

*Quality*  
is in our **nature**



# Canadian Strength, Global Opportunity



Canada's Functional Food and  
Natural Health Products Industry



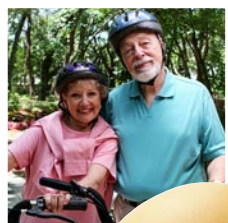
Agriculture and  
Agri-Food Canada

Agriculture et  
Agroalimentaire Canada

**Canada** 

# Building On Our Strengths

Canada's functional food and natural health products industry is world renowned for quality and innovation.



**Committed to meeting the needs** of their global customers, Canadian companies are taking advantage of the competitive strengths of Canada's agriculture and food industry. There is strength in Canada's rich, fertile land with its abundant fresh water and vast natural resources. There is strength in Canada's internationally recognized regulatory and food inspection systems that result in world-class standards and safe, nutritious, top-quality products. There is strength in Canada's network of research facilities where science innovators focus on developing leading-edge products and new technologies. And, there is strength in the collaborative environment among governments, universities, health institutions and industry that helps this vibrant sector prosper by encouraging innovation, cultivation and manufacturing of diverse products with proven health benefits.

## What are Functional Foods?

Functional foods are similar in appearance to—or may be—conventional foods, are consumed as part of a usual diet, and are demonstrated to have physiological benefits and/or reduce the risk of chronic disease beyond basic nutritional functions. They are created through various means, such as:

- fortification with vitamins and/or minerals to provide added health benefits (e.g. *fortified soy beverages and fruit juice with calcium*)
- addition of bioactive ingredients (e.g. *muffins with beta glucan, yogurts with probiotics, and drinks with herb blends*)
- bioactive-component enhancement through plant breeding, processing, or special livestock feeding techniques (e.g. *omega-3 eggs, milk and meat; canola oil high in carotenoids; and wheat with enhanced lutein levels*)

## What are Natural Health Products?

Natural health products are usually sold in dosage form for the purpose of diagnosing, treating or preventing disease; restoring or correcting function; or maintaining or promoting health. Examples include:

- products extracted or purified from plants (e.g. *beta-glucan from oats, antioxidants from blueberries, sterols from wood pulp, essential fatty acids from marine or vegetable oil, and soluble fibre from fenugreek*)
- products ground, dried, powdered and pressed from plant materials (e.g. *Echinacea, fenugreek, valerian and ginseng*)
- products produced, extracted or purified from animals and micro-organisms (e.g. *essential fatty acids, enzymes, carotenoids and probiotics*)
- products produced from marine sources (e.g. *glucosamine, chitosan and fish oils*)
- products comprised solely of vitamins and minerals



# Growth and Opportunity in the Global Marketplace

The rapidly growing global market for functional foods and natural health products is being driven by the trend toward healthy lifestyles. Capitalizing on this trend, Canada's active, research-oriented industry has experienced significant growth. In 2004, nearly 400 companies generated annual revenues of CAN\$2.9 billion, employed close to 13,000 people and exported CAN\$545 million worth of products abroad (Statistics Canada, 2007). This represents a 32% increase in the number of companies, a 15% increase in revenues and a 43% increase in the value of exports over a two-year period.



## Industry Leaders in Development and Manufacturing



From start-ups to multinationals, the Canadian functional food and natural health products industry is home to numerous world-class companies. Building on their strengths, these companies are successfully harvesting bioactive compounds from a variety of sources, such as cereals, grains, oilseeds, speciality crops, fruits, vegetables, pulses, herbs, botanicals, animals, marine life and micro-organisms. From these compounds, a wide range of new and healthful products is being developed.

Some Canadian companies offer expertise in developing and manufacturing innovative functional foods and health ingredients. Others offer expertise in the production of probiotics, herbals and specialty products, vitamin and mineral supplements, as well as in contract manufacturing of private label products. Specialized development centres and pilot plants located across Canada are well equipped to help companies develop their products and bring them to market.



