

Making waves

Biotechnology is the science of aquaculture

■ By Stephen Clare

Seafood from New Brunswick will be a whole lot safer in the coming years, thanks in large part to new funding from the Federal Government.

In January, it was announced that six Research and Development projects in the province will receive a total of \$12.6 million. The money is part of the Atlantic Innovation Fund, which will see up to \$63 million doled out to 29 public and private R&D facilities in the region over the next decade in hopes of bringing new knowledge, new jobs and new business opportunities to Atlantic Canada.

The announcement came as good news to New Brunswick's burgeoning salmon industry. "This funding will have a direct and immediate impact upon our sector," says Dr. Jamey Smith of the New Brunswick Salmon Growers Association. "We are now in a position to offer consumers even greater confidence in the safety of our product."

Smith is referring to a ground-breaking DNA-based salmon traceability project that is currently being undertaken by the province's Research and Productivity Council (RPC) in Fredericton in conjunction with Cooke Aquaculture Ltd. of Blacks Harbour.

The new system is being designed to track individual Atlantic salmon from "farm-to-fork" within a commercial aquaculture operation. The project is expected to cost \$2.8 million, with \$1.9 million coming from the AIF and the balance of funding to come from a variety of private and public sector sources over the next four years.

"As far as we know this is the first project of its kind in the world of seafood," says Dr. Rachael Ritchie, head of RPC's Food, Fisheries & Aquaculture Department.

"DNA traceability will allow us to track individual fish and to verify its larger animal lot tracking system. We are currently working with Cooke Aquaculture Ltd to determine the unique 'DNA barcode' for each fish. This DNA barcode will remain with the fish throughout its life and will facilitate tracking of individual animals. This research promises to revolutionize food traceability and contribute to food safety."

RPC's work in the field has been making waves across the country and around the

world in recent months. In October of 2006, Ritchie spoke to international delegates on the benefits of using DNA-based traceability to revolutionize the process of tracking products at the Second Annual Food Traceability Summit in Toronto. The presentation showcased RPC's DNA genotyping expertise and related technologies, and captured the attention of some of North America's most successful food producers and participants looking for innovative solutions to address food safety concerns. "The thinking is that this system will not only ensure the safety of food from production to retail outlets, but it will also guarantee prompt response in cases of recalls," she says.

Ritchie believes that with the increased focus on food safety in the coming years, it will be essential for New Brunswick companies to anticipate both challenging consumer demands and industry regulations and remain competitive locally, nationally and internationally. "We have a real opportunity here to be world leaders in the field of salmon farming."

Recent food scares such as BSE and the recent E.Coli outbreaks have highlighted the need for a sound food traceability system. However, many companies are finding other benefits to development of a food traceability system including increased production efficiencies, decreased insurance costs, improved inventory control and access to new markets.

Nell Hulse is the VP of Cooke Aquaculture Ltd. She says that her company began developing the idea with the RPC a couple of years ago in an effort to gain an edge in the marketplace. "Fish traceability has become increasingly important, given growing public concerns about food safety, new regulatory requirements and the increasingly competitive global economy."

Cooke Aquaculture is an independent family-owned aquaculture company with 1,200 employees and more than \$200 million in annual sales and operations in the Atlantic Provinces and the State of Maine.

Hulse adds that the DNA-based traceability system will enhance the company's existing system, which already conforms to industry regulatory standards for all of its markets. "This is going to take us to the next level internationally," she says, "and the hope is that it will create new opportunities for other aquaculture related businesses in the province to grow their market share."