2022 Funding Approved for Research†

OUR GOAL IS to have the list of projects below reflect the breadth of ideas and information pulse and soybean growers are eager to embrace. The list demonstrates that MPSG's research programs remain focused on four broad areas we think are important to members. Most topics within each area are drawn from first-hand observations of crops and soils recorded by farmers, agronomists and researchers. However, in the search for answers, we've learned it is necessary to reach into realms we can't observe first-hand. As a result, the list contains projects in areas such as soil microbiology and plant genomics that probe nature at a scale we cannot comprehend without the use of modern scientific tools. We used to refer to projects using such tools as "upstream" to distinguish them from research with more immediate and practical results.

Nowadays, we recognize such a distinction is unfair. Every question we seek to solve through research affects the improvement of farm practices.

Moreover, we've also learned that most projects, no matter how practical, do not stand on their own. Results always need to be interpreted in the context of a particular farm application. So, we've complemented research investments with knowledgeable MPSG extension professionals who provide that critical interpretive service through mediums like this magazine. Also, we supplement our own efforts with interpretive partnerships across the industry spectrum. In that regard, the list contains projects that were developed in the context of maximizing members' success in fulfilling yellow pea contracts with Roquette.

RESEARCHER	PROJECT	START	END	MPSG FUNDING	TOTAL VALUE
	IMPROVE YIELD AND QUALITY				
MPSG – MCVET	Evaluating Yield, Disease Resistance and Protein in Pulse and Soybean Varieties	1990	ongoing	cost recovery	cost recovery
AAFC – Mohr	Management Practices to Optimize Establishment and Early-Season Growth of Soybeans	2017	2022	$73,462	$144,022
IHARF				$35,280	
CMCDC				$35,280	
U of M – Lawley	Cover Crop Strategies for Dry Beans and Soybeans in Manitoba	2017	2022	$195,444	$195,444
AAFC – Mohr	Sustainable Soybean Cropping Systems for Western Manitoba	2017	2022	$98,325	$196,651
U of M – MacMillan	Optimizing Nitrogen Rates for Dry Bean Production	2017	ongoing	In 2016, MPSG committed $400,000 per year for five years to support applied research at the U of M. Under this program an Agronomist-in-Residence conducts research, extension and student training. Projects are reviewed annually to ensure they align with farmer priorities.	
U of M – MacMillan	Novel Pulse Cropping Systems	2017	ongoing		
U of M – MacMillan	Pea Crop Rotation Length and Sequence	2020	2023		
U of M – Lawley	Optimizing the Frequency of Soybeans in Manitoba Crop Rotations	2018	2023	$129,519	$496,588
U of M – Ayele	Mitigating Soybean Harvest Losses by Enhancing Podding Height	2018	2022	$82,411	$164,822
AAFC – Hou	Dry Bean Breeding for Early Maturity and Pest Resistance	2018	2023	$728,188	$1,456,376
AAFC – Bing	Pea Breeding for Yield, Pest Resistance and Flavour	2018	2023	$98,630	$2,776,828
AAFC – Han				$43,155	
AAFC – Cober	Short-Season Food-Type Soybean Breeding	2018	2023	$186,930	$2,368,188
AAFC – Cober	Meeting the Soybean Protein Meal Standard in Western Canada	2018	2023	$131,699	$658,500
U of G – Rajcan	Breeding for Organic Soybean Production	2018	2023	$20,000	$157,143
MPSG – On-Farm Network	Soybean Response to Seeding Rate	2012	ongoing	OFN	OFN
MPSG – On-Farm Network	Evaluation of Single vs. Double vs. No Inoculation Strategies for Soybeans	2013	ongoing	OFN	OFN
MPSG – On-Farm Network	Soybean Response to Biological Stimulants	2019	ongoing	OFN	OFN
MPSG – On-Farm Network	Soybean Response to Row Spacing	2019	ongoing	OFN	OFN