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With sales in over 20 countries, **Harmonium International Inc.** is one of the largest manufacturers and suppliers of probiotics in the world. **CV Technologies Inc.** develops and manufactures natural health products. **Lassonde Industries Inc.** is a Canadian leader in the development, manufacture, and marketing of an innovative and distinctive range of functional juices. And, **KGK Synergize Inc.** offers contract research and product development services. **Ocean Nutrition Canada Ltd. (ONC)** is the largest global supplier of marine-sourced omega-3 fatty acids for use in a wide range of food applications. Over a two-year period, ONC claimed about 40% of global trade in marine-sourced omega-3 oils, turnover in excess of US\$50 million and 30% growth (*Starling, 2006*).



“Halifax is a great place to build our business, with its large marine science community, highly educated and stable work force, R&D tax credits and easy access to both the U.S. and European markets. The secret to our success has been our people and their creativity in developing proprietary products and technologies in a tremendously supportive community.”

**Robert Orr, President and CEO  
Ocean Nutrition Canada Limited**



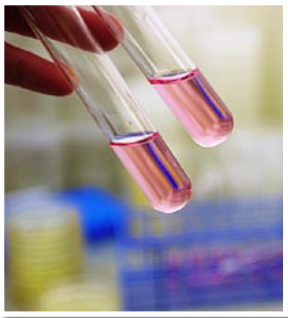


# Canada Embraces Innovation and New Technology



Canadian functional food and natural health product companies are using innovation and high technology to turn quality ingredients into exceptional products.

Already world leaders in the development and manufacturing of plant and marine sourced essential fatty acid (EFA) products (e.g. flaxseed, borage, hemp, fish and evening primrose oils), Canadian companies have also developed specialized encapsulation and other packaging technologies that preserve the integrity and bioactivity of EFA products. ONC has developed proprietary micro-encapsulation technologies that currently lead the industry in a wide range of food and beverage applications (*Starling, 2006*).



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## Innovators in the Development and Enhancement of Products

Canadian companies are using innovative technologies to develop and enhance the nutritive value and functional properties of both plant and animal products, including milk and eggs with increased levels of omega-3 fatty acids; cereals like oats and barley with enhanced amounts of beta glucan; wheat with increased levels of lutein; fruits, vegetables, herbs, and crops like fenugreek and alfalfa, modified to contain increased levels of antioxidants and other bioactive compounds; vegetable oils with modified fatty acid profiles; and modified proteins from soy, canola, hemp, and grain legumes like peas, lentils, chick peas, and beans.



“CV Technologies is a company whose outstanding growth can be attributed to both marketing savvy and the quality and consistency of our science-based products. Canada’s natural health product standards are among the most rigorous in the world and our company has been at the forefront of developing world class standardization tools that ensure our products such as COLD-fX® are reliable and safe. The bottom line is that our natural health products work; that’s why we’re successful!”

**Dr. Jacqueline Shan, President, CEO & Chief Scientific Officer  
CV Technologies Inc.**





“As one of the largest manufacturers of probiotics and lactic bacteria in the world, Harmonium International has found Canada to be an excellent home for our business. At the international level, Canada has the reputation of being able to produce highest quality products and this has helped us achieve quicker market penetration in over 25 countries around the world.”

Marc Lalonde, VP, Business Development  
Harmonium International Inc.

## Experts in Processing and Extracting Nutritional Value

Canada also boasts an industrial capacity in the processing and extraction of nutritionally valuable ingredients and compounds. Canadian companies like **Cevena Bioproducts Inc.** have developed specialized fractionation technologies for the processing of raw materials, such as flax, cereals and peas into starch, protein and fibre. They have also developed supercritical fluid extraction techniques that offer the food industry solvent-free ingredients from spices and botanicals using “green” technology (*Wellness West, 2005*).

