

Where is the Oat Check-Off/Levy Spent? How the Prairie Oat Commissions Work to Ensure Value for Producers' Dollars

Producers know the value of science-based resources to keep up with the ever-changing agricultural industry. POGA and the three Prairie oat commission boards work together to evaluate research proposals, request projects when there is a void, and decide which ones will best serve the oat industry.

Some of the benefits to producers include: increased varietal choice, increased yield, decreased input costs, improved management practices for weeds and diseases, expanded markets, and oat-based food development.

Some projects are short-term (e.g., one year), while others run for decades (with regular reviews and updates), such as the POGA-supported breeding programs. In both cases, results and/or observations made are often carried over to future projects. This is the evolution of research and projects tend to 'build' on each other. If the board sees value in a project's results, they may be renewed and/or re-vamped to further the work accomplished to date.

Readers can access the interim and final reports for the research projects at: <https://poga.ca/research/research-projects/>. This page provides a search function form to filter by topic, keyword or principal investigator. This can help narrow down the results because, as you can see from the following list, there are a lot of projects being done on producers' behalf and this list is only the ones currently in progress or very recently completed. Many historical finalized projects can also be found on the research pages.

The boards are pleased to report that support for this number of projects is being accomplished with the collection of the lowest check-off fee of any crop-based commission in Western Canada. In fact, The Prairie Oat Grower's Association, through the three provincial commissions, have turned \$3.9 M of levy dollars into \$28.1 M in research and marketing projects value to producers.

*Funder support is globally acknowledged at the end of this article.

Acronym Legend: Agriculture- and Agri-Food Canada (AAFC); Brandon Research Centre (BRC); University of Saskatchewan Crop Development Centre (CDC).

RESEARCH TOPIC: INSECT/DISEASES

Selecting Crop Sequences and Developing a Risk Model to Mitigate FHB in Western Canadian Cereal Production. University of Manitoba, Paul Bullock and University of Saskatchewan, Randy Kutcher. Five-year project, ends 2023. *Fusarium head blight (FHB) is a fungal disease affecting cereal crops in Canada that reduces productivity and produces mycotoxins in the grain. This project looks at ways to mitigate the risk of this disease for Western Canadian producers.*

Development of Markers Linked to Oat Crown Rust Resistance to Help Breed Improved Oat Varieties for Canadian Oat Producers. CDC, University of Saskatchewan, Dr. Aaron Beattie. Five-year project, ends 2024. *To maintain a prominent supply of premium quality oats to the current US markets, and develop markets like Mexico, Japan and Latin America, requires developing varieties with a strong disease resistance package (of which crown rust resistance is a critical component). This project works to develop markers for use in oat breeding programs to better prevent crown rust in upcoming varieties.*

Coordinated Monitoring of Field Crop Insect Pests in the Prairie Ecosystem. AAFC Saskatoon, Dr. Meghan Vankosky. Five-year project, ends 2023. *Annual data is collected and compiled into distribution maps, and in some cases, forecast maps for the subsequent season. Weekly updates are posted to: <https://prairiepest.ca>.*

RESEARCH TOPIC: INTERCROPPING/OTHER

Continuing Studies on Intercropping for Increasing Yield and Quality of Grain and Forage Crops, and Improving Soil Quality. AAFC Swift Current, Dr. Myriam Fernandez. Five-year project, ends 2024. *Intercrop species use soil-available nutrients and soil moisture, and at given times inter- and intra-competition are expected. The project will determine if intercrops (with crops or a living mulch) can reduce weeds compared to sole crops and will look at various seeding ratios to evaluate the impact on each crop.*

Develop New Strategies to Efficiently Utilize Oat Grains in High-Production Dairy Cows to Maximize Economic Return and Benefit to Prairie Oat Growers. University of Saskatchewan, Dr. Peiqiang Yu. Seven-year project (extended from 5 years due to covid delays) ends 2023. *The study looks to develop feeding strategies to efficiently utilize oats in high-production lactation dairy cows to*

Continued on page 2...

POGA needs your help to work with **northern communities** to promote and provide oats! Due to oats' health benefits, relatively low cost and shelf-stable nature, the board feels they are a great option for many Canadians that don't have the same access to foods that other regions enjoy. POGA has encountered challenges while searching for a community partner to help bring this to fruition. If you know of a northern community, or an association that represents Canadian northern communities, that may be interested in working with POGA to promote and distribute oats to these areas please let us know! **The POGA board is very interested in working with these communities to enrich diets and support those living in Northern Canada!**

maximize Feed Milk Value (FMV). This research will find the maximum replacement level of barley with oats in order to maximum economic return and benefit to prairie oat growers and support market development of oat grain nationally and internationally.

Intercropping Pea with Canola or Oat: Impact on Nitrogen, Disease and Economics. AAFC Swift Current, Dr. Kui Liu. Three-year project, ends 2024. *Intercropping pea with oat or canola enhances biodiversity and likely increases resource use efficiency. The improved quality and quantity of straw from the intercrops likely affect straw decomposition, soil carbon, Nitrogen dynamics, and soil health. This study will determine the effects of intercropping on soil nitrogen fixation and transfer from pea to canola or oat, as well as water-soluble carbon and N.*

RESEARCH TOPIC: NUTRITION/PRODUCT CREATION

Development of a Nutritionally Enhanced Plant-Based Milk Alternative Beverage from Canadian Oats and Study of its Hypoglycemic Effects. University of Alberta, Dr. Lingyun Chen. Two-year project, ends 2023. *A mere 1% decrease in glucose levels among diabetics can lead to a 21% decrease in death and a 37% decrease in heart attacks. This project aims to develop convenient, diabetic-friendly drinks to help manage diabetes and reduce the cost of medical care in Canada.*

Development of Healthy Food Products by Combining Proteins and Dietary Fibers from Oats and Pulse. University of Alberta, Dr. Lingyun Chen. Two-year project, ends 2024. *A dietary pattern that provides plant protein, dietary fiber and low fat has been shown to decrease the risks of chronic diseases (obesity, cardiovascular disease). This project is testing ways to combine oats and pulses to meet expectations of consumers looking for plant-based alternatives.*

Beyond Beta Glucan, Demonstrating the Health Benefits of Oat Protein. AAFC Winnipeg and University of Manitoba, Dr. Sijo Joseph. Three-year project, ends 2023. *The project looks to provide scientific evidence of the specific health attributes of oat protein in reducing abnormal levels of cholesterol and glucose, and thereby generate preliminary data for an oat-protein health-claim petition.*

Understanding the Impact of Particle Size on Physico-chemical Properties and Nutritional Benefits of Pulse and Oat Flours. University of Saskatchewan, Dr. Yongfeng Ai. Four-year project, ends 2023. *The project is investigating the effects of milling/processing of pulse and cereal flours on their physicochemical functionality in foods; and, will determine the impact of milling on nutritional benefits of pulses and cereals with a focus on diabetic-friendly foods.*

RESEARCH TOPIC: OAT BREEDING

Oat Breeding. AAFC BRC, Dr. Kirby Nilsen (Funded through the Prairie Oat Breeding Consortium (POBC) which includes funding from POGA and many industry partners). Five-year project, ends 2023. *Nilsen, through the POBC, works to develop new oat cultivars suited to production in western Canada. The cultivars developed will have end-use quality identified as important by the industry, and will carry genetic resistance to major diseases, pests, and adverse environmental conditions prevalent in the planned production areas. Risks to oat producers and the oat processing industry are reduced by oat cultivars that perform better agronomically, are resistant to pests, and produce reliably*

healthy products for consumption in Canada and around the world.

