FOOD TECHNOLOGY CENTRE

Innovation for the Food & Bioresource Industries

Prince Edward Island, CANADA

NEWSLETTER

June 2006

Featured in this issue:

Free Preliminary Consultation
FTC provides free preliminary consultation services and FTC will help you source appropriate funding for your food development projects.
The **Prince Edward Island Food Products Development Fund** will assist Island businesses with projects carried out at the P.E.I. Food Technology Centre. Support is also available for product development activities carried out at FTC for companies in our neighbouring provinces through the NS, NB, and NL governments. Contact Yaw Dako, Food Technologist (902-569-7699)

FTC provides certified **organic processing** services. Contact Leigh Gao, Food Scientist/Engineer at 902-368-5465.

FTC can provide solutions in **natural products extraction** and nutra-ceuticals/ functional foods product development. Contact Ron Skinner, Project Manager, Natural Products Extraction at 902-368-5919.

Microbiology Laboratory Services:
- Sample Submission forms
- Requirements for the collection and shipping of samples
- Specific instructions for the collection and shipping of shellfish samples

To obtain swabbing supplies and sterile bottles, or for further information about our laboratory services, please call our microbiology laboratory at (902) 368-5937.

For further information on our Centre, please visit our website:
www.gov.pe.ca/ftc

New AgraWest Mashed Potato Products

Minister of Development and Technology Mike Currie, Bluefield High School Student Nicholas Oakes, Culinary Institute of Canada Chef Kimball Bernard, and AgraWest Plant Manager Jamie Trainor sample a new value-added PEI potato product.

AgraWest Investments operates a high volume, single line, dehydrate potato granule processing facility in Souris, Prince Edward Island and the company has recently developed a premium food product for local and export markets. The new AgraWest mashed potato mix is made from potato granules - each granule is a dehydrated single potato cell produced from the solid portion of whole potatoes with seasoned ingredients added. With the expertise from chefs at the Culinary Institute of Canada, recipes have been created to add zesty flavours to the product for a variety of choices including: Regular Mash, Extra Creamy, Buttermilk and Chives, Three Cheese, Roasted Garlic and Portobello Mushroom. The Food Technology Centre is involved in the process improvement of the potato granules with respect to the food science and analytical testing.

In 2004, the PEI Food Technology Centre, the Culinary Institute of Canada and Prince Edward Island Business Development launched a new product development partnership that would work together to develop specialty food products using Prince Edward Island ingredients. Through this agreement, the new mashed potato mix, a value-added PEI food product, has been developed to go to market.

For more information about the mashed potato mix, please contact: Jamie Trainor at AgraWest Investments at jtrainor@agrawest.com.

The Appeal of Ultrafiltration

By Dr Roberto E. Armenta, Natural Products Biochemist at FTC

Bench-top Membrane Filtration Equipment

Ultrafiltration (UF) is a membrane separation method that simultaneously purifies, concentrates and fractionates large macromolecules (0.001-0.2 µm) such as proteins and polysaccharides. UF uses lower pressures than reverse osmosis, reducing equipment and operating costs. UF concentrates without applying heat or a change of solvent phase, and can recover macromolecules while maintaining their biological activity (e.g. enzymes). UF separates small molecular weight compounds from complex mixtures that contain a broad range of compounds with varying molecular weights. FTC has the capability to perform UF processes at laboratory and post-laboratory bench scales (0.5-10 L). The range of applications is broad within the natural products and food processing sectors. Novel applications of UF could be to separate high-value enzymes from microbes, and to concentrate "attractant proteins" (an in demand aquaculture feed) from crustacean waste, achieving a simultaneous purification of astaxanthin (strong antioxidant with market value of >$3,000/kg), a pigment that can be concentrated by reverse osmosis.

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Feedback: If you have ideas for future newsletters or any comments we would love to hear from you. Please call Janet Docherty at 902-368-5226 or email jvdocher@gov.pe.ca

A listing of food processing equipment is available on our website. Most pieces of equipment are mobile, permitting operators to customize processing lines. A range of pumps and auxiliary equipment is also available.

