

NEWSLETTER

Diversification Centres

March 2024



Manitoba Diversification Centres' Booth at Crop Connect Conference 2024

Diversification Centres Share Research Outcomes at the Crop Connect Conference 2024

The Diversification Centres (DCs) were participants as exhibitors at the 2024 Crop Connect Conference. The conference which held on February 14th and 15th at the Victoria Inn Hotel & Convention Centre in Winnipeg, MB. The conference offered a wide range of speakers, access to crop-specific information, a trade show, and a banquet.

This event provides an excellent platform for DCs to disseminate

research outcomes to producers and industry stakeholders. The DCs' booth experienced a continuous influx of visitors.

This year's event featured 27 speakers covering a wide range of topics. Presentation themes included weather extremes, farm business management, nutrient management, farmer mental health, data handling, sustainable crop production, and employee recruitment and training in agriculture sector.

UPCOMING EVENTS*

March 5-7

2024 Canadian Crops Convention

Fairmont Hotel – Winnipeg, MB

March 6

Seminar Recreating Historical Weather Data for Agro-Manitoba

University of Manitoba – Winnipeg, MB

March 7

Business Planning for Successful Farm Management

Victoria Inn Hotel & Convention Centre – Brandon, MB

March 12-14

Sustainability of Canadian Agriculture

Virtual Conference

March 14

StockTalk Webinar

Virtual Session

*Click event's link for more details.

Manitoba Diversification Centres' Planning Meeting



A planning meeting was held on February 7 at Canad Inns Destination Centre in Portage la Prairie, MB to discuss future direction and priorities for the Manitoba diversification centres. Representatives from Manitoba Agriculture, commodity associations, University of Manitoba, Assiniboine Community College and the Diversification Centres' boards members participated in the meeting. Patti Rothenburger (Assistant Deputy Minister, Ag Production & Resilience) and Heather Martens (Director, Primary Agriculture Branch of Manitoba Agriculture) welcomed the participants. Afterwards, the DC Specialists delivered a presentation on the Diversification Centres' research highlights. The morning session also included presentations on Regenerative Ag, Value Added Opportunities and Digital Ag. The participants were divided into separate groups to discuss strategic planning in the afternoon session, and later reconvened to present their findings.



Visit our website: mbdiversificationcentres.ca

Cross-Provincial Collaboration: Intercropping Insights from Manitoba to Alberta

Scott Chalmers, Applied Research Specialist, with Manitoba Agriculture, will be one of the speakers, at the Mackenzie Applied Research Association (MARA) in the Intercropping Winter Webinar. Scott currently leads the applied research program at the Westman Agricultural Diversification Organization (WADO) in Melita. Scott will be speaking about his experiences on intercropping from a Manitoba perspective. The focus of the webinar, will be to share best practices, especially as it relates to farms in Northern Alberta. Scott will join MARA's group manager Dr. Naveen Arora and two local producers (Russell Friesen and Daniel Wall) as speakers for this winter webinar.

For more details on how to participate in the webinar, please see the ad:



Agriculture and
Agri-Food Canada



Intercropping Winter Webinar

Friday, March 8th @ 10am-12am

P: 780 927 3776



Call to register and receive Zoom Link

OR

Register to come to the MARA office to view the meeting



Speakers

- **Dr Naveen Arora** (MARA Research Manager)
- **Russell Friesen** (Local Producer with Barley, Pea and Polish Canola field 2023)
- **Daniel Wall** (Local producer with oats and peas in a perennial stand 2023)
- **Scott Chalmers** (intercrop expert, Manitoba producer)

About McKenzie Applied Research Association (MARA):

The Mackenzie Applied Research Association (MARA) is a not-for-profit producers-driven applied research association. MARA serves producers in Mackenzie County, the largest County in Alberta and Canada's northernmost commercial agriculture region. MARA conducts applied agricultural and environmental research from its Fort Vermilion, Alberta, location. MARA serves Alberta's largest organic producers (over 40%). For more information, visit: <https://mackenzieresearch.ca/>.



