

# NEWSLETTER

## Diversification Centres

**DECEMBER 2023**



*Drone Image of Annual Forages Variety Evaluation Trial in Carberry – Source: MCDC*

### Advancements in Annual Forages Research Showcased at Diversification Centers

The Diversification Centres across the province, collaborate with the Manitoba Crop Variety Evaluation Team (MCVET), Manitoba Seed Growers Association, Manitoba Beef Producers, and Manitoba Agriculture to conduct multi-site forage research in Manitoba. The primary objective of this collaborative effort is to explore and enhance the use of annual crops for green feed, silage, and grazing. The initiative encompasses variety evaluation trials conducted across various locations in the province,

including Carberry, Roblin, Arborg, Melita, and Carman. These strategically chosen sites aim to provide a representative sample of Manitoba's diverse agroecological conditions, allowing to assess forage yield and quality under different circumstances. The trials involve assessments of forage yield and quality, providing valuable data that can inform producers about the most effective choices for their operations. By focusing on green feed, silage, and grazing applications, the project seeks to optimize the use of

## UPCOMING EVENTS\*

December 4-6

**2023 Manitoba**

**Watersheds Conference**  
Keystone Centre – Brandon, MB

December 12-13

**Manitoba Beef & Forage  
Production Conference**  
Victoria Inn Hotel & Conference  
Centre – Brandon, MB

December 13-14

**Manitoba Agronomists'  
Conference (MAC)**  
University of Manitoba –  
Winnipeg, MB

January 16-18

**Manitoba Ag Days**  
Keystone Centre – Brandon, MB

January 23-25

**Manitoba Potato  
Production Days**  
Keystone Centre – Brandon, MB

*\*Click event's link for more detail.*

annual crops in supporting livestock operations while simultaneously promoting sustainable agricultural practices. To keep stakeholders and the agricultural community informed, the Manitoba Crop Diversification Centre (MCDC) collaborated with Provincial Forage & Livestock Specialist, Shawn Cabak, to create an insightful video providing updates on the 2023 research trial.

The video, a comprehensive overview of the ongoing research initiative, aims to offer a visual and informative update on the progress of the trial conducted by the Manitoba Crop Diversification Centre (MCDC). Shawn Cabak takes center stage in the video, presenting crop types, their growth potential, key findings, observations, and future implications of the ongoing forage research. The video can be accessed through the Diversification Centre's YouTube channel, website, and X handle. For detailed information on the project description and results, please visit the website: <https://mbdiversificationcentres.ca/> or follow us on X @CropCentres.

# MCVET Annual Forages Variety Evaluation

Manitoba Crop Diversification Centre  
Carberry, MB

**Video:** MCVET Annual Forages Variety Evaluation - 2023 Update. Click on the image or link below:  
<https://www.youtube.com/watch?v=d0XqNaiC25g&t=1s>

## PESAI will Present Research Findings at South Interlake Grain Day

Nirmal Hari, Applied Research Specialist with Manitoba Agriculture, is presenting at South Interlake Grain Day on January 4, 2024. The South Interlake Crop Testing Committee at Clandenboye will host this grain information day. Nirmal's presentation will focus on "PESAI Research Program – Crop Research Results from the Interlake."

## South Interlake Grain Day

The South Interlake Crop Testing Committee (SICTC) invite you to join us for Grain Information Day 2024 to hear the latest information on Manitoba's grain industry from the experts.

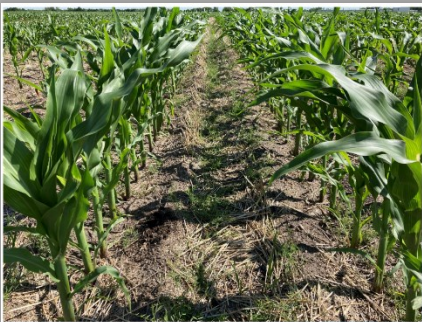
**Date:** Thursday, January 4th, 2024  
**Time:** 8:30 a.m. to 3:00 p.m.  
**Place:** Clandenboye Community Centre  
111 Main Street, Clandenboye, MB



Visit our website: [mbdiversificationcentres.ca](https://mbdiversificationcentres.ca)

