

FOOD TECHNOLOGY CENTRE

Innovation for the Food & Bioresource Industries

Prince Edward Island, CANADA

NEWSLETTER

February 2008

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At the [International Boston Seafood Show](#), Feb. 24-26, and at the [Canadian Food and Beverage Show](#), in Toronto, March 2-4, Yaw Dako, Food Technologist, will be available to meet with you about your processing questions. Please contact yadako@gov.pe.ca for an appointment.

Free Preliminary Consultation

FTC provides free preliminary consultation services and FTC will help you source appropriate funding for your food development projects.

FTC can provide solutions in **natural products extraction** and nutraceuticals/functional foods product development. FTC has the equipment and the expertise to help you develop new products and techniques that will help you to design extraction, separation and purification methods and to reduce your production costs. For further information, please contact Dr. Edward Charter, Manager, Food Science & Natural Products Extraction, at 902-368-5912.

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.

Flavoured Butter Oil Product Development

By Leigh Gao, Ph.D., Food Scientist/Engineer

[Amalgamated Dairies Limited](#) (ADL) is the largest home-grown food company on Prince Edward Island with annual sales of over \$100 million. ADL offers a wide range of dairy products for sale under the ADL label and other national brand names. Over 80% of ADL's annual production is destined for markets outside of PEI.



ADL progressively develops products which will expand its market share. Butter oil is a unique milk product that consists of pure butter fat which is separated, clarified and flavoured to best suit the needs of discerning consumers. It is free from milk solids and moisture. Technically, it is known as anhydrous milk fat (AMF). It is used extensively in food service and households for flavouring and gourmet cooking.

The Food Technology Centre developed a process for flavoured butter oil products which will last for months at ambient temperature (22°C). FTC solved technical difficulties and tested the process at pilot scale and developed the most economical and efficient process conditions for manufacture of the products. The optimum process was determined and the results were transferred to ADL who plan to begin commercial production this year.

For further information on the product, please contact Mr. Chad Mann, Amalgamated Dairies Limited at (902) 888-5088.

Throughout this project FTC has enjoyed the opportunity to partner with the Culinary Institute of Canada (CIC) to take advantage of CIC's expertise in product formulation. The Canadian Dairy Commission provided financial support for the work through their [Milk Ingredients Innovation Support Program](#).

Supercritical Fluid Extraction Workshop

The Food Technology Centre, in partnership with Agriculture and Agri-Food Canada, is offering a 2½ day [Supercritical Fluid Extraction Workshop](#) to be held March 25-27, 2008 in Charlottetown. The presenter will be Mr. Rodger Marentis, a consultant with many years of experience in this technology.

The workshop will cover fundamentals of supercritical processing and examples of industrial applications, with emphasis on practical implementation of the technology. Immediately following the workshop, there will be the opportunity for one-on-one or small group meetings with Mr. Marentis for those interested in discussing potential extraction processes in detail. Please contact fcweb@gov.pe.ca if you are interested in attending.

The Effect of Particle Size on Extraction Efficiency

By Mary Alice Duval, B.Sc., Extraction Technologist

The PEI Food Technology Centre has several platforms for food, nutraceutical and pharmaceutical extraction, such as Supercritical Fluid Extraction, Ultrasonic Extraction and Liquid Chromatography.

Extraction is a selective separation procedure for isolating and concentrating target compounds. Some of these compounds are highly valuable and can be used as food



The **2008 Canadian Institute of Food Science and Technology/ Agriculture and Agri-Food Canada Conference** will be held in Charlottetown, PE, May 25 - 27.

The Conference Committee has developed a program that will explore emerging environmental and health issues related to food and food production systems. See the [Program at a Glance](#).

Food Safety Workshops

Course outlines of all our Food Safety Workshops are available on the [Training page](#) of our FTC website.

For further information on these, or if you would like a course held in your area, please contact Jim Landrigan at 902-368-5772 or by email at jklandri@gov.pe.ca

Funding Programs

Links to information about programs available from our funding partners are available on FTC's website. See [Funding Programs](#).

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additives or in the pharmaceutical and cosmetic industries. One of the key questions our clients have is "How can we improve the efficiency of our extraction and yield more product?" There are several approaches to deal with that question. Changes to temperature, pressure, type of solvent and/or a reduction in particle size are all potential ways to increase extraction yields. If there is no previous research as to the optimal extraction conditions for the target compound, lengthy trials may be needed.

The most time and cost efficient way of attempting to increase efficiency is to reduce the particle size of the extraction material. A decrease in particle size results in an increase in the surface area of the particle. Surface area is the measure of how much exposed area a particle has. The more area which is exposed leads to more area available for the solvent to penetrate and extract the target compounds.

FTC has a high powered, high volume Urschel Grinder specifically designed to reduce the particle size of many different types of materials. There are many options with the cutting heads available at FTC.

For more information on Natural Products Extraction contact Geoff Ralling at 902-368-4233.

Featured Equipment: APV Anhydro Pilot Laboratory Vacuum Evaporator

By Lilian Yu, M.Sc., P.Eng., Food Scientist



Evaporation refers to the process of heating liquid to the boiling point to remove water as vapour. Vacuum evaporation is a process that the liquid is evaporated under vacuum condition to reduce the boiling point to minimize the heat damage for heat sensitive materials.

The APV Anhydro Pilot Laboratory Vacuum Evaporator at the Food Technology Centre is designed as a semi-batchwise operation. The evaporation capacity is about 50 kg/h if it is at 60°C. The liquid to be concentrated is drawn into the evaporator by vacuum through a valve during the concentration. The concentrated liquid is discharged through a valve when the batch is finished. The boiling takes place at

a low temperature which is governed by the vacuum in the evaporator. Low pressure steam is used as indirect heating medium for the evaporation.

Applications of the evaporator include, e.g., the concentration of fruit juices, fruit concentrates, sugars and corn syrups, broths, cheese whey, coffee, milk, pharmaceutical products, beer, etc. This machine is available for use in FTC's pilot plant. For further information, please contact Lilian Yu by phone at (902) 368-6154 or by e-mail at lyu@gov.pe.ca.

Featured FOODTECH Canada Centre: Food Development Centre

Thirteen similar centres across Canada have formed a network incorporated as **FOODTECH Canada**. The purpose of this network is to provide technical support for Canada's food processors to commercialise new products, to enable the centres to work on large projects that they could not do on their own, and to allow the centres to focus on their particular expertise. This month we are featuring a **FOODTECH Canada** Centre in Manitoba. The [Food Development Centre](#) (FDC) is a Special Operating Agency of Manitoba Agriculture, Food and Rural Initiatives (MAFRI).



FDC provides contract research and development services for the value-added agricultural products processing sector. FDC has a brand new CFIA-registered pilot plant where clients and staff work together to develop high quality processed foods and non-food products on a commercial scale for domestic or export marketplaces.

For further information on FDC, please phone 1-800-870-1044 toll-free in Canada.