

**Australian Seafood Cooperative Research Centre Project No. 2008/794.10**



**AUSTRALIAN  
SEAFOOD  
COOPERATIVE  
RESEARCH CENTRE**

**Retail transformation: Identifying opportunities for creating  
consumer-focussed Australian salmon value-added products**

**PRINCIPAL INVESTIGATOR:** Ken Dods

**ADDRESS:**

ChemCentre  
Resource and Chemistry Precinct  
Manning Road BENTLEY WA 6102  
PO Box 1250 Bentley Delivery Centre  
BENTLEY WA 6983

**OBJECTIVES:**

This is the first time that Australian salmon has been evaluated from a consumer perspective. Current and existing research lacks fundamental, basic information on consumer perceptions and acceptance of this species. This project will fill a critical knowledge gap in existing and concurrent research projects – an understanding of the consumer perception of Australian salmon.

The use of Australian salmon in this project will lay the foundations for a project to sustainably commercialise the Australian salmon industry for Western Australia (or indicate that there is no consumer potential in commercialising this species).

There is widespread support for the commercialisation of this fishery (from fishermen, processors and retailers) in order to drive increased value return back through the value chain.

This project fits the CRC Program SellFish. It falls within Strategy 2 – evaluate new products and new retail presentation approaches for seafood.

The project will wholly or partially address the following outcomes:

1. Greater understanding by consumers, regulators and seafood industry staff on the positive nutritional benefits of seafood consumption.
2. Sales in newly accessed and established domestic and international markets.
3. Increased opportunity for seafood product differentiation, for example through nutrition claims, in new and existing markets.
4. Develop a consumer model for the evaluation of product acceptability and perception.
5. Improve the understanding of the biochemical profile of Australian Salmon as the basis for product and process development.

## **NON TECHNICAL SUMMARY:**

Australian salmon capture and harvest techniques have not changed significantly for many decades. Fish quality is quite variable and harvest practices are not optimised. As a result, consumer confidence in Australian salmon product has been adversely affected.

Harvest practice and immediate post-catch handling can be significantly improved, and are major determinants of product quality. Australian salmon should be rapidly harvested to minimise stress, and slaughter should involve Iki jimi (spiking the brain to cause immediate brain death), bleeding and immediate chilling.

Australian salmon harvested after migration showed a significant lowering in lipid levels and an increase in protein and moisture for fillets, compared with fish harvested at the start of migration. This may be preferable for a premium product. Dark muscle should also be trimmed from fillets destined for processing into any product form.

Mercury and selenium levels in fillets are of some concern: Australian salmon should be considered similarly to swordfish, mai mai and shark for dietary consumption.

A QI scheme was developed and validated for Western Australian salmon, providing a consistent and rapid measure of individual fish quality. Post-harvest quality studies showed that the onset and rate of degradation was higher for non Iki jimi samples, with rancidity detectable after 11 days of storage, compared to 18 days for Iki jimi samples.

The Australian public is still confused by the name, mistaking it for Atlantic salmon farmed in Australia. However consumer sensory evaluation clearly showed that the flesh of the fish was consistently more preferred than mullet and whiting. There is potential for development of a market for the Australian salmon catch in the fresh fish arena.

Vacuum packed frozen fillets provide excellent retention of product attributes, enabling the species to be presented as a consistent and desirable fish product for the marketplace. The development of ready-cooked meals and a smoked product should also be considered.

Revitalisation of the Australian salmon industry can occur if the industry invests in better harvest practices, maintains its supply chain, and uses an industry-wide quality measure. This would need to be matched by a substantial product development and marketing campaign to educate consumers.

## **OUTCOMES ACHIEVED TO DATE**

1. The project has increased the understanding by consumers, regulators and seafood industry staff on the positive nutritional benefits of seafood consumption.
2. The project has indicated how Australian salmon might find acceptance in new and established domestic and international markets.
3. Increased the opportunity for seafood product differentiation, for example through nutritional claims, in new and existing markets.
4. Developed a consumer model for the evaluation of product acceptability and perception.

## **KEYWORDS:**

Australian salmon, fishery, purse seining, Iki jimi, fillet, quality index (QI), free fatty acids, valued- added, fish processing, cryovac, kawahai,