# WADO Highlights Crop Diversification at MB Agronomists' Conference

The crop diversification not only provides a vast array of foods to grow and eat, but it can also reduce economic and environmental risk on the farm and to the broader geography of Manitoba, a strategy, so to say, “don’t put all your eggs in one basket.” In pursuit of growing many crops that Manitoba can produce, there are compounding risks and challenges that come with diversification. Scott Chalmers will be presenting at the Manitoba Agronomists’ Conference, “Crop Diversification: What worked, what hasn’t.” This presentation will pose the importance of crop diversification, the inherited successes, risks & challenges in developing diversified crops and their industries. Scott will present on behalf of Manitoba’s Diversification Centres, the applied research network, which has had years of experience researching diverse crops, their successes, failures, and some compelling risky opportunities. The presentation will be made on December 14<sup>th</sup> from 11:00 am – 11:30 am at the University of Manitoba’s Department of Plant Science. Details can be found online at: <https://umanitoba.ca/agricultural-food-sciences/school-agriculture/school-manitoba-agronomists-conference>.



< Corn able to get head start while vetch is injured by glyphosate. Photo taken June 28, 2021.

Hairy vetch starts aggressive growth later during post silk stage. Photo taken Aug 11, 2021 >



Harvest began Oct 6, 2021 and some issues with vetch growing upside of corn near the cob which wound around the stalk rollers. Recommend a high cobbing variety if going for grain.

## Attending the Manitoba Agronomists' Conference?

Scott Chalmers will be debuting the Westman Agricultural Diversification Organization’s poster: “Can hairy vetch be a worthwhile companion in grain corn and grazing corn strategies, or is it just another big hairy monster?” The poster presents the final two site year results on this small plot study, which sought to determine the effects of varying the seeding rate of corn with or without the use of hairy vetch as a companion crop to observe the dynamics of total biomass, grain production, feed quality scenarios, and nitrogen economy.

*Click the photo for the full Hairy Vetch and Grain Corn Companion Cropping poster.*



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# Wheat - Living Mulch Trial Update from PCDF

Not even freezing weather can slow down data collection at the Parkland Crop Diversification Foundation (PCDF). Two weather stations have been set up in the wheat-living mulch trial, which is being done in collaboration with Manitoba Crop Alliance and the University of Manitoba. The probes to measure soil temperature have been inserted at two inches, and the data will be accessed throughout the winter.

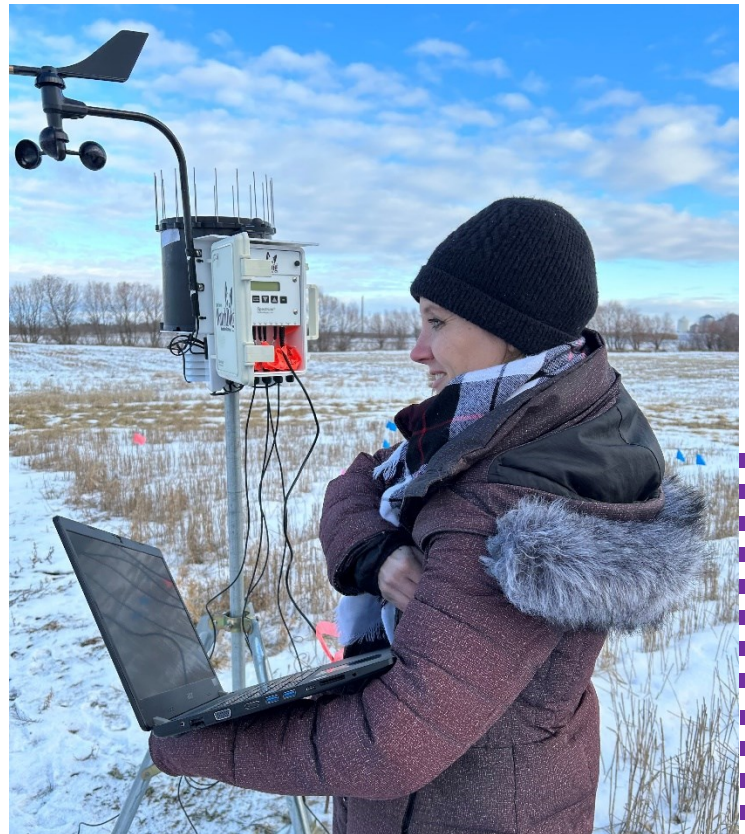
The soil temperature during the winter months is strongly affected by a few factors, including snow cover, crop residue, soil compaction and soil moisture. When soil temperatures drop to critical lows, crop roots can be damaged, resulting in winterkill. Crop residue from a living mulch can help to capture snow, providing a good insulative layer for the soil and helping to protect the living roots.