Organic Oat Breeding. AAFC BRC, Dr. Kirby Nilsen. Five-year project, ends 2023. *Dr. Nilsen developed oat cultivars with durable resistance, especially to oat rusts, with acceptable milling quality suitable for organically managed production systems in western Canada.*

Breeding Oat Varieties with Improved Agronomic, Quality and Disease Traits for Saskatchewan Oat Producers. CDC, University of Saskatchewan, Dr. Aaron Beattie. Five-year project, ends 2024. *Oats contain beta glucan (soluble fiber), antioxidant compounds, provide a good balance of essential amino acids, and are consumed by many people suffering from celiac disease. Producers are continually searching for increased Return on Investment from their crops and that typically comes through increased yield and product demand. To maintain and increase Saskatchewan's, and Canada's, position as a supplier of premium-quality oats for current and developing markets, and to boost yield potential, varieties with improved agronomic, quality and disease resistance must continually be developed.*

Oat Breeding for Optimized Combinations of Oat Grain Quality, Including Increased Density and Uniformity, with Agronomic Strength, and High Oat-Grain Yield. Oat Advantage, Saskatoon, Jim Dyck. Five-year project, ends 2026. *This breeding program is targeting a 10% higher bushel weight (55lbs or more), low hull content, high protein, harvest durability, and high yielding and valued oat varieties.*

Breeding, Genomics and Agronomy Research to Improve Oat Yield and Quality. AAFC Ottawa, Drs. Weikai Yan and Nick Tinker. Five-year project, ends 2023. *This project aims to improve Canadian oat varieties by: developing new oat cultivars and optimal agronomic practices to achieve high and stable grain yield and quality; enhancing the current oat breeding procedures by investigating and incorporating genomic selection; improving the ability to deploy appropriate rust resistance genes through a survey of Pc gene profiles; and, developing a multi-faceted approach to data- and knowledge-management that benefits world-wide pre-competitive oat research.*

Export Ready Alberta Oats: An Expansion and Tailoring of Oat Advantage's Oat Variety Development Platform to Adapt to Alberta's Climate, and to Meet Alberta's Next Level Oat Industry Needs. Oat Advantage, Saskatoon, Jim Dyck. Recently completed one-year project (see article in this Oat Scoop issue for the final report). *Alberta is the obvious prairie region to efficiently export oats to Asia due to its proximity to the Port of Vancouver. This project targets high percentage plumps and uniform fractions suitable for very efficient end-user processing, high protein, and high beta glucan as required by the Asian markets.*

RESEARCH TOPIC: VARIETY/TRIALS

Alberta Variety Trials. Gateway Research Organization (GRO), Sandeep Nain. On-going project. *Eleven approved milling varieties are tested annually to investigate the impact of the variety and growing conditions on the yield and beta-glucan in both Westlock, AB and Fahler, AB to provide producers annual information regarding how old and new oat varieties perform in comparative trials.*

Regional Variety Trials—A Key in Driving Adoption of New Genetic Technologies. Managed by Alberta Wheat and

Barley Commission. Three-year funding, ends March 2026. *This variety trial information is published annually in the Alberta Seed Guide (<https://www.seed.ab.ca/>) to provide growers with up-to-date information on varieties and yields in one easy-to-use location.*

Saskatchewan Variety Performance Trials. Saskatchewan Agriculture. Yearly and on-going. *The trials assess various oat varieties and their suitability to various Saskatchewan regions. Results are published annually in the Varieties of Grain Crops reports, found on <https://saskseed.ca/seed-guides/>.*

Oat Lodging: Identifying Key Root and Shoots Traits for Improved Standability. CDC, University of Saskatchewan, Dr. Aaron Beattie and National Research Council, Dr. Allan Feurtado. Three-year project, ends 2025. *This project will evaluate root system architecture in oat cultivars which vary in lodging resistance, and will evaluate stem and root lodging in field trials to incorporate roots-system assessment into the breeding selection process.*

Oat Varietal Response to Plant Growth Regulators. Northeast Agriculture Research Foundation (NARF), Brianne McInnes and Indian Head Agricultural Research (IHARF), Chris Holzapfel. *This recently completed project looked at the responses of different oat milling varieties to applications of the registered plant growth regulators (PGRs) Moddus and Manipulator (see the article in this Oat Scoop issue for the final report).*

RESEARCH TOPIC: FERTILITY/CLIMATE/ENVIRONMENT

Collecting the Carbon Data Needed for Climate-Smart Agriculture in Saskatchewan. University of Saskatchewan, Dr. Kate Congreves. Three-year project, ends 2024. *The data collected will be used to determine net ecosystem exchange and the net carbon footprint of the cropping system.*

Economic Value of Diversified Cropping Systems. University of Lethbridge, Dr. Elwin Smith. Recently completed four-year project (see article in March 2023 Oat Scoop issue for the final report). *Short crop rotations provide an environment conducive for an increase in plant disease, weed pressure from herbicide resistance, and insect damage. The lack of diversification in a cropping system can be detrimental to maintaining crop yield and profitability. This project examined the economic return of different cropping systems appropriate in Western Canada.*

4R Management: Right Rate and Placement for Fertilizer in Oats. Northeast Agriculture Research Foundation (NARF), Brianne McInnes. Recently completed one-year project which was renewed for the 2023-24 season (see the article in this Oat Scoop issue for the year-one final report). *The purpose of this demonstration is to highlight the impact of fertilizer placement and rate on oat establishment, seed yields and quality.*

Are Oats Responding to Higher Levels of Macronutrients? East Central Research Foundation (ECRF), Yorkton, Mike Hall. One-year project ends 2023. (See the article in the March 2023 Oat Scoop for the final report.) *The project looked at various fertility rates to see their influence on oat yield, lodging and test weight.*

RESEARCH TOPIC: MARKETING

Expand the Canadian Oat Market: Mexico, Japan, Canada. Directed by POGA. Initial project lengths for each campaign

varied, all end in 2023 and POGA is working to renew and add a new campaign for Latin America. (See the article in this issue of the Oat Scoop for the latest information.) *The marketing projects all use social media and healthy oat recipes to increase oat consumption. Consumers receive education regarding health benefits of oats and using them to control issues such as heart disease, high cholesterol, obesity and diabetes by providing “everyday” oat-based recipes (customized for cultural preference). Results have been positive in all markets.*

Keep It Clean Cereals (KIC). On-going project started by the Canola Council of Canada and expanded with Cereals Canada and POGA. *This program reminds producers of the best practices required for export-quality cereals and canola and aims to help prevent market-access issues, maintaining Canada’s international reputation for reliability and quality. The best management checklist is used to communicate to international and domestic buyers that Canada is taking measures to meet customer expectations.*

OTHER SUPPORT

The commissions also support groups like Ag in the Classroom Saskatchewan, Ag in the Classroom Manitoba, Ag for Life (Alberta), Be Grain Safe, Farm and Foodcare Saskatchewan, the Manitoba Farmer Wellness Program, Alberta on the Plate, and others that directly benefit oat producers in Western Canada.

***FUNDERS ACKNOWLEDGEMENT**

The vast majority of these projects are partially funded by one of the following:

- the Government of Canada under the Canadian Agricultural Partnership, a federal, provincial, territorial initiative, the AgriScience Program;
- the AgriMarketing Program under the Canadian Agricultural Partnership, a federal, provincial, territorial initiative;
- the Canadian Agricultural Partnership; Ag Action Manitoba—Industry Development Program;
- the Agriculture Development Fund (ADF) of Saskatchewan under the Canadian Agricultural Partnership, a federal, provincial, territorial initiative;
- the Agriculture Demonstration of Practices and Technologies (ADOPT) initiative under the Canadian Agricultural Partnership, a federal, provincial, territorial initiative;
- Results Driven Agricultural Research (RDAR);
- Western Grains Research Foundation (WGRF);
- Natural Sciences and Engineering Research Council of Canada (NSERC); and,
- industry partners.

Oat Tour At AAFC Brandon

Dr. Kirby Nilsen, Agriculture- and Agri-Food Canada’s Brandon Research and Development Centre, will host an oat tour open to all oat producers and industry in early August. Check www.poga.ca for updates over the summer or follow @kirbynilsen on Twitter for updates.

Ottawa Outreach 2023

The POGA board continues to represent Prairie oat growers at the federal level through its annual engagement with Members of Parliament, Senators and senior officials in Ottawa. There, POGA presents topics concerning issues of ultimate importance to the industry.

On March 21, 2023, POGA met with 14 Agriculture- and Agri-Food Canada (AAFC) representatives from the:

- Industry Development and Competitiveness Branch;
- Industry Development Division;
- Food Programs and Challenges Division;
- Climate Policy and Partnership Division;
- Economic and Industry Analysis Division; and,
- Crop Sector and Supply Chain Policy Division.

Key discussion points were:

- the Sustainable Ag Strategy (SAS);
- the clearing of pathways to include producers in consultations and ensure farmers' voices are heard and their business concerns are considered before future government programs and plans are instituted;
- updates on the Fertilizer Emissions Reduction Plan;
- upcoming AAFC funding opportunities; and,
- providing producer-based input on plans to establish a consistent, robust Canadian rail transportation system.

