Manitoba Pulse Growers Association Inc.

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MPGA's Call for Pulse Research Proposals

Manitoba Pulse Growers Association (MPGA) welcomes the submission of pulse research proposals. If you are seeking funding for projects in 2012, please submit your proposals to MPGA's office by **Tuesday, November 15, 2011**.

MPGA has a lot of research funds committed to the Pulse Science Cluster and the Canadian Field Crops Research Alliance DIAP, so we may not be able to provide financial support to all projects submitted. Every project will be carefully reviewed by the board of directors and be given serious consideration; however, projects that fit into the following categories will be more favorably received:

(a) Projects that address the issues as outlined in our list of priorities on pages 3, 4, 5 and 6
(b) Projects that demonstrate collaboration cross-provincially and with other researchers
(c) Projects that show joint investment with other funding bodies, or that qualify for matching industry or government funding
(d) Projects that follow the proposal guidelines as outlined on page 7
(e) Projects that provide benefits and value to pulse crop producers

An eligible research project is one that has the potential to assist growers in their production (for example, reduce input or production costs, protect or increase crop yields, increase ease of production) or increase market opportunities and crop value (for example, improve the quality of Manitoba pulses for specific markets, new cost-competitive uses for Manitoba pulses). Please call Roxanne if you are unsure of the applicability or relative importance of your project.

Multiple year projects are acceptable. Please note that annual reports are required and subsequent funding will be based on successful completion of milestones. A final report is required once the project is complete.

MPGA requests that proposals be one to two pages in length and follow the format outlined on the page 7.

MPGA will be finalizing their funding decisions in December 2011 and researchers will be notified by the end of December 2011 or early January 2012.

Electronic submissions are strongly encouraged, and Microsoft Word is the preferred format. Copies can also be mailed or faxed to MPGA's office.

Please send proposals to:

Roxanne Lewko, Executive Director: roxanne@manitobapulse.ca

Manitoba Pulse Growers Association
Box 1760
Carman, Manitoba R0G 0J0

Fax: (204) 745-6213

Research priorities and proposal guidelines are outlined on pages 3, 4, 5, 6 and 7.

MPGA looks forward to receiving your research proposals. If you have any questions, please call the office at (204) 745-6488 or e-mail roxanne@manitobapulse.ca.

Best regards,

Roxanne Lewko
Executive Director, MPGA

MPGA's Research Priorities

Please note these are areas MPGA is most interested in funding, but all quality proposals will be given serious consideration by the selection committees.

1. **SOYBEANS**: Soybean acres have been steadily increasing in Manitoba over the past few years. The following priorities are identified to ensure producers have access to high yielding, disease resistant, quality-oriented varieties that are specifically adapted to Manitoba's growing conditions, and the best management tools.

(A) **Field scale trials** – MPGA has a growing interest in funding soybean field scale trials in Manitoba, looking at:

- Land rolling (especially timing – when is too late, what stages work)
- Crop rotation (back to back soybeans – what are the disadvantages, do you need fertilizer in the 2nd year; what is best crop to plant before and after soybeans)
- Fertility (starter fertilizer, timing, placement, rates, benefits, is it feasible)
- Seeding rates (row spacing vs. solid seeded, upright vs. bushy plant architecture and its effect on plant stands and lodging)
- Seeding dates and soil temperature (in all growing regions, including the non-traditional areas)

(B) **Agronomy**

- Inoculants (rates on virgin fields vs. fields that have had soybeans on them before)
- Seed treatments and methods of application
- Seedling diseases
- Soil benefits 2 and 3 years after growing soybeans
- Management practices to control:
  - Iron chlorosis
  - Bacterial blight
  - Volunteer RR weeds (canola, corn, etc.) in RR soybeans
- Minimizing pre-harvest pod shattering (especially on early maturing varieties)
- Pesticide control (diseases and insects)

(C) **Variety Development / Breeding objectives** – primarily in low heat-unit varieties for tolerance and resistance to:

- Lodging
- Root rots
- White mould (sclerotinia)
- Soybean cyst nematode

- Soybean aphids
- Asian soybean rust
- Downey mildew
- Edamame soybeans

(D) **Utilization, Value-Added**

- Novel food product or other uses of Manitoba-grown soybeans
  - *Since 95% of our soybean acres are GM, can GM soybeans be used in food applications?*
- Quality analysis (focus on oilseed varieties)
  - GM vs. non-GMO quality characteristics
  - Yellow hilum glyphosate-tolerant soybeans
- Preferred food and feed grade qualities and characteristics
- Geographical advantages to Manitoba-grown soybeans

2. **EDIBLE BEANS**: The following priorities revolve around developing disease resistant varieties and identifying innovative management practices and their effects on production under Manitoba's growing conditions.