Founded in 1918 mainly as a canning factory, **A. Lassonde Inc.**, a subsidiary of Lassonde Industries Inc., has grown and diversified into one of Canada’s leading juice producers and distributors. Lassonde has brought innovative juice blends rich in essential nutrients to the Canadian and international markets. The company’s *Oasis* brands also contain a variety of functional ingredients like omega-3 fatty acids from cold pressed flax seed oil, calcium from natural sources and beta carotene.

## Canada Sets Global Standards

Canada’s stringent standards for foods, pharmaceuticals and natural health products have led Canadian companies and researchers to refine analytical methods of standardizing and verifying the potency and bioactivity of compounds found in both functional food and natural health products. Utilizing advanced technologies such as markers, chemical and DNA fingerprinting, bioassays and the emerging field of phytochemicals, companies have been able to ensure consistent product quality in natural products derived from botanical sources (*Wellness West, 2006*).

## Excellence in the Industry

In 1992, **CV Technologies Inc.** began as a spin-off company at the University of Alberta and is currently focused on the research and development of natural health products for disease prevention and health maintenance. The company has developed and patented a proprietary technology used in the identification and standardization of its products. CV Technologies Inc. achieved mass-market distribution of *COLD-fx*®, a patented extract of oligosaccharides and polysaccharides derived from North American ginseng (*Ferrier, 2006*).

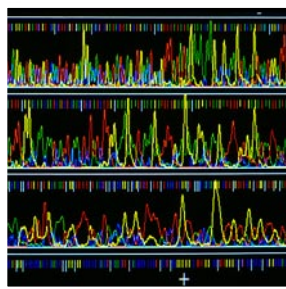
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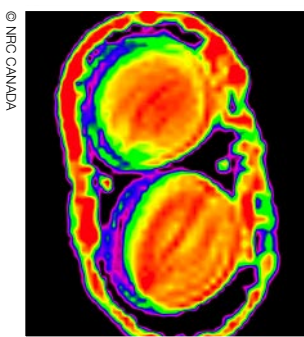


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# Canada Supports World Class Research



Critical to this rapidly evolving field are the strong, cost-effective research capabilities that exist across this country. Key players in the research of functional food and natural health products include governments, the academic community, institutions and industry, all of which work together to advance collective interests.

## Strong Government Commitment

At the federal government level, world-class research scientists from **Agriculture and Agri-Food Canada** and the **National Research Council Canada** are working to develop partnerships with universities, governments and the private sector, both in Canada and abroad. The goal is to ensure that collective investments and the efforts of national research providers are used to Canada's best advantage. Agriculture and Agri-Food Canada scientists use their knowledge to develop new, healthy food products that improve nutrition and wellness in the population. Focused on improving the understanding of the link between food, nutrition, health and wellness, their research is leading to increased opportunities for the agricultural industry to produce new and innovative functional foods and natural health products.

The National Research Council's **Plant Biotechnology Institute** in Saskatchewan and the **Institute for Nutrisciences and Health** in Prince Edward Island are scientific hubs fostering community innovation by offering companies a full range of services. Access to laboratory space, world-class scientists, leading-edge equipment, and infrastructure brings university, government and private sector scientists together to work side by side towards a common theme of discovery, innovation and commercialization.

Across Canada, provincial governments have also invested heavily in the industry by supporting regional research and development initiatives and acting as a catalyst in the formation of provincially interconnected companies and institutions that research, develop and commercialize functional food and natural health products. This support enables universities to play an active role in functional food and natural health products research, focusing on all areas of the industry from production to consumption.

“At Lassonde, we are continuously introducing value-added products and innovations. Quality is a priority to us and Agriculture and Agri-Food Canada encourages all companies in the food industry to implement quality control measures. We have some of the best and most efficient quality control programs in the world and these assure our consumers that all our products are safe and respect the highest norms of health.”

Jean Gatusso, President and CEO  
A. Lassonde Inc.