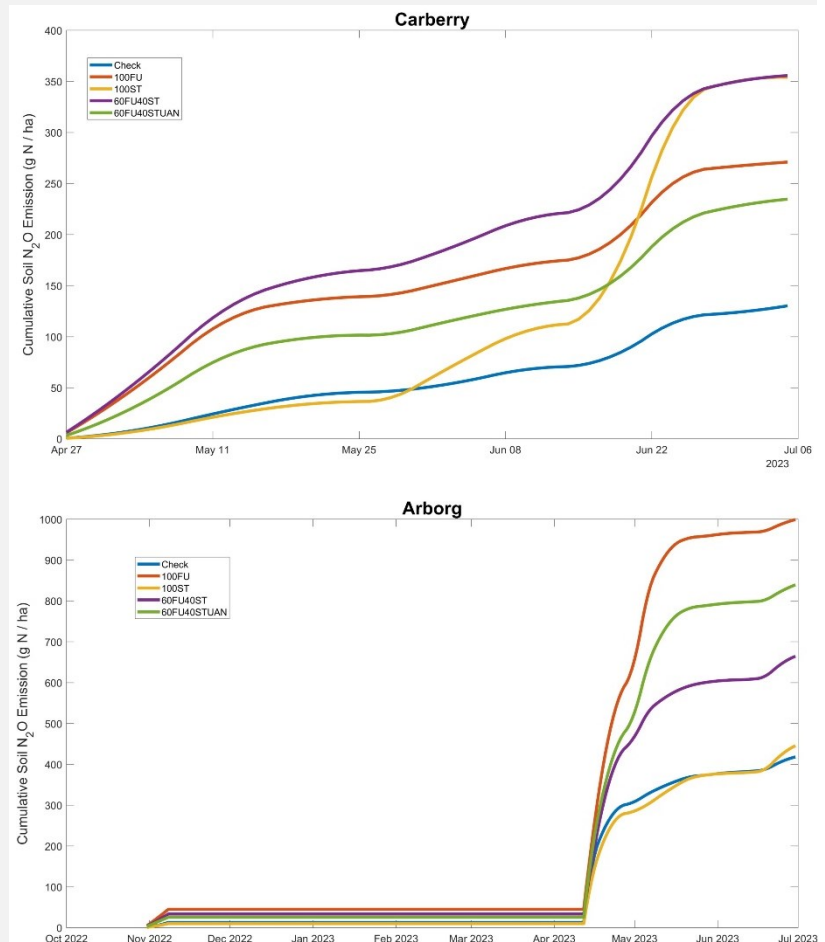
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MCDC and PESAI Investigate Varied Nitrogen Timing and Sources' Impact on Greenhouse Gas (GHG) Emissions

A study on greenhouse gas emissions was conducted at the Manitoba Crop Diversification Centre (MCDC), Carberry and the Prairies East Sustainable Agriculture Initiative (PESAI), in collaboration with Ducks Unlimited and Agriculture and Agri-Food Canada (AAFC), Brandon, during the 2022-23 season. Different nitrogen timing and source treatments were compared in winter wheat to track greenhouse gas (nitrous oxide) emissions during the fall and the spring/summer season. The treatments applied were as follows:

1. Check (Untreated Control)
2. 100% N requirement as untreated urea banded fall (100FU)
3. 100% N requirement urea treated with Agrotain spring broadcast (100ST)
4. 60% N requirement fall band as untreated urea; 40% N requirement spring broadcast urea treated with Agrotain (60FU40ST)
5. 60% N requirement fall band as untreated urea; 40% N requirement spring stream bar as UAN treated with Agrotain (60FU40STUAN)

At the MCDC site, nitrous oxide sampling was started during the spring of 2023, whereas the PESAI site did sampling during the fall of 2022. At PESAI, nitrous oxide emissions were relatively low in all the treatments during fall measurements. There was a clear trend showing 100FU resulted in significantly higher emissions as compared to 100ST. Interestingly, spring application was broadcast instead of banded application in the fall. The split applications had nitrous oxide emissions greater than 100ST but less than 100FU (see picture 2). Overall, the PESAI site had greater emissions than at the MCDC site. Although 100FU treatment also resulted in greater nitrous oxide emissions at this site, however, 60FU40ST produced the highest emissions during the spring/summer measurements (picture 1). 100ST had relatively lower emissions until mid June, however, it did exceed 100FU treatment after this time. Check plots had minimum emissions at both sites.



