



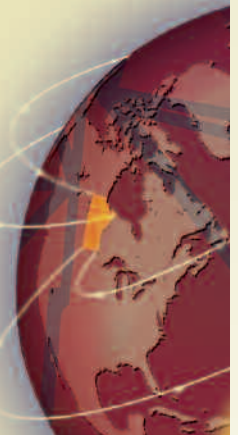
- MANITOBA - FOOD PROCESSING INNOVATORS

YOUR INVITATION TO EXPLORE R&D OPPORTUNITIES IN MANITOBA

This publication outlines the significant research and development expertise and services available to Manitoba's processed food and beverage industry.

Contact any of the organizations in this publication to launch the next step of your new venture. Manitoba's agricultural R&D partners are ready to work with you today to turn your creativity and determination into a marketable product tomorrow.

Manitoba 



TURNING NEW IDEAS INTO PROFITABLE VENTURES

An overview of Manitoba's Agricultural Research and Development Infrastructure

The Agri-Food Industry Recipe for Success

Since the days of our pioneer ancestors, food production and processing have been the backbone of Manitoba's economy. Just as the prairie landscape has changed since we entered Confederation, so has almost every aspect of farming and its related industries. Crop production is mechanized, food and beverage processing is automated, and farmers work on computers in their homes and in the field.

In agri-food processing today, as in every sector, the challenge is to do things better, faster and cheaper. Promoting innovation and an entrepreneurial spirit throughout a business operation is critical to developing and maintaining your competitive advantage. Moreover, today's food and beverage processors have unprecedented opportunities to develop new products for global markets by adding value to Manitoba's traditional agriculture commodities.

MANITOBA IS HOME TO CANADA'S FINEST AGRI-FOOD RESEARCH AND DEVELOPMENT FACILITIES.

Manitoba's research and development community has formed a consortium of major private and public sector R&D organizations with a broad range of services for the agri-food sector.

CANADIAN GRAIN COMMISSION GRAIN RESEARCH LABORATORY (GRL)

Winnipeg, Manitoba

Phone: (204) 983-2764 • Fax: (204) 983-2751

Website: www.cgc.ca

The Grain Research Laboratory is the scientific division of the Canadian Grain Commission and provides support for the quality assurance and market support objectives of the Commission. The GRL is funded by federal appropriation as well as through Canadian Grain Commission fees.

The GRL offers extensive expertise in the evaluation of the quality of cereal grains, oilseeds and pulses, and houses specialized equipment including laboratory and pilot scale capabilities of flour and semolina milling, processing of baked products, noodles and pastas, and barley malting.

Analytical capabilities include determination of physical properties, chemical constituents, functionality (suitability for specific end products) and toxic chemical and biological contaminants.

AGRICULTURE AND AGRI-FOOD CANADA (AAFC)

Winnipeg, Manitoba

Phone: (204) 983-0099 • Fax: (204) 984-0894

Website: www.agr.gc.ca/science/winnipeg

AAFC's Cereal Research Centre (CRC) in Winnipeg combines expertise and facilities in cereal breeding, quality, pathology and molecular genetics to develop improved wheat and oat varieties for Western Canada. It also offers expertise in safe processes for controlling insects, mites, and fungi in stored grain and grain products, in addition to identifying control for mycotoxins.

Cereal chemists at the CRC are exploring functional food aspects or nutraceutical properties of durum wheat, bread, oats and barley. They work in collaboration with crop breeders to develop new varieties with improved levels of beta glucans, lutein, soluble fibres and antioxidants – components which are known to promote health.

Morden, Manitoba

Phone: (204) 822-7201 • Fax: (204) 822-7207

Website: www.agr.gc.ca/science/winnipeg

The primary focus of research at the Morden Research Station, which is linked scientifically to the Cereal Research Centre in Winnipeg, involves the development and marketing of oilseed, pulse and horticultural crops on the prairies. New research directions are planned in co-operation with industrial partners. These areas include identification and extraction of high value material from new alternative crops as well as established crops such as flax and field peas.

Brandon, Manitoba

Phone: (204) 726-7650 • Fax: (204) 728-3858

Website: www.gc.ca/science/brandon

The primary focus at the Brandon Research Centre is on optimum land resource utilization including grain, oilseed, pulse, potato and forage production, sustainable pasture-based beef production and food, feed and malting barley development. Crop production research includes control and modification of specific fractions within the seed and plant tissues allowing the tailoring of crops for specific markets. Pesticide-free production methods are developed for grains, oilseeds and pulses. Scientists also participate in a prairie-wide group effort to minimize heavy metals in prairie crops.