More broadly, the statistical analysis is underway for the wheat-living mulch trial. Preliminary results show that the inclusion of a living mulch with the wheat crop did not affect the grain yield of wheat. Likewise, the protein content for wheat was largely unaffected. These initial observations indicate that producer income for the establishment year will remain constant. In spring, a canola crop will be seeded into the living mulch. Stay tuned for more results!

**Including a living mulch with the wheat crop is a practice where wheat is grown alongside other cover crops to provide various benefits. A living mulch is a cover crop seeded and grown between rows of main crops to protect and enhance the soil health.**



**Wheat-Living Mulch Plots Harvesting at PCDF**



**Jessica Frey collecting Winter data**

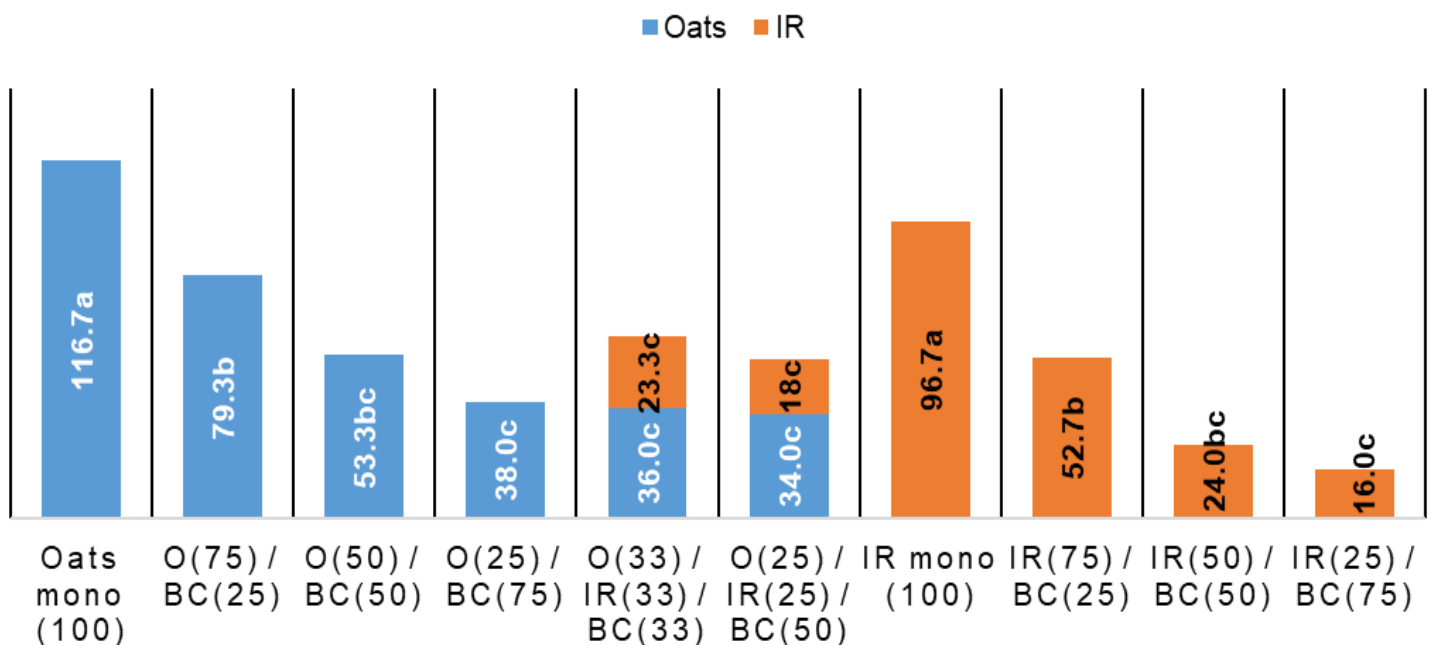


View our videos on YouTube: [www.youtube.com/@manitobacropdiversificatio5457](https://www.youtube.com/@manitobacropdiversificatio5457)

