



Western Rock Lobster (flesh)

PROVENANCE SCIENCE SERVICE

Source Certain confirmed that scientific provenance verification technology, TSW Trace® can be used to verify the authenticity of Western Rock Lobster flesh based on its chemical fingerprint.

With a globally recognised 'clean and green' image, Australian produce is prone to fraud in export markets. Western Rock Lobster is a desirable high-end food product only found along the Western Australian coastline. While the lobster is easily identifiable when left whole, the flesh itself is commonly extracted to be sold at retail or in food service, exposing it to substitution with cheaper and more available species.

THE DETAILS

High-end seafood continues to be at risk of food fraud, typically involving substitution and mislabelling of expensive premium products with cheaper species. These practices often occur in the export market, where the complexity of global supply chains is exploited. Activities like this damage consumer trust and undermine sustainability efforts and investment in sustainable fishery management.

It is common for lobster meat to be sold separately from the identifiable exoskeleton, requiring a verification method reliant on physical specimens alone.



While packaging and labelling add a layer of important information to premium exported products like lobster, they are unable to serve their purpose when they are physically separated from the product itself.

SCIENTIFIC PROVENANCE VERIFICATION

TSW Trace® is the proprietary scientific solution that underpins our provenance science services. It utilises trace element and stable isotope analysis to determine a unique chemical profile, or 'chemical fingerprint', for a physical product sample. The fingerprint can be referenced at a later point to verify an origin claim for a product claiming to come from the same location as the original sample.

Chemical profiling of naturally grown or manufactured material is one of the most robust methods available to enhance supply chain traceability for all products.

Scientific technology like TSW Trace is used to strengthen existing traceability and transparency measures that are currently in use within the fisheries industry.

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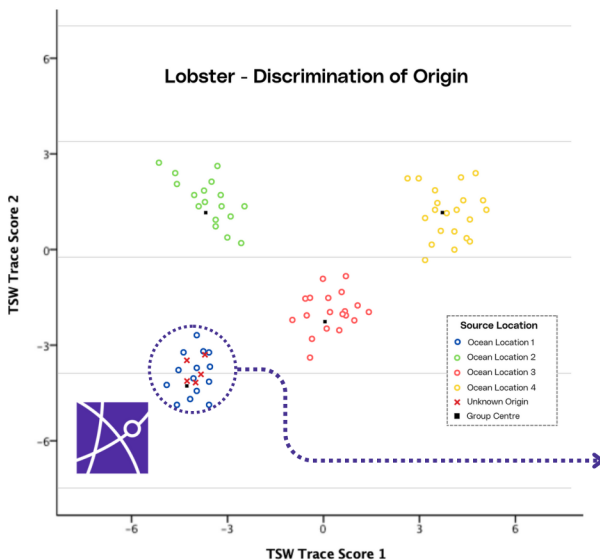


PROGRAM OUTCOMES

- The Western Rock Lobster (*Panulirus cygnus*) is found along the entire coastline of Western Australia and in a wide range of inshore and continental shelf zones, from the intertidal area to waters more than 50m deep.
- Our program has successfully demonstrated the feasibility of using advanced technology to trace and verify the origins of Western Rock Lobster flesh by analysing its chemical fingerprint.
- Due to the exclusivity of the lobster, this study prioritised fishery-level origin verification. The captured data offers the basis for further building capability for verification when undertaking in-market testing.
- Large-scale data would allow for verification of both origin and species.



Source Certain can test the authenticity of Western Rock Lobster by verifying its origin to its Western Australian fishery. This process is a cheaper and faster alternative to DNA testing.



This study was supported by research conducted by Source Certain scientists in the late 2000's. Watling, R. J., et al. (2010). The Application of Solution and Laser Ablation Based ICP-MS and Solution Based AES for the Provenance Determination of Selected Food and Drink Produce. The Open Chemical and Biomedical Methods Journal, 3, 179-196.



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