(A) **Field scale trials** – MPGA has a growing interest in funding edible bean field scale trials in Manitoba, looking at:

- Treated seed vs. non-treated seed (any yield differences)
- Harvest management (undercutting vs. flex header)
- White mould control options (timing, split application)
- Split application of fungicide and/or herbicide (is it economical)
- Solid seeding vs. row spacing (any yield differences)

(B) **Agronomy**

- Fertilizer recommendations (macro and micro nutrients, including zinc, copper, iron)
- Management tools: best use of equipment and crop inputs to make edible beans profitable
- Weed control options
- Variety development for:
  - Frost and water tolerance in spring
  - Slow-darkening pintos
  - Minimizing seed coat cracking in kidneys
- Techniques for drying at harvest time
- Pod Ceal timing and effectiveness
- Harvest systems that prevent seed cracking and other degrading factors

(C) **Disease and Insect Control**

- White mould (sclerotinia)
- Anthracnose
- Root rots
- Bacterial blight
- Western bean cutworm
- Aphids

(D) **Utilization, Value-Added**

- Alternative uses for edible beans; new end-use products
  - Use of bean flour in the following food applications: gluten-free products or mixes (cookies, crackers, muffins, pizza crusts), healthy, functional flour blends (to optimize protein efficiency), extruded products (snack foods, breakfast cereals, pasta), baked good (crackers/chips, tortillas/pita breads, muffins, cookies)
- Quality analysis and processing techniques
  - Investigating the factors influencing cooking quality of whole pulses (e.g. hard-to-cook phenomena, etc.)
  - Detailed characterization of specific cell wall polysaccharides (e.g. what specific carbohydrate compounds make up the soluble and insoluble fibre portions of the seed)
  - Digestibility of bean flour (particularly the protein fraction) and determining the impact of pre-treatments (i.e. germination, heating, fermentation, etc)
- New domestic markets

3. **PEAS, FABA BEANS**: The following priorities revolve around developing disease resistant varieties and identifying innovative management practices and their effects on production under Manitoba's growing conditions.

(A) **Agronomy**

- Weed control
- Inoculants
- Variety development for:
  - Disease resistance
  - Winter peas
  - Water tolerance, especially in spring
- Management practices to control root rot and foliar diseases

(B) **Disease and Insect Control**

- Ascochyta blight
- Root rot

- Chocolate spot

(C) **Utilization, Value-Added**

- Quality analysis
  - Addressing pea flavour issues
  - Detailed characterization of specific cell wall polysaccharides (e.g. what specific carbohydrate compounds make up the soluble and insoluble fibre portions of the seed)
- Pea hull utilization
- Fractionation, processing
  - Digestibility of pea flour and pea protein concentrates, isolates and impact of pre-treatments (i.e. germination, heating, fermentation, etc)
  - Pea starch modifications to improve functionality for food applications
- Protein and energy assessment for livestock rations
  - Safety studies with pea fractions (fibre, starch, protein) in human and animal species of interest for feed and pet food applications that can be used for GRAS substantiation
- Aquaculture and other value-added opportunities
  - Investigating bioindustrial applications for pea starch

4. **OTHER**: Proposals studying the health and medical benefits of consuming pulses, which outline the specific benefits that would enhance the functional food or nutraceutical use of pulses, are encouraged.
   - Impact of specific components in beans/peas on cholesterol-lowering (e.g. soluble fibre vs. resistant starch)
   - Impact of beans vs. peas on satiety (subjective appetite and actual food intake)

MPGA's Research Proposal Guidelines

Project Title: State the research project's title, indicating that it is a proposal.

Principal and Collaborating Researchers: Provide contact information including address, e-mail and telephone number of all researchers involved with the project.

Duration of Project: Start date and anticipated date of completion.

Brief Project Description: Provide a 200 – 300 word summary that could be easily understood by a non-researcher or pulse grower. This description may be used when informing our members about new projects being funded, and may be featured on our website, www.manitobapulse.ca, or in our magazine, *Pulse Beat*. Consider this description an opportunity to outline the importance of your research to pulse producers in Manitoba.

Background and/or Literature Review: Explain the rationale for the project and how it corresponds to the needs of Manitoba pulse producers. Briefly outline background information leading to the development of the proposal.

Research Objectives: Provide a brief explanation of the objectives of your proposed research.

Experimental Activities and Methods: Provide an outline of the experimental methods to be used.

Benefits and Impact on Pulse Growers: Describe how the results of your research will benefit and provide value to pulse producers in Manitoba. If possible, quantify the impact in economic terms.

Milestones: List all major milestones and the month/year of anticipated completion.

Budget: Indicate all funding sources and their allocation (labour, supplies, equipment, etc.). Please clearly state if your proposal is a one, two or three year project, and how much funding is required each year from MPGA. If possible, indicate whether or not your project can proceed on a smaller scale if given reduced funding.

Communication Plan: Indicate how the progress and results of your research will be communicated to the public, specifically pulse producers.