## PESAI Tests Mixed Cropping for Forage Production

The objective of this project is to evaluate different seeding rates of oats (O) / Italian ryegrass (IR) /berseem clover (BC) mixed crops for forage yield potential in comparison to their mono-crops. During the 2023 growing season, berseem clover did not emerge due to very dry conditions during May & June at the Arborg site. However, oats and Italian grass did emerge, and their plant establishment was higher in plots where both species were grown as mono-crops. When their seeding rate was reduced to 75% of the recommended, it resulted in lower plant establishment than their mono-crop plots. Further lowering of the seeding rate (50%, 33% or 25% of the recommended) greatly reduced plant establishment both for oats & Italian grass.

This test recorded significant differences in forage yield among different forage treatments (Table 1). Plots having oats mixed at any of the seeding rates did produce higher forage yield than Italian ryegrass plots or mixed plots of Italian ryegrass & berseem clover. The plots of oats mono-crop (100% seeding rate) had a similar yield as of plots where oats were mixed only at 25% of the recommended seeding rate with berseem clover. As berseem clover did not establish, these yields are primarily from oats. It appears that oats were able to grow more profoundly even at reduced seeding rates to produce similar forage yield as of pure oat stands. Italian ryegrass was not competitive with oats for forage production.



**Plant Establishment (No. of Plants / m<sup>2</sup>) of Different Forage Species / Mixtures at the Arborg Site during the 2023 Growing Season**



Contact us: [info@mbdiversificationcentres.ca](mailto:info@mbdiversificationcentres.ca)

**Table 1. Forage yield from different cropping treatments in the test at the Arborg site.**

<i>Cropping treatment</i>	<i>Dry Matter Forage Yield (tonnes/acre)</i>
<i>Oats mono (100)</i>	<i>4.762 a</i>
<i>O (50) – BC (50)</i>	<i>4.603 a</i>
<i>O (25) - IR (25) - BC (50)</i>	<i>4.521 a</i>
<i>O (33) - IR (33) - BC (33)</i>	<i>4.338 a</i>
<i>O (25) – BC (75)</i>	<i>4.224 a</i>
<i>O (75) – BC (25)</i>	<i>4.126 a</i>
<i>Italian Ryegrass mono (100)</i>	<i>1.342 b</i>
<i>IR (75) – BC (25)</i>	<i>1.102 b</i>
<i>IR (50) – BC (50)</i>	<i>0.940 b</i>
<i>IR (25) – BC (75)</i>	<i>0.672 b</i>
<b>P</b>	<b>&lt;0.0001</b>
<b>Significant Difference</b>	<b>YES</b>

Lack of moisture after seeding proved to be detrimental to many plots in the test. Berseem clover did not emerge due to dry conditions. Reduced seeding rate had significant effects on plant establishment for both oats and Italian ryegrass, and it resulted in lowering plant populations. In the current test, Italian ryegrass did not grow well, and it produced a much lower yield than in plots where oats were mixed. Italian ryegrass yields were lower than oats, even in a wet year in Manitoba. On the other hand, oats produced good forage yield even at a reduced seeding rate. During 2022, we found Italian ryegrass – berseem clover mixed cropping as a good option for second cut forage production as both crops can tolerate mild frost events. We did not take forage yield during the second cut in 2023 as berseem clover did not establish.

**Table 2. Seeding Rates (lbs/acre) used in the Study**

Italian Ryegrass (IR) mono (100)	20 (full rate)
Berseem Clover (BC) mono (100)	12 (full rate)
Oats mono (100)	100 (full rate)
IR (25) – BC (75)	5 / 9
IR (50) – BC (50)	10 / 6
IR (75) – BC (25)	15 / 3
O (25) – BC (75)	25 / 9
O (50) – BC (50)	50 / 6
O (75) – BC (25)	75 / 3
O (33) - IR (33) - BC (33)	33 / 6.7 / 4
O (25) - IR (25) - BC (50)	25 / 5 / 6