## Some Successful Canadian Companies:

- Atrium Biotechnologies Inc.
- Bioriginal Food and Science Corp.
- Burcon NutraScience Corp.
- Forbes Medi-Tech Inc.
- Fortius Pharmedica
- Fractec
- Institut Rosell
- Natural Factors Nutritional Products Ltd.
- Neptune Technologies and Bioresources Inc.
- Nutri-Pea Limited
- Pizzey's Milling
- Ruth's Hemp Foods Inc.
- Van Dyk's Health Juice Products Ltd.
- Vinifera for Life Inc.

## An Industry That Believes in Safety and Quality

In an effort to provide safe, efficacious, quality products to consumers, Canadian companies are investing significant resources in validating the effectiveness of their products in preventing diseases.

In June 1997, **KGK Synergize Inc.** was established as a research and development company by three scientists associated with University of Western Ontario's Centre for Human Nutrition. Built on a solid scientific foundation, this company brings a unique level of understanding, service and commitment to contract research. From pre-clinical studies to clinical trials, KGK provides full contract research services in the areas of natural health products research, analytical chemistry, immunology, toxicology and autoimmunity. By implementing various screening techniques to develop functional food and natural health products, KGK has been very successful in bringing them to the point where they are ready to manufacture and market.



“We put a lot into research and development so that we can bring more to the table when approaching the international market with our products. Being in Canada makes it easier for us to compete globally. We benefit from provincial tax incentives, high standards, and collaborations with university and hospital sites.”

Najla Guthrie, President/CEO  
KGK Synergize Inc.

## Canada's Spirit of Success

Canada's functional food and natural health products industry is a dynamic, research-driven industry that can be trusted to deliver on its commitments. Through the on-going development of value-added processing and extraction of nutritionally valuable constituents, Canadian companies are harnessing the spirit of innovation. They are turning that spirit into a thriving industry built on opportunity, growth, high standards, excellence, commitment and pride. *That is Canada's spirit of success.*

## References

Ferrier, G. (2006, May) “Will COLD-FX's inspired combination of science and celebrity succeed in the U.S.?” Nutrition Business Journal, 11 (5), 30-31.

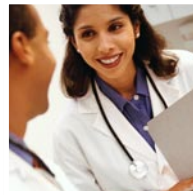
Starling, Shane. (2006, September) “Nothing fishy about ONC market catch.” New Nutrition Business, 11 (10), 30-31.

Statistics Canada. (2007) Results from the functional foods and nutraceuticals survey 2004 working paper.

Wellness West. (2005, July) “Supercritical Fluid Extraction: an upcoming ‘green’ technology.” Technology Watch, 2 (1), 7.

Wellness West. (2006, October) “Markers and Natural Health Products.” Technology Watch, 3 (1), 2.

The companies named in this brochure were selected to illustrate the diversity of the functional food and natural health product sector in Canada, and do not constitute an exhaustive listing of companies involved in the sector. For additional information, consult Canadian food-industry and natural health-product directories or Internet sites. Reference in this brochure to companies or products, or the inclusion of images containing products and product names is not to be considered an endorsement by Agriculture and Agri-Food Canada.



## The Canadian Advantage in the Global Marketplace

**Strength in Natural Resources** • Canada is a rich and fertile land with abundant fresh water, diverse plant, animal and marine life and a vast supply of natural resources. These valuable resources are proven building blocks for a high tech industry that produces an array of high quality, agri-food products.

**Strength in World Class Standards** • Canada's regulatory and food inspection systems are internationally recognized, resulting in world-class standards and products that are safe, top-quality and nutritious.

**Strength in Innovative Research** • Canada has developed a strong network of research facilities across the country where scientific innovators are focused on developing leading-edge products and new technologies.

**Strength in Collaborative Teamwork** • The collaborative environment among governments, universities, health institutions and industry has helped this vibrant sector prosper by encouraging innovation, cultivation and manufacturing of diverse agri-food products with proven health benefits.



To learn more about Canada's functional food and natural health products industry, visit:

**[www.agr.gc.ca](http://www.agr.gc.ca)** or email **[ffn-afn@agr.gc.ca](mailto:ffn-afn@agr.gc.ca)**

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