THE UNIVERSITY OF MANITOBA

Faculty of Human Ecology

University of Manitoba

Winnipeg, Manitoba

Phone: (204) 474-9295 • Fax: (204) 747-7592

Website: www.umanitoba.ca/faculties/human_ecology

The Human Nutritional Sciences Department in the Faculty of Human Ecology has developed an excellent reputation in nutraceutical and functional food research. Staff has expertise in bioactive components in foods including lipids (such as CLA and sphingolipids) peptides and polysaccharides. Isolation and identification of bioactive components from buckwheat, flax, soybean, quinoa, and yellow mustard was shown to attenuate such chronic diseases as diabetes, cardiovascular disease, kidney disease as well as carcinogenesis in experimental animals. Some of this work will continue at the new Richardson Centre for Functional Foods and Nutraceuticals at the University of Manitoba. In addition, the department has considerable expertise in edible oil research and

conducts food biochemical analysis, frying and storage trials, consumer acceptance studies, sensory evaluation and human feeding trials. The George Weston Sensory and Food Research Centre in the Department of Human Nutritional Sciences will be strengthened by the recent appointment of Dr. Ben Lawlor.

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The Food Science Department conducts physical, chemical and microbiological analysis of foods and food ingredients using both approved and experimental techniques. Staff have expertise in cereal, protein and carbohydrate chemistry, food microbiology, active packaging film, food safety, dairy and horticultural crop processing. Development of processes for extraction, purification, potency estimates, and packaging of natural health products from agriculture is an ongoing activity. Expertise and access to the Department's food processing and dairy pilot plants are available to industry for product improvement and research and development.

The Biosystems Engineering Department offers expertise in the analysis and design of components, processes and systems for the food industry. Special capabilities range from very fundamental research on the mathematical modeling of heat and mass transfer in irregular shaped foods and the determination of the thermo physical properties and the water activity in foods, to the more applied research areas including aseptic processing of foods, superheated steam drying of liquid foods, extraction technologies and image processing.

The Richardson Centre for Functional Foods and Nutraceuticals
University of Manitoba
Winnipeg, Manitoba
Phone: (204) 474-9787 • Fax: (204) 474-7697
Email: ffn_centre@umanitoba.ca
Website: www.umanitoba.ca/research/rcffn

The Richardson Centre for Functional Foods and Nutraceuticals at the University of Manitoba focuses on products derived from crops important to the prairie region, including oats, wheat, buckwheat, canola, flax and hemp.

The new building is a unique facility where researchers from different disciplines as well as industry partners work together to develop functional foods and nutraceuticals based on scientific evidence for their efficacy and safety, with the necessary research and pilot plant equipment to facilitate the development and standardization of these products. The Centre has access to up to 40 scientists from the faculties of Agricultural and Food Sciences, Human Ecology, Medicine and Pharmacy. RCFFN researchers collaborate with researchers at other organizations including the National Centre for Agri-Food Research in Medicine at the St. Boniface General Hospital Research Centre and the Food

Development Centre in Portage la Prairie on research and development projects.

The Richardson Centre's has the capability to:

- identify, enhance and economically extract bioactive compounds
- standardize potency as well as efficacy of bioactive compounds
- conduct experiments for assessing biosafety of functional foods and nutraceuticals
- analyze a range of bioactive ingredients present in functional foods and nutraceuticals
- conduct research to pilot production level ready for commercialization
- determine consumer acceptability of functional foods and nutraceutical products

NATIONAL CENTRE FOR AGRI-FOOD RESEARCH IN MEDICINE (NCARM)

St. Boniface General Hospital Research Centre
Winnipeg, Manitoba
Phone: (204) 235-3003 • Fax: (204) 231-1151
E-mail: jlabarre@sbrc.ca
Website: www.sbrc.ca/ncarm

NCARM studies the health-related benefits of natural health products (also known as nutraceuticals, functional foods or health foods). NCARM is located within the St. Boniface General Hospital Research Centre (SBRC). St. Boniface General Hospital is one of two teaching hospitals for the Faculty of Medicine at the University of Manitoba in Winnipeg. SBRC is a state-of-the-art medical research facility with world-renowned expertise in cardiovascular research.