Contact us: info@mbdiversificationcentres.ca

Using Aerial Imagery to Enhance Small Plot Research

The aerial imagery has become essential in agriculture, providing growers a cost-effective tool for obtaining real-time information about their crops. The Parkland Crop Diversification Foundation (PCDF) collaborated with Shearer Agricultural Imaging and Remote Sensing (SAIRS) to examine the potential for aerial imagery to enhance the value of small-plot research data collected on the ground. Working with images captured in a flight on August 8, 2022, the project focused on the regrowth of fall rye after sheep had grazed it in early June, 2022.

Figure 1 shows the elevation of the ground and the adjacent crop height for both the grazed and ungrazed treatments. The difference between the ground and the crop height was used to calculate the crop volume for two equal rectangles (Figure 2). The plants were much shorter in the grazed portion, and the aerial imagery clearly show that the corresponding rectangle produced a little more than half of the volume of ungrazed crop (342 cubic yards vs. 640 cubic yards). These figures provide an indication of the amount of plant material that could be harvested from each area (for example, as a silage or hay crop). They may guide producers in decisions around harvest timing.

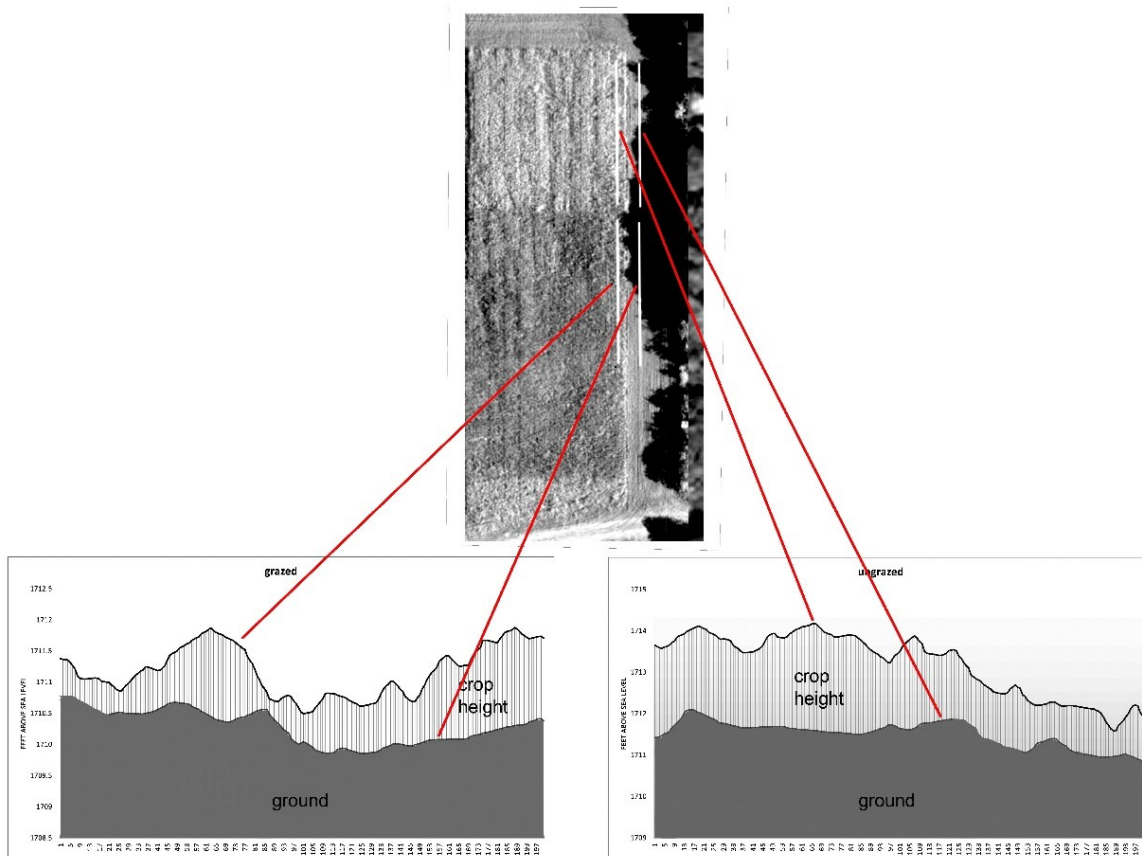


Figure 1: Elevation of the Ground and the Adjacent Crop Height for Grazed and Ungrazed Treatments