POGA participants for the meetings included Jenneth Johanson, (Then) President; Amberly Ralph, Vice-President; Dylan Robinson, Vice-President; Bob Lepischak, Director; Shawna Mathieson, Executive Director; and, Cyndee Holdnick, Marketing Coordinator.



Participants during a POGA Ottawa Outreach meeting, from left to right: Dylan Robinson, POGA Vice-President; Cyndee Holdnick, POGA Marketing Coordinator; Sergio Novelli, Coarse Grains Sector Specialist, Market and Industry Services Branch, Cereals, Grains, Seeds and Inputs, AAFC; Shawna Mathieson, POGA Executive Director; Bob Lepischak, POGA Director; Jenneth Johanson, (Then) POGA President; Brett Norton, Deputy Director, Market and Industry Services Branch, Cereals, Grains, Seeds and Inputs, AAFC; and, Mary Jane Roberts, Deputy Director, Sustainable Development Policy Directorate, Climate Policy and Partnerships Division, AAFC

Oat's Potential for Food and Beverage Product Development

Researching Sustainable Plant-Based Food Options

Dr. Lingyun Chen, University of Alberta's Department of Agricultural Food and Nutritional Science, submitted the first-year report for the two-year project: *Development of healthy food products by combining proteins and dietary fibers from oats and pulse.*

Canadian milling oats have good potential to be used as ingredients to meet the demand for plant-based, protein- and fiber-rich foods that provide health benefits and sustainable food options. Dr. Chen explains, "Oat beta-glucan (β -glucan) is known to lower cholesterol and control blood sugar, and oat protein is more nutritious than most cereal proteins. Combining oat and pulse proteins provides a strategy to address the nutritive issues of plant, protein-based food products. Pulses and oats each lack some essential amino acids but by combining them, they then contain all essential amino acids."

Dr. Chen's lab has investigated the gelling capacity of both oat and pulse proteins; between them, oat produces a stronger gel. This provides an opportunity to develop new fat replacers of plant origin and use of oat ingredient also allows inclusion of dietary fiber in formulations (current

fiber intake in western diets is well below the recommended 25–30g/day). Nevertheless, technology innovation is required to combine functionalities of proteins and fibers from oat and pulse for tailoring the micro-gel rheological¹ properties to simulate solid fat particles. ¹*Rheology is the study of how matter flows.*

Dr. Chen is also looking to simulate the properties of meat using texturized vegetable protein products (TVPs) made from the combination of oat and pulse. This is very valuable for companies making plant-based foods that have the same texture as, for example, a beef burger. Combining pulse ingredients with the excellent gelling capacity of oat protein will produce TVPs with a meat-like, 'chewy' texture.

The long-term objective of Chen's research is to develop high-quality protein and dietary fiber ingredients from oats for healthy food development.

Short-term objectives for this two-year project are to:

1. Screen oat varieties and optimize processing to develop high-quality protein (or a mixture with dietary fiber) ingredients from oat grains and oat processing by-product streams.
2. Develop new techniques to combine oat/pulse protein and dietary fiber ingredients to fabricate:

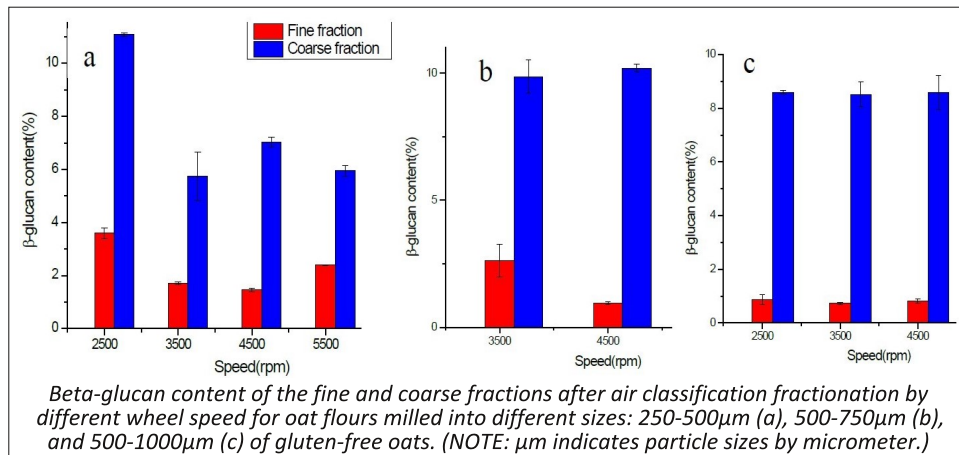
- micro-gels as fat replacers for dairy and dairy substitute products, and
- texturized vegetable protein products (TVP) for meat substitute applications.

The anticipated results to the industry are to:

- recommend oat varieties that will produce high-quality protein and dietary-fiber ingredients for food development;
- develop a new technique to combine functionalities of plant proteins and dietary fibers to develop micro-gel fat-replacers of plant origin;
- optimize formulation and extrusion processing to fabricate TVPs of improved texture from oat/pulse ingredients; and
- develop new food prototypes such as “fat free” or “low fat” yogurt and ice cream, and veggie burgers from oat and pulse ingredients to provide health food options to consumers.

For Objective 1, two commercial oat grain products were milled into flour and then used in the fractionation² screening process. ²*Fractions are divisions of a whole food which are separated for their functional properties (to be applied to food product development).* Compared to wet fractionation, the dry technique is more energy efficient, less expensive, and better preserves the original structure of protein and β -glucan.

Using an air classifier to separate protein/dietary fiber from starch, the team employed various air classification wheel speeds and milling particle sizes and determined the right combination to produce a coarse fraction with the highest β -glucan content.



In addition, results determined that air classification is not as effective at concentrating protein content as it is at concentrating β -glucan. However, the coarse fractions possessed higher protein content (20-23.5% protein) than the fine (10-15% protein).

Chen states, “In the case of the coarse fraction, protein content up to 23.5% and β -glucan content up to 13% can be regarded as a good source of both plant protein and fiber fortification in food products (e.g., baked goods). The fine fraction can be used as a raw material for protein extraction by wet method to obtain protein concentrates (60-75%) for other food applications where more concentrated proteins are required. Also, in this first step, we used two commercial oat grain products, and higher β -glucan and protein-enrichment efficiency was observed for

one of the two grains used in this preliminary round of tests. This suggests that protein and β -glucan enrichment by air classification could vary significantly between varieties.”

The team will take the results obtained to date and progress to the next steps for this project objective. Different varieties will undergo the classification separation process and Chen hopes the results will enable her to recommend varieties that can be used to obtain specific protein and β -glucan levels to produce various food products.

In Objective 2(a), pea protein alone could not form gels, however, self-standing gels were successfully prepared by adding 0.5% oat β -glucan into the 15% pea formulation. With the addition of carrageenan (a thickening or emulsifying agent), a satisfactory gelling capacity was achieved.

Chen will continue to work on the pea-oat gel formulation by adding oat protein and adjusting ratio of pea and oat to the product and then evaluate the performance of the micro-gels as a fat replacer in food formulations.

In Objective 2(b), a low-moisture extrusion process was established to fabricate TVPs from pea and faba bean protein, with reasonably good results. From here, the team will evaluate the texture profile and structure before enriching with oat protein and β -glucan (from the coarse fractions). Chen proposes, “It is expected that the addition of oat protein could improve the TVP texture. In addition, we will be looking into the impact of oat β -glucan on the protein extrusion with hopes of combining protein and dietary fiber to improve the nutritive value of the TVPs.”

Interested readers can access the full interim report at <https://poga.ca/research/research-in-progress/>. Use the search function to find the project (topic: Nutrition/Product Creation; Principal Investigator: Chen).

Dr. Chen also presented at the 2023 January AOGC AGM. There, she shared information on this project, as well as her work on oat milk product development (*Development of a nutritionally enhanced plant-based milk alternative beverage from Canadian oats and study of its hypoglycemic effects*). To read the article introducing this project, go to [https://poga.ca/communication-](https://poga.ca/communication-advocacy/oat-scoop-newsletter/)

[advocacy/oat-scoop-newsletter/](https://poga.ca/communication-advocacy/oat-scoop-newsletter/) and choose the 2021 Summer issue. To view the presentation overheads, go to <https://poga.ca>, choose Provincial Commissions tab at the top and the sub-menu for AOGC: Annual General Meeting and Conference.

