NEWSLETTER

DIVERSIFICATION CENTRES

RESEARCH | EXTENSION | ADOPTION

MCDC PCDF PESAI WADO

JUNE 2023

DCs MAKING GOOD SEEDING PROGRESS

Seeding progress is well underway at all Diversification Centres (DCs). Research staff worked long hours in an effort to seed crops while soil and weather conditions permit. Availability of adequate soil moisture accelerated the rate of germination and emergence in crops. All DCs' report good and uniform germination percentage in majority of trials, however flea beetles are starting to become an issue.

DCs are spraying pre-emergence herbicide to control early weed infestations. Some research initiatives for this year include examining the protein contents in soybeans between irrigated and dryland conditions, effect of variable rate irrigation application on potato yield and quality, seed spacing and plant population test in sunflowers, impact of nitrification inhibitors on green house gas (GHG) emissions, and lupins variety evaluation.

UPCOMING EVENTS

July 19

Annual Field Day
Westman Agricultural Diversification Organization (WADO) Melita, MB

July 25

Annual Field Day
Prairies East Sustainable Agriculture Initiative Inc. (PESAI) - Arborg, MB

August 2

Annual Field Day
Parkland Crop Diversification Foundation (PCDF) Roblin, MB

August 9

Annual Field Day
Manitoba Crop Diversification Centre (MCDC) - Carberry, MB

MCDC Tests Variable Rate Irrigation Impact On Potatoes

With water becoming a more scarce and managed commodity in agriculture, better irrigation management is required for maximizing water resource potential through conservation and efficient water use. The field crops may have variable water requirements within the same field due to differences in soil type, topography, and crop type. Variable rate irrigation system can apply the correct amount of water where it is needed. In 2023, the MCDC is initiating a trial to examine the impact of variable rate irrigation application on potato yield and quality.

Water is an essential part of our growing communities, vibrant agriculture sector and expanding industries. The water availability and security is significantly impacted by climate change and extreme weather conditions including floods and droughts. The precise management of water resource for agriculture, such as application of variable rate irrigation will contribute to water security. It will also conserve and protect the environment, enhance resiliency, improve water quality and availability, and foster economic development opportunities.

As a major net consumer of water, agriculture is a significant stakeholder in Canadian water management. Using variable irrigation rates to meet a crop's fluctuating water demands across a field might yield significant benefits.

WADO Explores Fall Seeded Crops Potential in Westman

Fall seeded crops allow producers to get a jump on seeding before spring and also provide great habitat for wildlife during the spring such as waterfowl. Rye and winter wheat are standard winter crops for Manitoba. Along with these, the WADO seeded some novel winter crops last fall in September including winter pea, oat, lentil, camelina and barley. Assessments for winter survival were conducted this spring and found only the winter wheat, rye and camelina survived the winter. As a side project, these crops were also seeded in early April, all of which have emerged. The WADO continues to research winter crops so farmers have alternative options to spring seeded crops to improve farm resilience and reduce risk.

GHG Emission Training at MCDC

Diversification Centres are taking up the GHG emission research in partnership with the Soil Science Department of University of Manitoba (U of M). Dr. Mario Tenuta is the lead on this multi-year project in which reduced nitrogen rate and nitrification inhibitors will be assessed to examine their impact on the reduction of nitrous oxide emissions. In this regard, a training was held on May 24 at the Manitoba Crop Diversification Centre (MCDC) in Carberry. Brad Sparling (Technician, U of M) provided instructions how to collect GHG emission samples. The U of M also provided necessary equipment for collecting samples to all four DCs during the training.

A vast amount of nitrogen fertilizer is used in agricultural systems to fulfil the world's expanding food demand. While it promotes food production, it also generates major environmental threats, including water eutrophication, groundwater nitrate pollution, nitrous oxide and other GHG emissions. Nitrification inhibitors can reduce nitrous oxide emissions, slow nitrogen leaching, improve nitrogen utilization efficiency and increase crop production. Since nitrous oxide is produced mostly from excess available nitrogen in soils, one way to suppress emissions of this gas is to apply fertilizer judiciously: adding just enough, at the right place and time, to meet crop demands, but avoiding excess amounts left over. This can reduce fertilizer costs to producers and reduce the amount of nitrogen lost through excess fertilizer application.

