Introduction

In 2011, the Fisheries Technology and New Opportunities Program (FTNOP) provided assistance to Quin Seas Fisheries Ltd. to conduct a technical review of the Snorre Spinsheller Crab Processing System. This system, if proven successful, would have allowed Quin Sea Fisheries to more efficiently extract crab meat from lower-valued and broken sections, resulting in an improved crab meat product.

Background

The majority of snow crab currently sold in the province is processed and marketed in shell. During production, a portion of these crab sections may become broken or not suitable for resale. These sections are then frozen and shipped to Asia for meat processing, at a lower return. Additionally, crab that is extracted from shells is prepared under high water pressure, which oftentimes reduces the flavour of the crab and results in a less desirable texture.

The Snorre Spinsheller is designed to break and separate snow crab meat from the shell material. Quin Sea Fisheries believes using this technology would allow them to eliminate shipping discarded crab sections to Asia and produce a fuller tasting and improved texture crab salad meat. To complete the technical review, Quin Sea Fisheries contracted Hardy Fish Company Ltd. who evaluated the Spinsheller for performance yield, product quality, and reviewed other logistics associated with obtaining the equipment.

Methodology

The project work plan was structured into two phases. Phase I included a thorough evaluation of the equipment and costing analysis prior to purchase. Phase II involved a review of the equipment once purchased and installed. As part of Phase II, a Nova Scotia Snorre technician
and sales representative traveled to Newfoundland to participate in the equipment analysis and in-house trials to assess the yield, quality, and marketability of the product.

In completing the equipment review, Hardy Fish Company assessed:

- Market demand
- Equipment capacity
- Results of product testing
- Product quality comparison (shell, moisture, taste)
- Cost benefits and advantage

### Results

- The extracted crab shoulder salad meat was noticeably wet, had a high moisture content and a soft texture.
- When shoulder meat was combined with crab legs, the meat displayed a more reddish colour.
- When the shoulders and legs were placed in the spin dryer before the Spinsheller, the finished product was dryer and had a more fibrous texture.
- In some of the processing trials meat particles became included in the shell discharge. A second round though the Spinsheller recovered a small amount of crab meat. Processed broken crab legs yielded poor results as shell pieces exiting the machine contained a high percentage of useable crab meat.
- Pre-hand cut crab legs placed into the Spinsheller produced an acceptable salad meat yield and quality. The product displayed excellent colour and flavor with a firm and moist texture.

### Conclusion

This project has shown the Snorre Spinsheller can effectively process crab sections and legs into acceptable, quality crab meat. However, Quin Sea Fisheries will face issues with return on investment, since the current snow crab they use has a high raw materials cost with a low profit margin. In order to further develop this opportunity, Quin Sea Fisheries must consider the volatility of the seafood market and continue to work closely with market affiliates. The introduction of salad meat was not intended to become a stand-alone operation, but to diversify Quin Sea Fisheries’ product offerings. As such, the company will continue to explore future opportunities for value-added processes and approaches to utilizing crab meat.
The Fisheries Technology and New Opportunities Program (created under the Fishing Industry Renewal Strategy) provides support for innovative and competitive harvesting, processing, and marketing initiatives to increase the overall viability of the Newfoundland and Labrador seafood industry to be a major economic contributor to the provincial economy. For more information please contact us.