This project is funded by Results Driven Agriculture Research (RDAR), Alberta Pulse Growers Commission, and Prairie Oat Growers Association (POGA).

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Save the Dates

for the 2024
Commission AGMs!

For more information and agendas for any of the AGMs, go to <https://poga.ca>, scroll down the home page, and click on the links under Upcoming Events on the right-hand side of the page.

The **Alberta Oat Growers Commission (AOGC) AGM** will be held at The Edmonton Westin on Monday, January 22, 2024.

The **Saskatchewan Oat Development Commission (SaskOats) AGM** will be held at Prairieland Park, Saskatoon, on Wednesday, January 10, 2024 (to be confirmed).

The **Manitoba Oat Growers Association (MOGA) AGM** will be held at Victoria Inn and Conference Centre, Winnipeg, during CropConnect on Wednesday, February 14, 2024.

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MOGA & SaskOats Director Nominations OPEN!

Are you, as a registered producer*, interested in becoming a director or do you know someone who is?

Here are just a few of the benefits:

- Identify and direct research for the benefit of the entire industry.
 - Increase industry knowledge.
- Opportunity to meet influential millers, buyers and government officials provincially, nationally and internationally.
- Information sharing with other growers.
 - Professional development.
 - Reimbursement for all travel and honorarium for time spent on association projects and committees.

Manitoba Oat Growers Association (MOGA)

*A registered producer means any producer who has had a Manitoba Oat Growers Association levy deducted since August 1, 2021.

Deadline for nominations is 12 noon CST, October 10, 2023.

For nomination forms and further information contact:
MOGA Administration Office,
PO Box 20106, Regina, SK S4P 4J7
Telephone (306) 530-8545
Fax (866)286-1681
Email smathieson@poga.ca

Saskatchewan Oat Development Commission (SaskOats)

*A registered producer means any producer who has had a SaskOats service fee deducted since August 1, 2021.

Deadline for nominations is 12 noon CST, October 17, 2023.

For nomination forms and further information contact:
SaskOats Administration Office,
PO Box 20106, Regina, SK S4P 4J7
Telephone (306) 530-8545
Fax (866)286-1681
Email smathieson@poga.ca

Nutrients for Oats (What, Where, When and How Much)

Final Project Report

Results for the project: *4R management: Right rate and placement for fertilizer in oats* are in. Brianne McInnes, Operations Manager at Northeast Agriculture Research Foundation (NARF) in Melfort, SK, led the trial, and two research sites collaborated on the project: NARF and Western Applied Research Corporation (WARC) in Scott, SK.

The term '4R' describes an approach to nutrient management for crops: the right fertilizer source applied at the right time, rate and place. The project objective was to highlight the impact of fertilizer placement and rate on oat establishment, seed yields and quality.

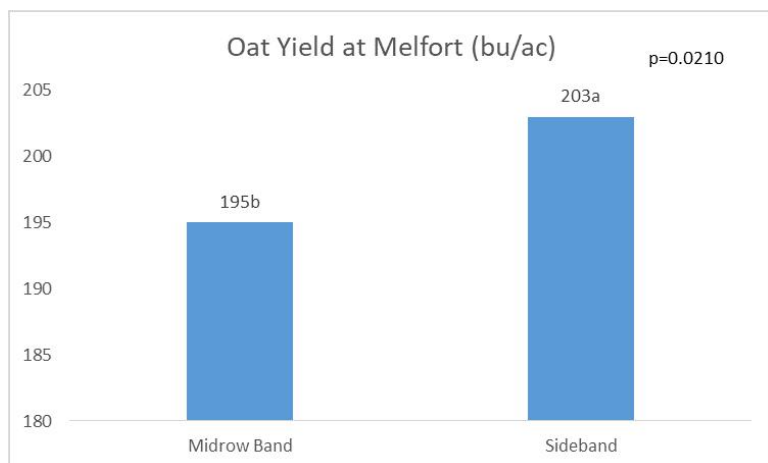
Readers can review the 2022 Summer Oat Scoop article, which provided the rationale behind the project. Summary results are presented here. For details and data, the final report is posted to <https://poga.ca/research/completed-research/>; use the keyword search '4R' to filter the report.

The 2022 growing season experienced above-average temperatures at both sites. Precipitation at Melfort was above-average and at Scott was below-average.

Report Conclusions:

There were many significant treatment effects of nitrogen placement, nitrogen rate, and phosphorus placement on oat plant density, days to maturity, and grain yield at both locations; however, there were no significant treatment effects to oat test weights and thousand kernel weights.

When nitrogen placement was significant, side-banded nitrogen decreased plant density and increased days to maturity at Scott. At Melfort, side-band nitrogen increased grain yield as compared to mid-row-banded nitrogen. (See table below.)



Nitrogen rate was only significant at Scott: increasing rates from 75 to 125 kg/ha decreased plant density and increased the days to maturity. Additionally, when nitrogen rate was increased in the side-band, plant densities were reduced as compared to the mid-row placement.

When treatment effects of phosphorus were significant, days to maturity increased when phosphorus was seed-placed in combination with high rates (125 kg/ha) of applied nitrogen as compared to when phosphorus was side-banded at Melfort. Additionally, phosphorus application significantly increased oat yield at Scott, but there was no significant effect of phosphorus placement.

Due to dry and hot conditions at Scott and high residual soil nitrogen at Melfort throughout this demonstration, results may

vary from that of higher moisture and cooler temperature conditions as well as lower residual soil nitrogen at each of the participating locations.

Preliminary results of the trial were presented by David MacTaggart (NARF) at the January 2023 SaskOats AGM in Saskatoon. In addition to sharing results, MacTaggart listed some answers to this possible producer question: "Why should I care about fertilizer rates and placement with my oats?" Here is NARF's list of reasons: Input costs; time management at seeding; weed competition; need to be sustainable; maintain oats in rotation; early vigour to access moisture; grain quality; and uniform stage at harvest.

McInnes explains, "Another year of this demonstration would be beneficial to further demonstrate the response of oats to nitrogen placement, nitrogen rate and phosphorus placement under different soil and climatic conditions in Saskatchewan."

SaskOats is pleased to announce that Agriculture Demonstration of Practices and Technologies (ADOPT) has approved the trial for the 2023 growing season (McInnes will lead the trial again). Sites will include Northeast Agriculture Research Foundation in Melfort, SK, and Western Applied Research Corporation in Scott, SK.

This project was supported through the Saskatchewan Oat Development Commission (SaskOats) and funded by the Agriculture Demonstration of Practices and Technologies (ADOPT) initiative under the Canadian Agricultural Partnership, a federal, provincial, territorial initiative, and Fertilizer Canada.

Interested in Which Pests Are Prevalent this Year?

Sign up for the weekly report produced by the Prairie Pest Monitoring Network (partially funded by POGA): <https://prairiepest.ca/>

The Oat Bar is Open!

As time goes on, beer crafters are using oats more frequently in their brews, but, it presents challenges! Two Brew Masters explained why they use oats and what they must do to accommodate them at the 2023 February MOGA AGM (Chris Marsh, Lake of the Woods Brewing Company) and 2023 January AOGC AGM (Ryan Pearson, Battle Creek Brewery). To read all about it, go to: <https://poga.ca/>, Provincial Commissions tab at the top, MOGA or AOGC commission drop-down, and choose 'Annual General Meeting and Conference'.

Producers' On-line Calculator for Recommended Fertilizer Application Rates

Survey Project Complete

In the November 2021 Oat Scoop, POGA introduced the project: *Revising the crop nutrient uptake and removal guidelines for Western Canada*, led by Drs. Fran Walley and Rich Farrell, University of Saskatchewan, Department of Soil Science.

Producers continually work toward optimal soil fertility in order to achieve the best yields and lowest crop-production inputs while also maintaining the soil's on-going fertility/condition. Recent escalating input costs make it even more financially prudent to use a multi-method approach to determine annual fertilizer application amounts.

Soil tests have been available and used by some, and Walley's study reinforces the importance of this tool. However, each crop has differing requirements to address nutrient uptake (nutrient required to grow the entire plant, some of which remains in the field in the 'biomass residue') and removal (nutrient in the grain itself and removed from the field). New varieties, each with the potential for differing requirements, are being developed all the time and the old guidelines may no longer apply.

From 2020 to 2022, Walley, Farrell and collaborators collected >2200 grain and biomass samples from commercial fields and analyzed them for macronutrient (N, P, K, S) and (not previously addressed in the guidelines) micronutrient (Cu, B, Zn) uptake.

