

## Call for Full Proposals

Released – March 9, 2020

Under the Ag Action Manitoba component of the Canadian Agricultural Partnership the Manitoba government has invited full proposals for new research projects. Proposals are to be submitted by April 17, 2020. Manitoba Pulse and Soybean Growers (MPSG) has identified research topics in order to engage interested researchers in the development of proposals.

MPSG's research investments are intended to achieve improved farm profitability through advances in the following areas:

- Grain yield and quality
- Reduced pest control costs
- Soil quality
- Market demand for pulses and soybeans

In support of these intentions MPSG is seeking discussions with researchers in the following areas:

- Development of recommendations for variety selection, seeding, crop nutrition and pest control to support sustainable dry bean production in southwestern Manitoba.
- Chemical and cultural alternatives to existing pre-harvest chemical treatments in pulse crops.
- Comparative profitability of producing herbicide tolerant soybean versus conventional soybean for their respective markets.
- Collection and use of plant and soil data generated by spaceborne, airborne or land-based sensors in field scale experiments.
- Accelerating the development of techniques for the rapid on-farm detection and characterization of pests of pulses and soybean.
- Genetic and agronomic improvement and/or market development to diversify the range of annual grain legumes adapted to commercial production in Manitoba.
- Estimating the contribution of Manitoba-grown annual grain legumes to meeting GHG reduction targets.

The above areas are to be considered in the context of the Manitoba Agriculture Research and Innovation Committee's themes for the current proposal call. Themes are listed on the following page.



MPSG supports research at scales from the lab bench through small field plots to field scale on-farm tests. Research in the fields of economics and markets is also supported. Merit is preferentially awarded to proposals that can demonstrate how results would improve farm gate returns of pulse and soybean production.

Researchers interested in collaborating on a proposal in the above areas should contact Daryl Domitruk by March 16, 2020. Please be prepared to state the objective, relevance, partners, and estimated total cost of the project.

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Proposals approved by MPSG's Research Committee will be submitted to Manitoba Agriculture and Resource Development by MPSG.

Information on the provincial proposal process appears at <https://www.gov.mb.ca/agriculture/research-and-innovation/funding-opportunities/index.html>

#### Manitoba Agriculture Research and Innovation Committee Themes:

##### **Climate Change Adaptation**

Development of disruptive, innovation technologies and practices that help producers adapt to climate change. Priorities include:

- Research to support economic valuation of benefits from Ecological Goods and Services including wetlands, biodiversity, shelterbelts, flood protection, etc., to assist in future policy decision making processes.
- Investigation of farming systems that sequester carbon and fix nitrogen including:
  - Enabling an increased prevalence of annual legume crops (e.g. peas, faba beans, lentils, soybeans) and perennial forages in crop rotations;
  - Identification of best management strategies for livestock/crop integration that improve farm productivity and environmental performance.
- Efficient water use to improve resilience to climate change (e.g. drought, excess water) through identification of cost effective, best management strategies for water conservation technologies and energy efficiency.
- Crop diversity to improve cropping system resiliency, including:
  - Improvement of crop adaptation to abiotic and biotic stresses utilizing biotechnology (e.g. genetic manipulation of plants, clusters of regularly interspaced short palindromic repeats (CRISPR), molecular markers);



- Development of crop varieties (e.g. forages, sunflowers, buckwheat, flax, perennial grains) that are adapted to Manitoba's changing climatic conditions.

### **Environmental Sustainability**

Identification and utilization of food production and processing technologies and practices to improve environmental sustainability including:

- co-product utilization; recycling of nutrients (e.g. potato by-products being fed to cattle, phosphorus recycling);
- water utilization and efficiency;
- greenhouse gas (GHG) mitigation strategies;
- precision agriculture for sustainable food production;
- strategies to reduce the environmental footprint of livestock production systems.

### **Food, Diet and Health**

Identifying pathways of resource utilization that improve environmental sustainability, human nutrition, policy development and public trust of protein-based food production. Priorities include:

- Identification and utilization of high quality sustainable protein sources including:
  - Sustainable increase of protein sources;
  - Identification of efficient and sustainable protein extraction technologies;
  - Linking sustainable protein for improved health outcomes.
- Identification of personalized nutrition strategies for optimal health and disease prevention utilizing nutrigenetics, nutrigenomics, and other related technologies.

### **Sustainable Feed Grains Supply and Utilization**

Increasing sustainability of livestock feed production and use. Priorities include:

- Decrease the impact of mycotoxins and other anti-nutritional compounds through breeding and production and post-harvest management.
- Variety development of barley, corn and forage to enhance feed quality.
- Co-product utilization for livestock feed.

