NEWSLETTER

Diversification Centres

March 2025

Manitoba Beef & Forage Day in Roblin, MB

PCDF Engages with Farmers and Industry Leaders

The Parkland Crop Diversification Foundation (PCDF) continues to share its field trial results with farmers and stakeholders, including beef producers from the Parkland region, Federated Co-operatives agronomists, University of Manitoba graduate students, and the Minister of Agriculture at a Headingley, MB flour mill. PCDF also participated in the 2025 Manitoba Beef & Forage Days on January 9 in Roblin, where producers, agronomists, and industry experts gathered to discuss key topics in beef and forage management.

The event featured Dr. Greg Penner on forage efficiency and Dr. John Campbell on cattle nutrition. Other sessions covered extended grazing, pasture rejuvenation, and market outlooks. PCDF staff had the opportunity to engage with producers, exchange insights, and discuss innovative practices for improving forage productivity.

UPCOMING EVENTS*

March 4

Introduction to Commercial Strawberry Production
Webinar

March 4-6

Sustainability of Canadian Agriculture
Virtual Conference

March 11

Introduction to High Tunnels and Their Design
Webinar

March 13

StockTalk
Webinar

March 31-April 5

Manitoba Royal Winter Fair
Brandon - MB

**Click events' names for more details.*

MCDC and AAFC Collaborate to Enhance Nitrogen and Phosphorus Management for Dry Beans in Manitoba

Black Beans and Pinto Beans at Maturity – Carberry Dry Beans trials 2024

Researchers at the Manitoba Crop Diversification Centre (MCDC) in Carberry, in collaboration with Agriculture and Agri-Food Canada (AAFC) Brandon, are achieving progress in optimizing nitrogen (N) and phosphorus (P) management for dry bean production in southwestern Manitoba. As part of a multi-year study (2024-2027), these trials aim to improve fertility recommendations and enhance yield potential for local farmers.

The project, led by AAFC scientist Ramona Mohr, investigates the impact of varying N and P fertilizer rates and placement methods on black and pinto bean yield. Field trials conducted at MCDC-Carberry in 2024 showed that increasing N rates generally improved bean yield, though excessive applications led to diminishing returns. Interestingly, while inoculation did not significantly affect yield, N rates influenced nodulation trends, with Carberry trials showing increased nodulation at higher N levels, a contrast to previous years.

Phosphorus trials at Carberry revealed that P fertilizer improved black bean yields, while pinto bean showed no significant response. Additionally, P placement – whether seed-placed or side-banded – had minimal effect on yields. These findings provide valuable insights for farmers seeking to optimize fertilizer strategies for dry bean production. The research will continue in 2025, further refining nutrient management recommendations tailored to Manitoba's growing conditions. This initiative is supported by Manitoba Pulse and Soybean Growers (MPSG) and the Sustainable Canadian Agricultural Partnership (S-CAP).

Contact us: info@mbdiversificationcentres.ca

WADO's 2025 Research Focus: Exploring the Future of Hybrid vs. Conventional Hemp Varieties

In 2025, the Westman Agricultural Diversification Organization (WADO) has partnered with Jeff Kostuik of Verve Seeds to conduct groundbreaking research comparing the performance of hybrid hemp to conventional (open-pollinated) hemp. This ambitious study will focus on critical factors such as seeding rate and nitrogen demand in these two hemp types.

Hybrid hemp is recognized for its superior yield, a result of its "hybrid vigor" – a term used by plant breeders to describe the enhanced growth seen when different plant varieties are crossbred. One significant advantage of hybrid hemp is its markedly lower proportion of male plants, which do not produce grain. While conventional hemp contains approximately 50% male plants, hybrid hemp has only around 5%. This reduction in male plants allows more resources, such as light, water, and fertilizer, to be directed toward the productive female plants.

To investigate the relationship between hemp cultivar type, seeding rate, and nitrogen fertility, WADO is implementing its first-ever split-split plot design. The research aims to determine whether hybrid hemp can thrive with lower seeding rates due to its reduced male population. However, a key hypothesis is that achieving high yields with hybrid hemp may require higher nitrogen fertilizer input compared to conventional hemp.

Variety trials conducted in Melita in 2024 revealed that hybrid hemp varieties yielded 26% more than the top-performing conventional variety. This raises an important question: Can hybrid hemp allow for lower seeding rates while requiring higher nitrogen inputs than conventional hemp? The answers may begin to unfold in 2025, marking a new chapter in hemp cultivation.