NCARM's research on natural health products is delivered through both basic science experimentation and clinical trials. The latter is supported on the same campus by the Asper Clinical Research Institute for Phase 2 and 3 clinical trials. The combination of both basic science and clinical expertise makes NCARM one of the most powerful research groups in this part of the world.

NCARM recently completed an agreement to expand their capabilities in their facility with a \$20 million joint initiative with Agriculture and Agri-Food Canada to take advantage of this unique research potential. NCARM is supported by peer reviewed funding from national agencies and industrial partnerships. The research and clinical trials focus of NCARM is intended to evaluate natural health products for their health benefits, medical side-effects and influence on athletic performance.

FOOD DEVELOPMENT CENTRE

Portage la Prairie, Manitoba
Phone: (204) 239-3150 • Fax: (204) 239-3180
Website: www.gov.mb.ca/agriculture/fdc

The Food Development Centre is a special operating agency of Manitoba Agriculture, Food and Rural Initiatives. FDC conducts

applied contract research and development for the agri-food industry in the area of value-added processing including development of functional foods and nutraceuticals.

FDC has a federally (Canadian Food Inspection Agency) licensed pilot plant for processed food production. This allows clients to produce and market their products nationally and internationally. FDC's facilities and equipment provide the necessary flexibility to conduct a wide variety of development projects in grains and oilseeds, fruits and vegetables, bakery, beverages, meat, etc. FDC's personnel have expertise in many processing technologies including membrane filtration, supercritical fluid extraction, dehydration, freezing, blanching, modified atmosphere packaging and crystallization. FDC has a strategic partnership with Great Plains Aseptic Processors Ltd. (GPAP) for liquid food processing using Tetra Pak aseptic processing and packaging technology. This creates a unique opportunity for companies to develop liquid foods including functional beverages and soups from research through pilot scale to full commercialization within the same facility. The major expertise/competencies include:

- product development
- process engineering
- pilot plant production and commercialization
- nutrition labeling
- sensory evaluation
- shelf-life testing
- HACCP consulting
- technology transfer and information services
- technical workshops

CANADIAN MALTING BARLEY TECHNICAL CENTRE (CMBTC)

Winnipeg, Manitoba

Phone: (204) 983-1981 • Fax: (204) 984-5843

E-mail: rmccaig@cmbtc.com

Website: www.cmbtc.com

CMBTC has expertise in malting and brewing, with pilot malting and brewing plants capable of duplicating almost any system in use worldwide and producing commercial quality products. R&D capabilities include pilot plant facilities for malting and brewing, evaluation of new barley varieties, chemical analysis, instructional services and engineering-related activities, equipment selection and plant layout, development of food processes and product development including recipe formulations, shelf life studies and process development.

CMBTC is a non-profit organization offering a complete range of services relating to malt and beer from the evaluation of new barley varieties to malting and brewing studies. They have state-of-the-art pilot malting and brewing facilities that will duplicate any commercial process. Technical expertise includes market support, evaluation of new barley varieties for suitability to certain market niches and for specific customers' particular malt and beer specifications and assistance with foreign markets.

CANADIAN INTERNATIONAL GRAINS INSTITUTE (CIGI)

Winnipeg, Manitoba

Phone: (204) 983-5344 • Fax: (204) 983-2642

E-mail: cigi@cigi.ca

Website: www.cigi.ca

A non-profit market development organization, CIGI promotes Canada's field crops in domestic and international markets through educational programming and technical activities. Focusing on food and feed end uses, CIGI's technology staff are specialists in a wide range of disciplines, sharing their commercial knowledge and expertise through programs, applied research and customer service activities. In addition to working with Canadian wheat classes, technology staff are also involved in the processing, analysis and end-product evaluation of a diverse number of Canadian field crops including lentils, chickpeas, field peas, barley, rye, buckwheat and oats.

CIGI's commodity-based technology facilities provide access to a large variety of processing equipment in one location, including a pilot flour mill, pilot bakery, test facility and analytical services and food quality testing laboratories. With the staff expertise and knowledge to emulate commercial practices in the production of flour, bread, pasta, Asian noodles and steamed breads and specialty end products, CIGI's facilities are used for collaborative projects with customers and researchers which can be conducted on a confidential basis. Core funding for CIGI is provided by Agriculture and Agri-Food Canada and the Canadian Wheat Board. Additional funds and support are provided by other sectors of the agriculture industry.



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TRADE AND
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