They also reviewed and included data from the most robust existing literature and research relevant to Western Canada. The results from this source provided the opportunity to compare data obtained from research plots to the project data from commercial field collection—two different growing environments.

Weather and other conditions can also affect nutrient requirements from year to year. Walley states, "Importantly, existing ranges for nutrient removal do not capture the full extent of the observed variability in nutrient uptake and removal, underscoring the importance of using any uptake and removal estimates together with regular soil testing for informing fertilizer management decisions."

Other key messages found in Walley's final project report are listed below.

- *Crops are not able to extract all the total nutrient available in the soil (i.e., soil nutrients plus added fertilizer); to maintain soil nutrient levels, estimates of available nutrient(s) should be greater than estimates of nutrient removal.*
- *For some crops and nutrient combinations, lower grain nutrient concentrations were observed than previously estimated; this suggests that management practices and*

modern varieties have resulted in improved nutrient use efficiency on a per bushel basis, although higher yields remove more nutrient on a per acre basis.

- *Although the survey data indicates lower Sulphur (S) removal by canola (and flax seed) than previous estimates, given the importance of S in canola production, and the variance in the estimated removal, it is prudent to opt for a higher estimate of S removal than suggested by the survey data to avoid potential S deficiencies. Consequently, we recommend using the 75th percentile* values (rather than average values) for calculating nutrient uptake and removal. (*The 75th percentile represents that point at which 75% of the survey values were below the coefficient value and 25% of the values were above the coefficient value.)*
- *An on-line calculator has been developed and is available at <https://prairienutrientcalculator.info/>. The calculator uses the 75th percentile of the survey data as the nutrient coefficient, with the goal of limiting the risk of underestimating nutrient removal.*

Interested readers can access the full project report at <https://poga.ca/research/research-projects/> (use the filter for Principal Investigator: Walley).

The project team has been disseminating project information at various workshops, meetings, conferences and in various publications.

The project was funded by Western Grains Research Foundation (WGRF); Alberta Wheat Commission; Prairie Oat Growers Association (POGA); Saskatchewan Canola Development Commission; Saskatchewan Flax Development Commission; and, Saskatchewan Wheat Development Commission.

Your AOGC Board at Work

On March 30, Dylan Robinson, AOGC Chair, Jason Weise, AOGC Director and Shawna Mathieson, Executive Director, participated in the Canadian Roundtable for Sustainable Crops online meeting: *Code 2.0 - Seed Development/Crop Protection and Health and Wellness*, discussing the prior and updated Code of Practice and what is in farmers' best interests.

Producer Consent Form

POGA has received requests from international oat buyers to source oats directly from producers. If you are an oat producer in Alberta, Manitoba or Saskatchewan and are interested in being contacted by these companies for potential direct oat sales, head over to the main page at <https://poga.ca/>, click on and fill out the Producer Consent Form. Your contact info will be included in a list provided to companies inquiring about direct-from-producer sales.

Breeding Oats for Alberta’s Climate and Conditions*

Oat Advantage Project—Export-Ready Alberta Oats

*Author: Jim Dyck

Alberta represents a geography and climate unique for the prairies. Jim Dyck, Owner and Breeder at Oat Advantage began work in Alberta 2021 when SeCan recognized the need for an Alberta-based oat breeding program and invited Oat Advantage to enter breeding plots into their trials at Westlock with the Gateway Research Organization (GRO).

In 2021, POGA/AOGC initiated conversations with Results Driven Agricultural Research (RDAR) regarding the need for oat breeding in Alberta. Following that, Oat Advantage was asked to present a short-term, oat-breeding plan to RDAR to test the workings of a continuing oat project in Alberta. The project was funded and the season proved successful for good growth and data collection. The work at Westlock was conducted with the excellent services of GRO. Funding for the 2022 Oat Advantage project came from RDAR, SeCan, POGA (through its general support of Oat Advantage breeding), the Alberta Oat Grower’s Commission (AOGC), and from Oat Advantage itself. The Export-Ready Alberta Oat project goals are to improve beta glucan and protein levels, in combination with high oat kernel uniformity, kernel density, and high field yield.



Oat Advantage Westlock plots September, 2022

The demand for Canadian oats in the Pacific region/Asian countries is expected to increase in the foreseeable future. Alberta’s proximity to the port of Vancouver, versus other major Canadian oat-growing regions, makes it an obvious choice as an important oat export supplier. However, Alberta oat quality must meet market demands in order to be the Pacific’s choice for oat grain.

Jim Dyck explains, “Oat Advantage has been assembling oat genetics, oat selection techniques, and a solid plant breeding platform since 2008. Our commercialized oat varieties have now demonstrated the success of our motivating principles and we are ready to formulate an Alberta-focused strategy to meet emerging oat export opportunities there.”

Dyck continues, “We had many in-house projects available with the oat genetics suited for the RDAR project. We had been working on high beta-glucan and protein varieties and they were at just the right stage for selection for this 2022 Alberta project. These project segments will see an

increased focus in the 2023 Alberta and Oat Advantage regional plots.” Also, key to the project are the Oat Advantage Gravity Table (GT) processed and selected oat lines from the previous three years of work. These GT oat lines have the potential to move us along toward our goal, shared with POGA, of a 55lb/bushel oat.”

One measure of what progress looks like is a 17% gain in ‘off-the-combine’ 1000 kernel weight (TKW) for GT selected lines over their non-selected pairs at Westlock. The chart below shows specific GT pair TKW gains of 2% to 10%. Westlock (WST) was the main site for the project; Codette Saskatchewan (CDT) was the back-up site.

WST 1000 kernel wt			CDT 1000 kernel wt		
%A/B gain series 2+3	GT pair	A/B entry #	%A/B gain series 2+3	GT pair	A/B entry #
110.6	Pair 7	3/3	110.6	Pair 7	3/3
108.6	Pair 4	1/2	109.5	Pair 15	1/1
108.3	Pair 1	2/3	107.3	Pair 4	1/2
108.2	Pair 8	3/3	107.1	Pair 5	2/2
107.1	Pair 23	1/1	105.5	Pair 1	2/3
102.3	Pair 5	2/2	104.8	Pair 19	1/1
102.3	Pair 15	1/1	103.8	Pair 21	2/2
102.3	Pair 19	1/1	103.4	Pair 6	2/2
98.9	Pair 6	2/2	102.3	Pair 12	1/1
97.8	Pair 22	2/2	100.8	Pair 8	3/3
97.7	Pair 12	1/1	100.0	Pair 9	3/3
97.6	Pair 14	1/1	97.6	Pair 23	1/1
96.8	Pair 9	3/3	96.7	Pair 10	2/2
91.0	Pair 21	2/2	93.0	Pair 22	2/2
90.9	Pair 20	1/1	90.5	Pair 14	1/1
86.3	Pair 10	2/2	86.0	Pair 20	1/1

Oat Kernel Uniformity (OKU) for Oat Advantage GT lines reached to 84%. Oat Advantage reference varieties saw OKU values of 76% to 87% at Westlock. Competitor reference varieties had OKU values of 32% to 57%. Dyck states, “Higher OKU percentage equates to healthier plants, more uniform emergence, cleaner combining and on-farm saved seed, and less dust. It also reduces processing time for millers by eliminating the need to clean the grain and separate by size. Overall, high OKU percentages saves energy and reduces an oat variety’s carbon footprint.”

Oat Advantage is achieving some positive results in characteristic combinations. High grain yields were seen for the top 10% to 20% of the oat lines tested at WST and CDT respectively. They performed with and above top-reference varieties. Beta glucan and protein are already embedded in the genetics of the smaller project segments so it is expected that the final varieties will be above average in these traits. Oat Advantage techniques with OKU and GT selection continue to prove themselves as tools to raise the quality of oats. All the Oat Advantage project segments will experience the Alberta conditions, plus the Oat Advantage GT and OKU selection techniques.

Jim ends his thoughts with, “Alberta producers will see the benefits of the Export-Ready Alberta Oats project, hopefully quite quickly. High-progress lines from the RDAR work will be entered into the Western Cooperative Oat Registration Trials in 2024 which could put them on the market as soon as 2027.”

This project was funded by Alberta Oat Growers Commission (AOGC) and Results Driven Agriculture Research (RDAR).

