

NEW RESEARCH COMMITMENTS 2020-2021

Manitoba Crop Alliance (MCA) entered into funding agreements for the following new research projects in our 2020-2021 fiscal year. The amount reflected in the “MCA Commitment” column represents the total funding over the lifetime of the project. Projects vary in length, from one year to projects ending in 2026. For more information about MCA’s research program, visit www.mbcropalliance.ca.

Project Title	Principle Investigator	MCA Commitment	End Date
WHEAT AND BARLEY			
Adapting wheat to arid environments: Mining Canadian germplasm for reduced night-time water loss and improved water productivity	Raju Soolanayakanahally	\$10,000	2024
Genomics research for improving rust resistance in wheat, a component of the Genome Canada project '4D Wheat'	Curt McCartney	MCA, Government of Manitoba* in-kind contributions	2023
Manitoba Crop Variety Evaluation Trials (MCVET) 2020 & 2021	Anne Kirk	\$40,000	2022
Optimizing nitrogen application rates for new red spring wheat cultivars in western Canada under irrigated and non-irrigated conditions	Stephen Crittenden and Taras Lychuk	\$178,000	2023
Alternative plant growth regulators (PGRs) to mitigate the adverse effects of lodging and enhance stress tolerance in wheat	Belay Ayele	\$150,012	2023
Producing high quality organic wheat	Martin Entz	\$26,400	2024
Application of antimicrobial peptides to increase cereal crops resistance to fungal pathogens	Andriy Bilichak	\$42,000	2022
Generating a rapid and low cost diagnosis of fungi on wheat	Sean Walkowiak	\$126,500	2024



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Targeting reproductive and spike traits for improving grain yields in wheat	Raju Datla	\$126,500	2025
Mapping novel fusarium head blight (FHB) and stripe rust resistance genes from Watkins landraces	Gurcharn Singh Brar	\$35,075	2023
Breeding hardier crops for Saskatchewan - Dynamic phenotyping to dissect component of water stress in wheat	Steve Robinson	\$59,400	2024
Maximizing durable disease resistance in wheat	Curtis Pozniak	\$36,225	2025
Increasing grain yield in CWRS wheat while maintaining grain protein levels and baking quality	Pierre Hucl	\$12,559	2023
Multi-pronged Fusarium head blight management strategy in Western Canada through insight into pathogen virulence mechanisms	Curtis Pozniak	\$27,780	2025
Contrasting fungicide applications and genetic fusarium head blight resistance for enhanced yield and quality of barley	Chris Holzapfel	\$17,762	2024
Assessment of new malting barley varieties for production and malting selection in Manitoba	Yueshu Li. CMBTC, MCVET	\$115,074	2024
Phenotyping and genomic selection for improved barley Deoxynivalenol (DON) resistance	Aaron Beatie	\$28,750	2026
Establishing a seed testing protocol and greenhouse-growth cabinet based disease evaluation method to improve disease management against bacterial leaf streak in barley	Randy Kutcher	\$7,792	2024
Examining Fusarium growth and interactions with barley trichomes under the hull	Matthew Bakker	\$1,569	2023



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Targeting mycotoxin resistance to control Fusarium head blight	Elizabeth Brauer	\$1,500	2023
Western barley breeding CORE support agreement - AAFC Barley Breeding	AAFC	\$76,673	2025
Collaborative agreement on barley breeding research - CDC barley research and development program	Aaron Beatie	\$163,565	2025
Western wheat breeding CORE support agreement - AAFC Wheat Breeding	AAFC	\$3,418,390	2025
Collaborative agreement on wheat breeding research - CDC wheat research and development program	Pierre Hucl, Curtis Pozniak, Randy Kutcher	\$1,464,597	2025
Collaborative agreement on wheat breeding research - University of Alberta	University of Alberta	\$291,524	2025
Collaborative agreement on wheat breeding research - University of Manitoba	University of Manitoba	\$893,264	2026
CORN			
Understanding how soil health affects corn and soybean yield and protein and how those effects vary by factors the grower can and cannot control	Steve Crittenden	\$113,400	2025
Mitigation and management of Cry1F resistance in European corn borer in Canada	Rebecca Hallet	\$50,000	2025
WHOLE FARM RESEARCH			
Building Manitoba extreme moisture research capacity-coordination and workshop meetings	Brent VanKoughnet	\$15,834	2022



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Best practices for soil and water quality, excess water management and drought resiliency in an undulating soil-landscape in southwestern Manitoba	Bruce Shewfelt, David Whetter, Bob Eilers	\$31,920	2022
The next generation of prairie herbicide-resistant weed surveys and surveillance	Charles Geddes	\$8,074	2023
Effect of varied ground pressure traffic systems for seeding on soil compaction and crop yields in clay soils affected by extreme moisture conditions	Lorne Greiger	\$39,000	2022
Manipulating weed seed production through phenology-based weed control	Charles Geddes	\$11,556	2023
Crop rotation affects disease suppressive soil microbiomes	Xiben Wang, Randy Kutcher	\$84,000	2022
Achieving full integration of microbiology into assessments of soil health in Manitoba	Matthew Bakker	\$37,827	2022
Next generation fungicides - translating dsRNA technology from the lab to the field	Steve Robinson	\$82,500	2024
Stimulating germination of wild oat and volunteer cereals (wheat, barley and oats) from the soil seed bank	Shaun Sharpe	\$8,662	2022
Low cost paper-based strip tests for detection of mycotoxins in grains	Maria DeRosa	\$16,870	2023
Understanding auxinic herbicide resistance in kochia and staying ahead of what's next	Charles Geddes	\$13,900	2025
Resistant wild oat action committee (RWOAC)	Eric Johnson	\$14,500	2023



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Developing decision support tools for effective herbicide use in the face of herbicide resistance	Breanne Tidemann	\$27,498	2024
Research to explore socio-economic impacts of disruptions on agri-food supply chains and markets	Derek Brewen	\$336,988	2024
Grain dryer efficiency	Lorne Greiger	\$172,560	2024
Fertilizer use surveys for sunflower, corn, flax, wheat and barley	Fertilizer Canada	\$38,600	2021
RESEARCH ON THE FARM			
Research on the Farm (wheat, barley, corn and sunflower)	MCA	\$95,000	2021
OTHER/CAPACITY BUILDING			
Prairie Crops and Soils Research Facility (PCSRF)	University of Manitoba	\$500,000	N/A
Petern Falling Number© instruments	Belay Ayele and Curt McCartney	\$51,345	N/A
TOTAL 2020-2021 NEW RESEARCH COMMITMENTS			\$9,100,945
*Manitoba Government funding that matches MCA 4D Wheat contributions begun in 2019			