information passed to the State regulatory authority or ACCC for investigation. Press release when charges are laid and if convicted.

There has only been one prosecution (Primo) since 2010. The case resulted in a fine of \$235,000 and \$200,000 costs. Interestingly, although the case was heard in the local court where the fine per

charge is limited to \$10,000, the case involved 65 separate charges and fines were imposed for each charge.

#### **Advice from NSW Food Authority**

Consultation on this matter with the CEO and Executive Director of Compliance at NSW Food Authority revealed the following:

- They are aware of alleged substitution of Tiger Prawns
- They would welcome a survey done by the industry using *Physi-trace*. (They may contribute too – to be followed up).
- Once alerted by the industry of a problem, they would conduct their own investigation and collect new samples.
- It is better if the industry has a Code of Practice as well.
- They are aware of only one repeat offender following prosecution in the seafood industry – “quite a while ago”.
- They would never only lay one charge. They would go to court with a lot of charges, from evidence collected over several days as per the Primo case. Need to demonstrate a pattern of deception.
- Once the *Physi-trace* survey is completed they would take the results to the national committee of food regulators to inform all States and the ACCC. The approach will obviously depend on the results of the survey.
- The ACCC generally will only become involved if it is a national or large company doing the wrong thing, especially if there is interstate trade involved.
- We should contact NSW Food Authority closer to the time of launch to see if they will join in any PR about preventing product substitution.