The Prairie Oat Growers Association Elects the First Alberta-Based President

The Board of Directors of the Prairie Oat Growers Association (POGA) is excited to announce that Brad Boettger has been elected President—the first POGA President from Alberta.

Brad Boettger is a fourth-generation producer who farms alongside his wife and four daughters and his father and brother in the Tofield/Ryley area. They produce a variety of crops including oats, barley, wheat, fall rye, peas, faba beans, and canola.

“I am pleased to accept the President position for The Prairie Oat Growers Association,” Boettger stated. “I want to sincerely thank our outgoing President, Jenneth Johanson, for her tireless leadership and dedication to representing oat growers across Western Canada. While President, Jenneth sat on nearly every committee, attended trade missions in China, and juggled too many last-minute requests to list while representing oat growers at meetings across Canada and all of North America. I have some very large shoes to fill!”

Johanson replied, “It has been a pleasure to lead the POGA Board for the past four years. I would like to thank Brad for accepting the President position. Brad has been part of the Executive team for the past six years as the Chairman of the Alberta Oat Growers Commission and he is well positioned to lead the organization. I am certain that POGA is in good hands under Brad’s leadership and I look forward to continue working with him in his new leadership role.”



*Brad Boettger and family on their Alberta farm.
From left to right and front to back: Claire, Lisa,
Leah, Abby, Brad, and Ava Boettger.*

Your POGA Board at Work

(Then) POGA President Jenneth Johanson represented oat growers at the Food and Agriculture Association of the United Nations (FAO) release of the Status of Women in Agrifood Systems report on April 18 in Ottawa.

Some highlights revealed in the report are:

- women participating in rural agriculture is of critical importance;
- access to finance, infrastructure, cellphones, etc. has improved, but gaps remain in legal rights, wages, access to land, productivity (worldwide female farmer productivity is 30% lower than male farmers due to the large amount of laws, policies, and customs that put them at a significant disadvantage) and innovation; and,
- closing the gender gap improves economics and social impact.

Some Calls to Action include:

- invest in high-quality research and data focusing on gender, age, etc.; and,
- scaling up intentional intervention pilot projects so that many more women can participate.

Johanson shares, “While the situation has been moving ahead for Canadian women in agriculture, POGA is pleased that Canada is actively engaged in supporting farming women across the globe. Empowering women in agriculture (and all industries) improves the lives of all. For example, it was stated at this event that the Global GDP has increased by \$1 trillion by improving gender equality—a huge societal win.”

To access the report, go to: <https://www.fao.org/in-action/kore/publications/publications-details/en/c/1637330/>. To visit the FOA’s interactive page on this topic, go to: <https://www.fao.org/interactive/women-in-agrifood-systems/en/>.

Breaching Breeding Barriers: Toward Oats with Higher Yields and Earlier Harvests

A New Project Led by Dr. Jaswinder Singh

The Oat Scoop published several articles on Dr. Singh's CRISPR project (<https://poga.ca/communication-advocacy/oat-scoop-newsletter/> - the introduction is in the 2019 June issue and the final report article is in the 2022 June issue). Those articles provide a good foundational understanding of the complex CRISPR technology.

Dr. Singh, McGill Department of Plant Science, will lead a new, three-year project: *Dissecting the association of flowering time and yield in oat*. Project collaborators (expertise in parentheses) include: Drs. Nick Tinker (bioinformatics and oat sequencing), Wubishet Bekele (oat genomic selection), Kirby Nilsen (oat breeder) and Jean-Sébastien Parent (epigenetics)—all are from Agriculture and Agri-Food Canada (AAFC).

During previous projects, Singh's research team and his AAFC colleagues (Tinker and Bekele), in collaboration with the international oat consortium, completed reference-quality genome sequences of four important oat varieties, including the genetic-transformation-amenable variety Park. DNA affects traits and characteristics of all living organisms; in oats, specific genomes in each variety affect things such as fungal resistance, height, beta-glucan and oil content, and drought resistance.

Dr. Singh explains, "Flowering time (or days to heading) is a key trait that affects adaptation to cropping cycles and growing seasons. Therefore, the timing of flowering may affect other characteristics, including yield and the avoidance of biotic and abiotic stress. We have identified a genome region that has very strong associations with flowering time and other adaptation-related traits. However, a large chromosome rearrangement in this region causes a breeding barrier which may have limited past efforts to improve these traits. Though it seems an insurmountable problem, gene editing may ultimately provide the most effective tool to overcome this issue."

This work could zero in on problems faced by Prairie oat growers. Oats grow well on the Canadian Prairies, but even varieties that flower and mature early can be susceptible to lower yield and disease risk (and the additional problems caused during harvests without the use of chemical dry-down treatment).

Singh states, "If CRISPR modifications can produce reliable DNA editing that can predict the influence on all traits, then in the future oat breeders could engineer superior germplasm by modifying a single specific gene that would help producers harness the crop's biological potential."

It should be noted though, this project will not create a CRISPR oat for cultivation. What it will do is put oat breeders closer to being able to developing a CRISPR oat if there is a desire by both producers and oat buyers for use of this technology in oats.

The project objectives are:

1. Identification of regulatory sequences in the identified gene/chromosome region, and refining of gene editing in oat.
2. Development of specific CRISPR constructs.
3. Transformation of the said constructs into oat for developing mutant lines.

4. Genotypic and phenotypic screening of oat mutant lines.

POGA will update Oat Scoop readers as interim and final reports are received. At that time, we will get into the nuts and bolts of the work being done.

This project is funded by Prairie Oat Growers Association (POGA), Western Grains Research Foundation (WGRF) and Results Driven Agriculture Research.

Project: 'Oat Varietal Response to Plant Growth Regulators' (PGRs)

Final Report

Brianne McInnes, Operations Manager at Northeast Agriculture Research Foundation (NARF) in Melfort, SK, and Chris Holzapfel, Research Manager at Indian Head Agricultural Research Foundation (IHARF) in Indian Head, SK, are the principal investigators of this trial.

The objective of this project was to demonstrate the response of different oat milling varieties to applications of the registered plant growth regulators Moddus® (trinexepac-ethyl) and Manipulator® (chlormequat chloride).

Both of these PGR products have been registered for use in Canada as of the 2021 growing season. The active ingredients are different in each, but both reduce stem internode length by inhibiting production of gibberellin (the hormone responsible for promoting plant height).

Previous research investigating the effect the products have on cereal crops (wheat, barley and oats) found that oats were the least likely to demonstrate a height reduction with PGR applications. Other external research on oat seeding rate, and nitrogen rates and PGR application (one or both) found no effect on yield but did record slightly greater height reductions occurring in oats when trinexepac-ethyl was applied.

Plant height is a problem for oat growers because when providing enhanced fertility to ensure good yield, oats also respond by growing taller. This increases the "trash" or residue in the field and heightens the risk of lodging which may lead to yield losses, decreased grain quality and difficulties during harvest.

In the trial plan, McInnes explained: "It is suspected that different varieties may respond differently to PGR applications as a result of distinct genetics for yield, lodging, and height characteristics. Under enhanced fertility, varieties with lower lodging resistance and/or greater height are more prone to lodge, and thus may demonstrate a more significant response to PGR application."

The trial locations were chosen to demonstrate responses across varying environmental conditions: Indian Head (southern) and Melfort (northern), while sharing the same Saskatchewan black soil zones. During the 2022 growing season, both sites experienced slightly above-average temperatures and above-average precipitation.

Each of four oat varieties (chosen because of their differing height and lodging characteristics) underwent various treatments (no PGR, Moddus® or Manipulator®).

Continued on page 12...

...Continued from page 11 Oat Varietal Response to PGRs

Report Conclusions:

At both sites in this demonstration there were many significant treatment effects of oat variety and PGR applications on plant density (PPMS), height, days to maturity (DTM), lodging, grain yield, test weight (TW), and thousand kernel weight (TKW).

When there were statistically significant differences between varieties at both sites, taller varieties (CDC Arborg and CDC Dancer) had greater height, varieties with less lodging resistance (CDC Dancer & Summit) had a greater degree of lodging, and varieties with greater varietal TW (Summit and CDC Dancer) demonstrated higher TW. Therefore, varieties at both sites responded similar to what would be expected according to their characteristics in the SK seed guide.

DTM was not always consistent across sites for varieties, but Summit demonstrated the greatest DTM at both sites followed by CDC Arborg (only at Indian Head).