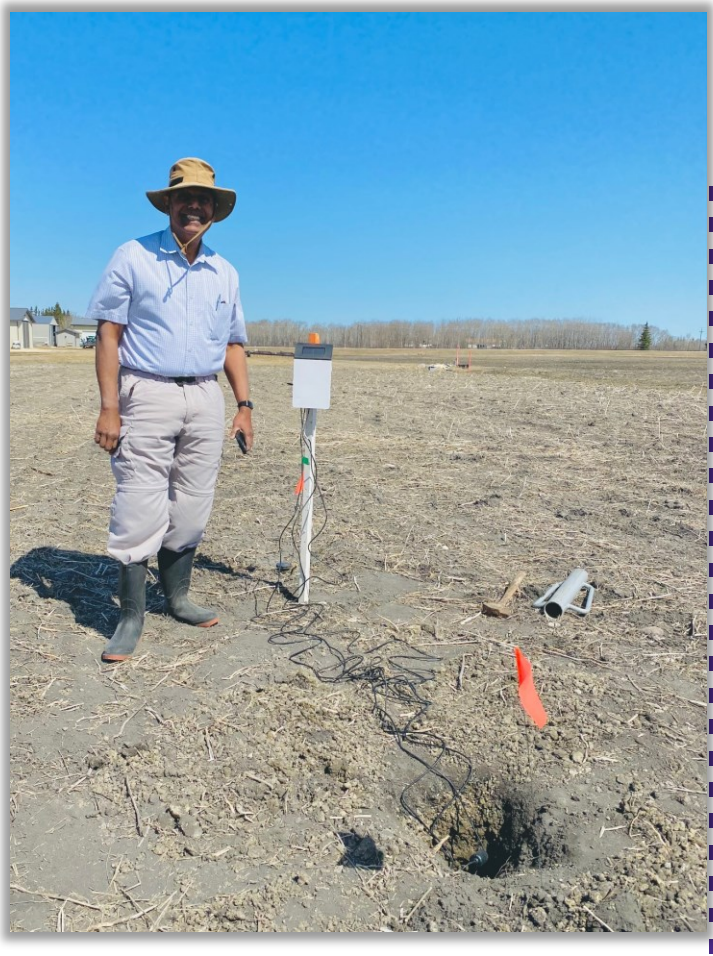
Source: Agriculture and Agri-Food Canada

Seeding Updates from PESAI

As of May 26, Prairies East Sustainable Agriculture Initiative (PESAI) has seeded 95% of the plots. Most of the plots were planted using plot seeder, however, few projects were planted using air seeder. Both of the tile drainage projects, top crop challenge & MFGA regenerative Ag projects were seeded using 3.6 m wide air seeder. Usually, the plot size for this seeder will be > 200 m^2. During 2023, Beausejour site has more projects with the addition of MCVET grain corn, Nutrein Ag grain corn & MCVET sunflowers trials. PESAI also does MCVET cereals & soybeans at Beausejour site along with Nutrien Ag, Syngenta & ASCIA soybean evaluations. Seeding at the Arborg site started on May 12 and a total of 30 trials have been planted.

Installation of Probes for Tile Drainage Plots

PESAI has installed probes for its tile drainage projects at the Arborg site. PESAI is conducting a project in collaboration with the Dr. Sri Ranjan (University of Manitoba) in which cover crops will be tested on tiled plots to see if they can affect water and nutrient outflow from the tiled land. In another project, sub surface irrigation (through tiles) will be assessed for effects on soybean production. These probes are installed at 20, 60, & 90 cm soil depths and they will record soil temperature, soil moisture and EC from tiled and non-tiled plots. The probes are connected to data loggers which transmit data continuously. PESAI rented a machine auger to put in the probes. In addition, water level loggers and flow meters will be installed to get data on water table and water / nutrients coming out of the tiles.



Staff Biography (Summer Students)

My name is Clément DAVID, a 19-year-old living in Hambye, a small town in Normandy, France. Currently in my second year of pursuing a Bachelor's degree in Agroecology and Food Systems in France, I have inherited my parents' passion for agriculture. Eager to explore the Canadian agricultural system, its strengths and weaknesses, I have chosen the WADO for my internship. Over the course of two and a half months in Canada, I aspire to gain invaluable insights into Canadian agriculture while also bringing back sustainable practices to enhance the French system.

With my parent's farm serving as a foundation, I aim to learn extensively about Canadian farming techniques, environmental initiatives, and innovative approaches that can contribute to a more sustainable and efficient agricultural system in France.

The MCDC welcomed back Taylor MacIsaac as a Co-op Summer Student this year. Taylor is passionate about her work with huge interest in agriculture research.

Taylor MacIsaac started working at the Manitoba Crop Diversification Centre (MCDC) in 2022 as a Summer Student and returned as a Co-op Summer Student this year. She has an important role in organization and completion of tasks. She is a second-year Bachelor of Science in Agriculture student at the University of Manitoba. She aims to major in Plant Biotechnology. In her free time, Taylor enjoys camping, fishing and kayaking at Lake of the Prairies.

Braden Gustafson joined the MCDC in May this year as Summer Student. His role includes providing assistance in data collection, seeding operation and plot maintenance. Braden brings excellent skill-sets to MCDC making him a great fit for this position. He is attending the University of Manitoba where he completed his first year of the Bachelor of Science in Agriculture (Plant Biotechnology program). In summer months, Braden enjoys spending time with his two cats along with going to his cabin to relax.

Diversification Centres

Extending Ag-Innovations for Sustainable Agronomic Solutions

2023 Extension Events

Learning events featuring producers, researchers and agricultural professionals all focused on ensuring Manitoba producers are equipped with the knowledge and tools to grow the best food and feed crops possible.

WADO
July 19

Westman Agricultural Diversification Organization

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PESAI
July 25

Prairies East Sustainable Agriculture Initiative

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PCDF
August 2

Parkland Crop Diversification Foundation

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MCDC
August 9

Manitoba Crop Diversification Centre

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Networking and Learning Opportunities

Variety Evaluation
Insect, Disease and Weed Management
Crop Diversification
Regenerative Agriculture
Forage Productivity
Crop-Livestock Integration
Precision Agriculture
Water Management
Technology Evaluation
GHG Measurement and Management

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FOR MORE INFORMATION AND REGISTRATION, PLEASE CONTACT APPLIED RESEARCH SPECIALISTS AT DIVERSIFICATION CENTRES.