# Plant-based Proteins

*A White Paper*


**PREPARED BY:**
**Kelley C. Fitzpatrick, Nutriscience Solutions Ltd**

BIOSCIENCE ASSOCIATION MANITOBA bam

@BioScienceMB

# EXECUTIVE SUMMARY

## Introduction

Demand for dietary protein is increasing. The increase is required to meet the needs of a growing population and to suit changes in consumer preferences. As more consumers embrace plant foods in their diets, plant-based protein is the primary key opportunity in this emerging category, making up the majority of both online searches and sales for 'plant-based' products. The 'plant-based' trend isn't exclusive to dietary supplements and includes everything from food and beverage, to personal care goods, to pet supplements and bioproducts[1].

Market pressures for plant-based protein and other derivatives presents a unique opportunity for Manitoba which has a long and successful history in crop production, research and innovation. These platforms provide a strong base from which to enhance the discovery of new and further development of plant protein products. Manitoba is a leader in production of canola and pulse crops and further value-added opportunities exist in minor crops such as hemp, flax and oats. Manitoba has the opportunity to build on its strengths in plant production and processing science, crop diversity, and private and public ingredient processing to increase value-added processing of plant-based proteins.

## Bioscience Association Manitoba

Several initiatives are underway to position Western Canada as a leading source of high-quality plant protein and related food ingredients. Bioscience Association Manitoba (BAM) is taking a leadership role in developing the innovation ecosystem to build and grow a strong plant-based food and ingredient sector in the province[2]. BAM is the voice and organizational nucleus of Manitoba's bioscience industry. Since 1990, it has come to represent over 110 local organizations that span across Manitoba's health, bioproduct, food and agriculture sectors and now clean tech.

As a non-profit, BAM strives to grow Manitoba's vibrant bioscience industry. It collaborates with members, stakeholders, government officials, and other organizations to achieve excellence in this competitive industry. Through its training and development programs, BAM drives Manitoba's bioscience community forward, providing members with valuable resources, information, and opportunities to grow. BAM has become an important factor in the growth of the value-added agriculture and food industry in Manitoba.

BAM is a stakeholder in Protein Industries Canada (PIC), an industry led supercluster comprised of leading Canadian agriculture technology corporations, food and food ingredient manufacturers, agriculture and food service companies, economic development agencies, and highly experienced academic and financial institutions. PIC requested $300 million in funding from the Innovation Supercluster initiative of Innovation, Science and Economic Development Canada in a Phase II submission made on November 24, 2017[3]. PIC has assembled over $222 million of cash, $70 million of 'in-kind' support and venture capital commitments of $150 million to extend its funding request.

[1] *Zegler, J. 2017 Food & Drink Trends 2017. Mintel.*
[2] *http://www.biomb.ca/who-we-are*
[3] *https://www.canada.ca/en/innovation-science-economic-development/programs/small-business-financing-growth/innovation-superclusters.html*

BAM is involved with the "Protein Highway", a branded initiative of the Canadian Prairies and U.S. Upper Midwest/ Great Plains region organized to enhance cross-border collaboration among entrepreneurs, researchers and investors in value-added agriculture. The primary goal of the Protein Highway is to spur the creation of an innovation hub that facilitates collaboration among world class researchers at such institutions to develop novel, value-added products from the protein crops produced in the region; connects ides and as with entrepreneurs and enabling companies for scale-up; and showcases regional opportunities to investors in agri-food innovation.

BAM was the host of the Agricultural Bioscience International Conference (ABIC 2017) that was held on September 25-28, 2017 in Winnipeg, Manitoba. ABIC is one of many BAM sponsored activities aimed at linking companies with educational institutions and other organizations, coordinating conference attendance and creating networking events. ABIC provided an international venue for BAM to raise the profile of life science businesses in Manitoba to promote business and partnership development. Companies attending ABIC and its satellite events were given information to help to address their challenges, develop new business and secure investments within Manitoba, Canada, and internationally. By leading ABIC, BAM and its members were able to network with a range of businesses previously unaware of its numerous training activities and membership benefits. This was especially true for the agriculture and food sectors who took advantage of several conference sessions specifically focused on plant-based proteins and opportunities for Western Canada.

The future of plant-based protein is positive for Manitoba. This paper provides an overview of the various opportunities that exist and the challenges that need to be overcome. Innovation plays a leading role in industry's ability to capture leadership in the market. New developments in plant-based foods and ingredients from Western Canadian research facilities were highlighted at ABIC. This information as well as other recent findings are also described. The paper focuses on proteins derived from Manitoba crops where industry is leading research and product development, including canola, pulses, hemp and oats. Upcoming crops with the potential to develop unique products include flax, sunflower, mustard, quinoa and barley.

The demand for and acceptance of plant-based food alternatives and protein is no longer considered a trend but has become part of the 'mainstream' food industry.[4] There are several macro developments which are driving interest and stimulating the need for new plant-based proteins including population growth, changes in market dynamics and the need to enhance global food security.

[4] *United Nations Department of Economic and Social Affairs. World Population Prospects: The 2015 Revision.*