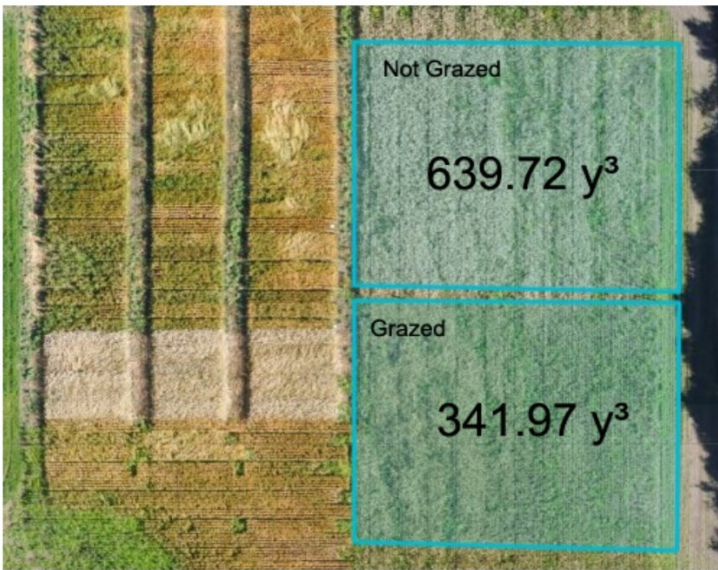


Figure 2: Rectangles for calculating the crop volume

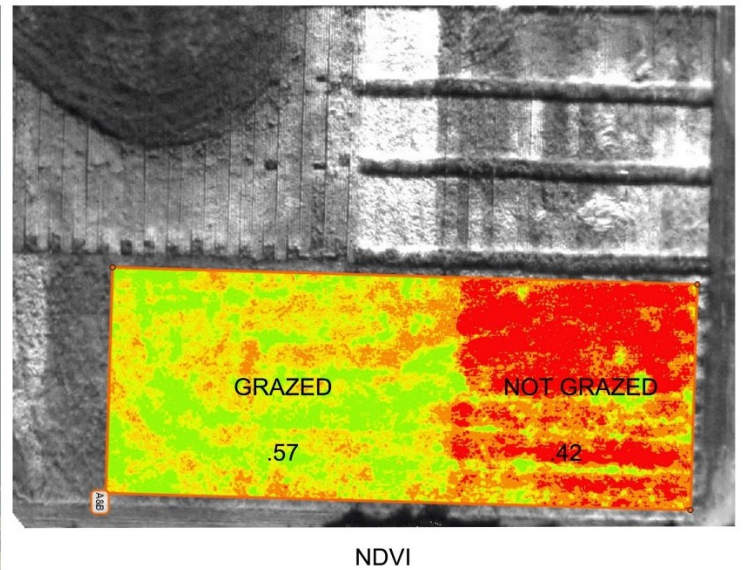


Figure 3: NDVI Values for the both Treatments

Multispectral imagery is used to assess the amount of light absorbed or reflected by plants. The Normalized Difference Vegetation Index (NDVI) values for the two treatments are shown in Figure 3. The higher value (0.57) for the grazed portion indicates greener, lush plant material, whereas the ungrazed value (0.42) indicates that the plants in that portion are beginning to dry down and turn brown. In addition to showing how well a crop has established, the NDVI value can be used to assess the relative maturity of the crop. In this case, the ungrazed rye was in late soft-dough stage, whereas the grazed portion was in early milk stage. Developing a more thorough understanding of target NDVI values (for example, at optimal silage or grain harvest) may help producers monitor crop maturity in a timely, cost-effective manner.

As SAIRS founder, Kevin Shearer, says, aerial imagery without ground-level data is just a pretty picture. But when the two are combined, aerial imagery has the potential to unlock a wealth of information that would otherwise remain invisible to the naked eye.



Sheep Grazing the Fall Rye in the Experimental Unit