File Photo: Jeff Kostuik presenting to WADO field day attendees in 2024

Visit our website: mbdiversificationcentres.ca

Integrating Legume Cover Crops in Winter Wheat Production

Interest in cover crops is increasing due to their significant benefits for soil health and nitrogen contribution. One promising method for integrating legume crops into a cropping system without sacrificing an entire season of grain production is relay cropping. This approach aligns well with winter wheat, which is typically harvested in late July to early August, leaving sufficient time for cover crop growth before the first frost. The success of relay cropping hinges on the cover crop's ability to establish effectively within the winter wheat and produce enough fall biomass to benefit both the soil and the primary crops.

Winter Wheat and Cover Crops Intercropping (PESAI)

In September 2023, a project aimed at testing cover crops in winter wheat was launched across all four Diversification Centres (DCs) — PESAI Arborg, MCDC Carberry, WADO Melita, and PCDF Roblin. Funded by the Manitoba Crop Alliance, the project is led by Provincial Cereal Specialist Anne Kirk. The main objectives are to evaluate the establishment of cover crops in winter wheat and investigate whether cover crops influence the grain yield of the primary crops, such as winter wheat and canola. The project involves planting winter wheat with cover crops seeded both in the fall and spring. Fall-seeded cover crops are planted in the same row and depth as the winter wheat, while spring-seeded cover crops are broadcasted as early as possible. Established cover crops will continue to grow in 2025 when canola will be direct-seeded into the trial area. The study includes four legume cover crops (sweet clover, white clover, red clover, and alfalfa), a non-legume cover crop (perennial ryegrass), and a control group with no cover crop. Data collected during the first year included winter wheat and cover crop plant populations, winter wheat yield and protein content, dry matter production of legume crops, and nitrate nitrogen levels in late fall.

Cover Crop Establishment:

Across all locations, cover crop establishment was better with spring broadcast seeding compared to fall seeding. The higher-than-usual precipitation in May and June likely facilitated better legume establishment in the spring broadcast treatments. At Arborg and Melita, fall-planted alfalfa showed the best establishment

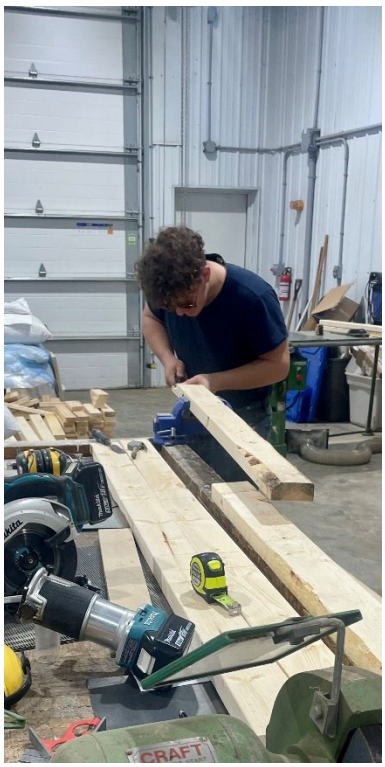
among the fall-seeded cover crops. However, in Roblin, there were no significant differences in the establishment of fall-seeded cover crops. Overall, cover crops established better at Arborg than at the other locations, likely due to seeding timing, precipitation, surface residue, and soil conditions. Cover crop biomass production was poor at Carberry, Melita, and Roblin, potentially due to competition from the winter wheat. However, biomass production at Arborg was excellent, with the exception of fall-seeded white clover and sweet clover.

Wheat Yield and Protein Content:

Cover crops did not have an impact on winter wheat grain yield. No significant differences were observed in wheat yield across all treatments, nor were there any notable trends in protein content between legume and non-legume cover crops. Soil nitrate nitrogen levels at Arborg did not reflect the high biomass production, but this may become evident in year two of the project, as cover crops continue to grow and contribute to soil nitrogen levels.

This project represents a valuable step toward understanding how legume cover crops can be integrated with winter wheat to improve soil health and nutrient cycling, with potential long-term benefits for overall crop productivity.

PCDF Partners with Skinner Native Seeds to Build Innovative Winnow Wizard Seed Cleaners for 2025 Season



Equipment Manufacturing

With spring on the horizon, PCDF is preparing for the upcoming field season and has teamed up with Skinner Native Seeds to build several innovative "Winnow Wizard" seed cleaners.

Unlike traditional seed cleaners that use screens, the Winnow Wizard uses a controlled air stream to separate seeds by size and density, making it ideal for cleaning small, irregularly shaped seeds or those contaminated with rocks. This efficient cleaning process ensures seeds are ready for planting with minimal contamination. Building plans for the cleaner are available here for those interested in constructing their own units, as PCDF continues to enhance seed preparation for farmers.

Winnow Wizard's 3-D Model

Visit our website: mbdiversificationcentres.ca