Food Safety Workshops

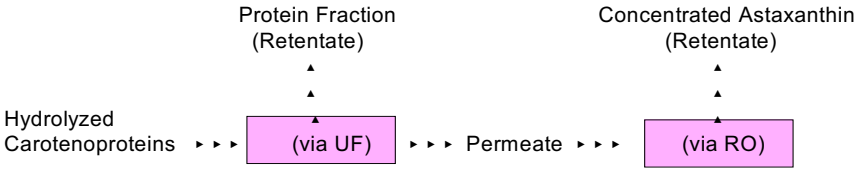
Two courses are being planned in cooperation with the New Brunswick Food & Beverage Processors Association:

- **Introduction to ISO 22000:2005 Food Safety Management System Workshop**, Moncton, NB; September 12, 2006.
- **Getting Ready for a Customer Food Safety Audit Workshop**, Moncton, NB; September 19, 2006.

These courses will also be offered in other areas if there is enough interest. For further information on these and other available courses, please contact Jim Landrigan at 902-368-5772 or by email at jklandri@gov.pe.ca.

A Potential Application of Ultrafiltration

Ultrafiltration (UF) uses membranes to separate, through a pressure gradient, macromolecules that are in solution with smaller molecules. A potential application for this membrane process could be the separation of protein and carotenoids (colourful pigments with antioxidant properties) from crustacean waste (e.g. lobster, crab and shrimp waste). To date, there is no report of using membrane processes to concentrate relatively protein-free astaxanthin. Carotenoproteins (a protein-carotenoid complex) can be extracted from lobster waste using food grade solvents, and later be hydrolyzed using a protease. Using UF, 400-450 g of protein could be recovered per kg of dry lobster waste. In addition, the resulting permeate could be concentrated using reverse osmosis (RO), recovering 700-800 mg of astaxanthin per kg of lobster waste, which overcomes yields by other separation methods reported to be 75-200 mg astaxanthin/kg crustacean waste. A great advantage of this process is the recovery of protein-free astaxanthin, which expands the possible applications of the pigment.



To learn more about applying Ultrafiltration to your production system, please contact: Dr. Roberto Armenta by email rearmenta@gov.pe.ca or by telephone at (902) 368-5086.

New Food Safety Analysis Method Available at FTC

by Vanessa Neale, Senior Microbiology Laboratory Technologist

The Food Technology Centre provides technical assistance to the industry by testing for contaminants of public health significance in food and water. Recently FTC has added a molecular platform technology called Polymerase Chain Reaction (PCR). Commonly referred to as DNA analysis, PCR is a rapid molecular-based technique used to identify microorganisms in any given source. Without going through the extensive and laborious steps in the classical culturing methods for identifying harmful microorganisms in a sample, the PCR will ensure a quick turnaround time and be appropriate for isolating and identifying microorganisms in foods such as *Campylobactor*.

In addition, PCR testing can be used for detecting intestinal protozoan parasites, such as *Cryptosporidium* and *Giardia* in surface and ground water. PCR has the ability to determine not only the presence of *Cryptosporidium* and *Giardia*, but also to determine the species of these parasites, which can be helpful in determining the possible sources of the contamination.

For further information about lab analyses services provided by the Food Technology Centre, please call our Microbiology Laboratory at (902) 368-5937.

Funding Partner Profile: Canadian Dairy Commission

The Food Technology Centre has a funding agreement with the Canadian Dairy Commission (CDC) which allows food processors who use milk ingredients as well as dairy products manufacturers to access two new funding programs. The programs will give manufacturers and processors an opportunity for consultation and development work at the FTC.

The Direct Access Fund allows eligible companies to seek expert advice directly from the Food Technology Centre for free consultation on a specific project up to a value of $1,500. (Information Guide)

The Innovation Support Fund is available to companies to develop new and reformulated dairy products/components and further-processed products which have the potential to expand the market for milk. The Fund also provides financial support and expertise in the areas of product analysis, pilot scale trials and packaging development. (Program Guide and Application Guide)

For more information contact Ed Charter, Food Science Manager, by telephone at (902) 368-5912 or by email at eacharter@gov.pe.ca.