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RESEARCHER	PROJECT	START	END	MPSG FUNDING	TOTAL VALUE
Improve Yield and Quality continued					
MPSG – On-Farm Network	Evaluation of Inoculation Strategies for Peas	2019	ongoing	OFN	OFN
MPSG – On-Farm Network	Evaluation of Inoculation Strategies for Dry Beans	2019	ongoing	OFN	OFN
MPSG – On-Farm Network	Dry Bean Response to Nitrogen Fertility	2019	ongoing	OFN	OFN
MPSG – On-Farm Network	Pea Response to Seeding Rate	2021	ongoing	OFN	OFN
WADO	Intercropping Practices for Yellow Peas	2019	2022	$23,004	$69,012
AAFC – Mohr	Economic and Environmental Value of Peas and Soybeans in Rotation	2019	2022	$82,800	$160,560
U of M – Stasolla	Genetics to Overcome Drought and Salinity Effects in Soybeans	2019	2022	$139,725	$270,945
U of M – House	Soybean Protein Testing in the Regional Variety Trials	2022	ongoing	$56,595	$56,595
U of M – Oresnik	A Superior Rhizobium Strain for N-Fixation in Dry Beans	2019	2022	$188,830	$366,166
MPSG/MCA/MCGA	Tools and Techniques to Manage Extreme Moisture	2019	2022	$120,000	$823,000
U of M – House	Evaluating the Feeding Value of Western Canadian Soybeans for Layers, Pullets, Broilers and Swine	2020	2023	$239,760	$479,520
U of M – Oresnik	Effect of the Frequency of Soybeans in Rotation on Rhizobium and Soil Microbial Community	2020	2023	$110,486	$214,247
Roquette	Variety Adaptation Trial for Higher Protein Peas	2020	2022	$0	$17,064
Roquette	On-Farm Assessment of Precision Phosphorus Management for Crop Dry-Down	2020	2022	$0	$17,280
Roquette	Better Understanding of Return on Investment of Intercropping Combinations	2020	2022	$0	$18,507
Roquette	Pea Protein Survey/Investigation in the Swan River Region	2020	2020	$0	$5,076
Roquette	Development of Organic Extension Fact Sheets	2020	2022	$0	$3,072
AAFC – Mohr	Optimizing Nitrogen and Phosphorus Management for Dry Beans in Southwestern Manitoba	2021	2023	$93,150	$186,300
PAMI	Pea Seed Mortality Due to Air Seeder Damage	2021	2022	$31,050	$62,100
Morden Community Economic Development Corporation	Validating Opportunities and Building Local Capacity for Digital Agriculture	2021	2023	$32,000	$202,000
U of W – Bidinosti	Development and Evaluation of a Fully-Automated Data Rover for Rapid Data Collection of Stress Tolerance in Soybeans	2022	2023	$24,300	$48,600
U of M – Gulden	Rotational Effects and Optimized Plant Spatial Arrangement for Wheat Production in Manitoba	2017	2022	$82,800	$349,140
AAFC – Mohr	New Crop Rotation Economics	2018	2023	$35,000	$1,300,000
U of L – Leroy	Economics of Diverse Crop Rotations	2018	2023	$15,000	$351,000
	REDUCE THE COST OF PEST CONTROL				
MPSG – On-Farm Network	Field Pea Response to Foliar Fungicide	2017	ongoing	OFN	OFN
MPSG – On-Farm Network	Dry Bean Response to Foliar Fungicide	2017	ongoing	OFN	OFN
MPSG – On-Farm Network	Soybean Response to Foliar Fungicide	2018	ongoing	OFN	OFN
MPSG – On-Farm Network	Faba Bean Response to Foliar Fungicide	2020	ongoing	OFN	OFN
AAFC – McLaren	Management of Root Rot in Peas in Manitoba	2018	2023	$0	$88,305
U of A				$45,404	
AAFC – Vankosky	Prairie Insect Survey	2018	2023	$20,000	$571,000
AAFC – Leeson	Prairie Weed Survey	2018	2023	$25,000	$753,100
AAFC – Leeson	Prairie Herbicide-Resistant Weed Survey	2018	2023	$3,000	$88,000
AAFC – Geddes	The Next Generation of Prairie Herbicide-Resistant Weed Surveys	2020	2023	$48,445	$96,890
AAFC – Turkington	Prairie Disease Monitoring Network	2018	2023	$45,000	$1,360,000