Statistically significant varietal differences in grain yield were also not always consistent between sites; however, at both sites numerical differences in grain yield were consistent, with CDC Arborg having the greatest yields followed by CS Camden, Summit, and CDC Dancer.

When PGR was significant, the application of a PGR reduced height, lodging, TW, and TKW, and increased DTM and yield as compared to the control. When there was significant difference between products there was an opposing site result for height where Moddus reduced height at Melfort as compared to Manipulator, but Manipulator reduced height as compared to Moddus at Indian Head.

Grain yield was only affected by PGR applications at Indian Head. In this study, applying Moddus or Manipulator significantly increased yields from the control; however, Manipulator significantly increased yield as compared to Moddus.

At Melfort, Moddus was the only product that significantly reduced TW as compared to the control.

Furthermore, the only significant two-way interactions for variety and PGR occurred for height (Melfort and Indian Head) and lodging (Melfort only). This indicated that varieties did respond differently to PGR applications. For height, the results between sites were not consistent. At Melfort, shorter varieties (CS Camden and Summit) had comparable height reductions regardless of PGR product; however, the taller varieties (CDC Arborg and CDC Dancer) demonstrated greater height reductions with Moddus. At Indian Head, varieties with greater lodging resistance (CS Camden and CDC Arborg) had no significant height reductions in response to PGR applications; however, varieties with less lodging resistance (CDC Dancer and Summit) only had significant height reductions with an application of Manipulator. At Indian Head, taller varieties were always taller than the shorter varieties regardless of a PGR application; however, at Melfort taller varieties were always taller, but only when compared to shorter varieties under the same PGR application. For example, CDC Arborg was greater in height than Summit and CS Camden when all were sprayed with Moddus, but CDC Arborg with Moddus was comparable in height to shorter varieties when compared to their no-PGR alternatives.

Lastly, for the two-way lodging interaction, varieties less prone to lodging (CS Camden and CDC Arborg) demonstrated no significant difference in lodging when a PGR was applied; however, varieties more prone to lodging (CDC Dancer and Summit) demonstrated significant reductions in lodging when a PGR was applied.

Overall, there were many significant differences amongst the data collected that suggest there was a difference in oat varietal response to PGRs for crop height and lodging, and that PGR applications may result in height, TW, TKW, and lodging reductions with the potential to increase DTM and grain yield.

To read the entire final report, go to <https://poga.ca/research/completed-research/>; use the keyword search 'Plant Growth Regulators' to filter the report.

This project was funded by the Agriculture Demonstration of Practices and Technologies (ADOPT) initiative under the Canadian Agricultural Partnership, a federal, provincial, territorial initiative.

Your POGA Board at Work

In March, Elwood White, POGA/SaskOats director, and Shawna Mathieson, Executive Director, met with MP Michael Kram to talk about Bill C-282. If passed, the Bill would not allow Minister or trade negotiators to have serious talks about the supply-managed system in Canada (e.g., increasing the tariff rate quota or reducing the tariff when they are imported in excess of the tariff rate quota). POGA warned that, if this bill is passed, it will tie the hands of Canada's trade negotiating team and limit Canada's ability to move international trade agreements forward. POGA would encourage all growers to reach out to their MPs and ask them to vote against this bill, not just for agriculture but for the implications of many Canadian exports (and imports).



Shawna Mathieson, POGA/SaskOats Executive Director, Michael Kram, MP for Regina-Wascana, and Elwood White, SaskOats director.

In February and March, Dylan Robinson, POGA director and AOGC Chair, and Shawna Mathieson, Executive Director, participated in two separate Federal Government's *Producer Outreach on the Sustainable Agriculture Strategy Consultations*. They brought forward suggestions to help producers fund technology that enables more sustainable work, emphasized what producers are already doing and noted that sustainability is not solely related to the environment—economic impacts to industry must also be considered, because “you cannot be green if you are in the red.”

Alberta Oat Variety Trials

The Best Oat Varieties for Alberta

Sandeep Nain, General Manager of Alberta’s Gateway Research Organization (GRO), has submitted the annual report for the project: *Increase the Oat Acres in Alberta by Finding a High-Yielding Oat Variety that Maximizes Producer Income and Meets the Demands of the Millers.*

The table below summarizes the top three varieties for β -glucan at both locations over the last seven years. A second table (available in the full report) summarizes overall varietal yield for all varieties and all years, using the popular Morgan variety as a comparative base-line. Readers can access Nain’s full report at <https://poga.ca/research/research-projects/> to see all data tables detailing comparisons between the two sites, varieties tested throughout the project lifespan for all other measured results (e.g.: height, lodging, test weight, etc.) and varietal beta (β)-glucan content. (*At the research results page, filter for Principal Investigator: Gateway.*)

Crop Year	Top 3 Varieties for Beta Glucan at Westlock		
2022	CDC Endure	OT3112	AAC Douglas
2021	OT3112	CDC Endure	CDC Skye
2020	OT3112	CDC Endure	CDC Skye
2019	CDC Endure	CDC Arborg	AC Morgan
2018	CDC Endure	CDC Arborg	Triactor
2017	CS Camden	Akina	CDC Ruffian
2016	CDC Seabiscuit	CDC Ruffian	CDC Orin
	Top 3 Varieties for Beta Glucan at Peace Region		
2022	CDC Endure	OT6024	CDC Arborg
2021	OT3112	CDC Endure	CDC Skye
2020	CDC Skye	OT3112	CDC Endure
2019	CDC Seabiscuit	CDC Arborg	CS Camden
2018	Triactor	AC Morgan	CDC Endure
2017	CDC Ruffian	CS Camden	CDC Orin
2016	CDC Ruffian	AC Morgan	CDC Seabiscuit

Morgan continues to be the most popular oat variety in Alberta. However, this variety has lower-than-desired β -glucan content to satisfy many millers’ criteria. Nain explains, “The two most common indicators of grain quality are test weight and β -glucan. While Morgan produces higher test weight in Alberta growing conditions, it typically does not meet millers’ criteria of a minimum 4% β -glucan content. Because of this, millers will source Alberta oats only after they have exhausted oats from other regions.”

Morgan is also not resistant to crown rust, which has increasingly been advancing west into Alberta. Nain’s variety trials continuously test various high-performing varieties and rate them for production in Alberta conditions. Morgan is used as the comparative variety and, each trial year, newly developed varieties are added and those with lower combined yield plus β -glucan content performance are eliminated.

Nain states, “Location continues to significantly affect yield and β -glucan levels. Environmental conditions at the two trial locations (GRO, Westlock and Fahler, in the Peace Region) affect a variety’s yield capacity to a higher degree than they affect its β -glucan levels.”

The 2022 growing season was somewhat dry but in general, crops received adequate rainfall. Nain summarizes some of the most significant results for 2022: “The average site yield at Westlock was 193 bu/ac compared to 252 bu/ac in the Peace region. The Westlock site had some lodging issues while at the Peace site, no lodging was observed. Also, the plant height was surprisingly short in the Peace region compared to the Westlock site. There was no noticeable difference in the test weight at both locations. The quality of grain was a little bit lower at the Peace region site with a higher average hull percentage (21.16%) compared to the Westlock site (19.78%). The average thousand kernel weight was lower at the Westlock site (35.49 g) compared to the Peace region site (37.97 g).”

Eventually, it’s likely that Alberta producers will need to choose viable varieties to replace the popular Morgan. This project, because of its on-going varietal comparisons at two regional locations, provides the information Alberta oat growers require to trial some of these varieties at their particular farm locations.

Producers may want to access some of the previous GRO trial articles, as they provide results during each year’s specific growing conditions. The most recent articles can be found in the June 2022, March 2021, and March 2020 issues. Go to <https://poga.ca/communication-advocacy/oat-scoop-newsletter/> to revisit this valuable information.

This project was supported by Prairie Oat Growers Association (POGA) and Grain Millers Canada.

Your Executive Director at Work

In April, Shawna Mathieson presented at the North American Millers Association Conference on projects and programs POGA is funding, current farming challenges, Return on Investment for oats vs. other competing crops, and expected oat acres for the upcoming year.



Many of the companies that work with oat growers were in attendance, including Grain Millers Canada, PepsiCo Quaker and Richardson International.

On March 23, Shawna Mathieson attended the Learn to Lead reception in Saskatoon, sponsored in part by SaskOats, to meet with delegates who might be interested in sitting on and working with ag commission boards.