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RESEARCHER	PROJECT	START	END	MPSG FUNDING	TOTAL VALUE
Reduce the Cost of Pest Control continued					
AAFC – Geddes	Glyphosate-Resistant Kochia – Rotation, Seeding Rates and Row Spacings	2018	2023	$15,000	$1,282,000
PAMI – Landry	Spray Drift Reduction with High-Clearance Sprayers	2018	2023	$30,000	$424,000
AAFC – Chatterton	Optimizing Disease Management Strategies for White Mould and Bacterial Blights of Dry Beans	2018	2023	$61,951	$616,904
AAFC – Chatterton	Pea Root Rot – Resistance Genes, Crop Rotation and Intercropping	2018	2023	$30,679	$1,636,818
U of S – Shirtliffe				$18,426	
U of M – Tenuta	Root Lesion Nematode Survey	2018	2023	$20,639	$853,813
AAFC – Chatterton				$4,975	
AAFC – McLaren	Strategies for Effective Management of Phytophthora and the Root Rot Complex of Soybeans	2018	2023	$75,506	$887,919
LU – Bélanger	Root Diseases – Genetic Screening Methods	2018	2023	$44,657	$652,776
U of M – Daayf	Defining Pathogen-Related Soil Quality Targets for Annual Legumes to Pursue Through Crop Rotation	2019	2022	$88,172	$253,782
AAFC – Geddes	Integrated Weed Management to Mitigate Glyphosate-Resistant Weeds	2019	2022	$110,940	$309,984
Roquette	Developing the Capacity to Detect and Quantify Aphanomyces Oospores and Disease Severity in Manitoba	2020	2022	$0	$36,936
Roquette	Efficacy and Return on Investment of Foliar Fungicide in Yellow Peas	2020	2022	$0	$64,800
Roquette	Volunteer Soybean Control in Yellow Pea Production	2020	2022	$0	$22,200
Roquette	Satellite Imagery – Assisted Sampling for Aphanomyces	2020	2021	$0	$34,496
AAFC – Geddes	Manipulating Weed Seed Production Through Phenology-Based Weed Control	2021	2022	$11,556	$46,224
ACC – Singh	Developing a Weather-Based Fungicide Application Decision Support Tool for Managing White Mould in Dry Beans	2021	2023	$41,850	$83,700
GROW MARKET DEMAND					
U of G – Duncan	Cholesterol-Lowering Properties of Dry Beans	2018	2023	$136,431	$757,680
AAFC – Ramdath				$47,196	
U of S – Nickerson	Pulse Ingredient Processing for Improved Flour Quality	2018	2023	$103,802	$2,866,150
AAFC – Hou				$12,571	
AAFC – Balasubramanium	Dry Bean Cooking Quality	2018	2023	$15,942	$87,444
IMPROVE SOIL QUALITY					
U of M – Lawley	Cover Crops – Establishment Windows, Soil Health and Yield	2018	2023	$40,000	$1,519,772
MPSG – On-Farm Network	Tillage Management for Dry Beans	2020	ongoing	OFN	OFN
AAFC – Crittenden	Understanding How Soil Health Affects Corn and Soybean Yield and Quality	2020	2023	$60,350	$241,400
New Era Ag	Using Wood Ash as a Soil Amendment to Control Clubroot – Effect on Peas and Soybeans in Northwestern Manitoba	2020	2023	$7,500	$153,540
Agri-Earth Consulting, PBS Water Engineering	Beneficial Practices for Soil and Water Quality, Excess Water and Drought Resiliency in Southwestern Manitoba	2020	2023	$33,729	$391,200
PAMI	The Effect of Low Ground Pressure Traffic Systems on Soil Compaction in Heavy Clay Soils Affected by Extreme Moisture Conditions	2021	2023	$21,000	$137,500
U of M – Bakker	Integrating Microbiology into Assessments of Soil Health in Manitoba	2021	2022	$37,827	$151,308
PAMI	Analysis of the Carbon Intensity of Legume Crop Production and their Potential for the Future Low Carbon Economy	2022	2022	$16,200	$32,400

† At time of printing.

AAFC – Agriculture and Agri-Food Canada
CMCDC – Canada-Manitoba Crop Diversification Centre
IHARF – Indian Head Agricultural Research Foundation
LU – Laval University
MCGA – Manitoba Canola Growers Association
MCVET – Manitoba Crop Variety Evaluation Trials
MPSG – Manitoba Pulse & Soybean Growers
MCA – Manitoba Crop Alliance
OFN – On-Farm Network
PAMI – Prairie Agriculture Machinery Institute
U of A – University of Alberta
U of G – University of Guelph
U of L – University of Lethbridge
U of M – University of Manitoba
U of S – University of Saskatchewan
WADO – Westman Agricultural Diversification Organization