POGA Marketing Campaigns Exceed All Targets Mexico, Japan and Canada Projects

At the close of the two-year project term in March 2023, all three markets greatly exceeded their target goals. POGA will work to continue to expand the online community of oat consumers in the coming years.

(Definitions of terms you will see throughout this article:

“**Engagement**” refers to users who have seen the campaign and taken action across the social media channels: e.g., liked, commented, viewed the website, watched the video, etc.

“**Reach**” refers to the number of people who have seen a piece of social media relating the campaign. “**KPI**”—Key Performance Indicator, or engagement targets set at the project start.)



As of 2023 March, **Mexico–Avena Canadiense** continues to achieve strong user activity. The Facebook page now has >393K followers (growth of >57.4K followers over the project term). The average monthly reach also increased >175%, reaching >3.5M Mexican consumers each month.

An *Oat-carrot cake* recipe shared in 2023 March reached >69K people and received >46.9K engagements—the highest volume of single-post engagements to date. A recipe from the Eighth Recipe Contest, *Roles de canela de avena* (Cinnamon oat rolls) reached >45K people and garnered >29.1K engagements—the second-most-engaged post of the year. The regular food blogger entries, as well as the featured recipes from the recipe contest, continue to engage followers and introduce new food cultures to different markets.

The Avena Canadiense website receives abundant activity and the YouTube channel continues to grow organically.

The entire Avena Canadiense Facebook campaign has surpassed the reach, circulation, or readership KPI by 105%. Website and social media views surpassed KPIs by >119%. This shows that the Facebook community developed over the past years is loyal, engaged, and excited with the new content.

Three events were held across the project term, including two virtual cooking workshops with a combined reach of >72.8K and combined views of >20.4K. Cooking workshops were held in collaboration with the Mexican Diabetes Federation (FMD) and attained high-engagement levels with the Avena Canadiense Facebook community.

The third event—the virtual ceremony—followed the Eighth Recipe Contest. This event exceeded all expectations, achieving >230.8K in reach and >145.4K views. Virtual-event viewership and engagement continue to obtain higher participation rates than in-person events.

From 2015–2021, Canada was the largest exporter of oats in Mexico and reached a dominant position in the market with >90% of the market shares. However, in recent years, the overall demand for oats has remained stable and in 2022, Canada lost its position as the main exporter due to supply issues resulting from the 2021 drought. Canada’s oat production volume is recovering and POGA will work to re-establish the industry’s hold in the Mexican market in the coming years.

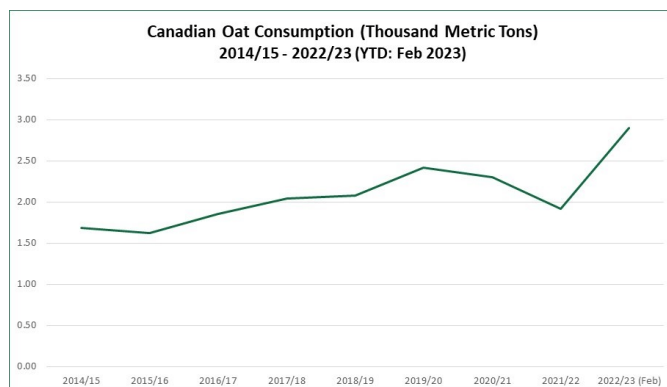
This project is supported by the Prairie Oat Growers Association (POGA) and funded through the AgriMarketing Program under the Canadian Agricultural Partnership, a federal, provincial, territorial initiative.



The **Canada–Oats Everyday** campaign exceeded all KPI targets, following 2022 January funding approval from the Ag Action Manitoba Program for Industry Organizations (funded by the governments of Canada and Manitoba). This resulted in massive KPI increases: the average monthly reach increased 733% from 2021 to >2.6M views each month in 2022.

Top-performing content included *Carrot-ginger oat cakes with cream cheese filling*, accumulating >106.4K in reach and >8.8K engagements. An *Apple salad with oatmeal* recipe garnered >98.3 in reach and >7.7K engagements. Content is shared in English and French and receives extremely positive feedback from the consumer audience.

Consumption rates also increased through the period of the campaign. Canadians were reported to have consumed 1.9 MT of oats in 2021/22, compared to most recent reports from March 2023 which indicate that Canadians consumed 2.9 MT of oats in 2022/23. Consumer demand for oats within Canada has grown 66% since the launch of this campaign.



Source: USDA [World Markets and Trade, March 2023](#)

This project is supported by the Prairie Oat Growers Association (POGA) and was funded by 1) the AgriMarketing Program under the Canadian Agricultural Partnership, a federal, provincial, territorial initiative and 2) the Canadian Agricultural Partnership, Ag Action Manitoba—Industry Development Program.



Once again, the **Japan–Kanadanootsumugi** social media component of this campaign garnered excellent results. Social media views for the Facebook and website campaign exceeded the 2023 KPI for Website & Social Media Views (10M) within the first year of the campaign! By the end of the two-year project term, the target was exceeded by 305% with an average monthly reach of >1.2M Japanese consumers. Followers increased by 280%, finishing with just under 4K followers.

New recipes were developed by project bloggers based in Canada, Mexico and Japan and translated into multiple languages for use across all three markets. The most recent highlights include a recipe for *Otomiru no kyarottokeki* (Oat-carrot cake), which received >32K in reach and >2.7K engagements. A recipe created by Japanese food journalist Takanori Nakamura for *Otsu mugi no kanta n kama-yaki-fu pitsua* (Easy oven-baked pizza) garnered >20.7K in reach and >1.7K engagements.

Japan is one of the largest importers of oats globally. Canada has been the leading exporter of oats in recent

years, followed by Australia and other countries. While Canada is the largest supplier of raw oats, especially for feed purposes, Australia and other countries target value-added products, supplying mainly processed oats for food consumption. Demand for oats is expected to increase significantly among senior and young consumers due to the growing request for healthy products and alternatives to traditional ingredients. POGA's work to increase market share proved successful when Canadian oat supplies were sufficient to meet market demand (pre 2021 drought).

This project is supported by the Prairie Oat Growers Association (POGA) and funded through the AgriMarketing Program under the Canadian Agricultural Partnership, a federal, provincial, territorial initiative.

Your SaskOats Board at Work

In February, Jessica Slowski, SaskOats director, and Ambrely Ralph, SaskOats Chair, met with C-Merak in Tisdale, SK to tour their facility and learn of new opportunities for oats. C-Merak is a new processor that creates food ingredients from oats and faba beans with a goal: To unlock all the hidden potential within faba beans and oats. Jessica Slowski states, "The C-Merak team provided a great overview of their current processing endeavours. The entire team is passionate about the future of oat processing in Saskatchewan and it was inspiring to hear of what lies ahead."

Your MOGA Board at Work

On February 14, 2023, MOGA board members and staff met with representatives of Richardson International to tour the Richardson Innovation Centre in Winnipeg. The centre is a relatively new food-product-development and quality-testing facility which opened in 2020. The 62,000 ft² facility houses the Oilseed and Milling Product Development Suites, Analytical Laboratory, and Culinary Testing and Demonstration Kitchen. The board and staff were shown the oat grading system; the testing system for pesticide, mycotoxin and heavy metal residue (included the oat milling and grinding equipment used); and a variety purity test (on barley). They also viewed the environmental monitoring testing lab which is used to identify any possible health and safety risks to the public, and explored the test kitchen. Richardson International is the largest oat processor in Canada and the oat commissions will continue to work with all the oat millers, buyers and others in the oat industry to foster the relationships needed to keep the Canadian oat industry moving forward.



MOGA tours the Richardson Innovation Centre. From left to right: Shawna Mathieson, Executive Director; Edgar Scheurer, MOGA board member; Yves LaPointe, MOGA Chair; Cyndee Holdnick, Marketing Coordinator/Assistant; Jenneth Johanson, MOGA board member; Ray Mazinke, MOGA Vice-Chair; Daniel Swidinsky, Richardson International Crop Input Representative; Peter Entz, Richardson International Assistant Vice-President, Seed and Traits

Your POGA Board at Work

On March 26-29, Bob Lepischak, MOGA/POGA director, represented oat growers at Grain Growers of Canada (GGC) Grain Week 2023 Policy Mission in Ottawa. Three GGC teams participated in the various meetings with officials, including Senators and MPs. Discussions focused on the Roadmap to 2050—Canadian grain farmers' approach to meeting the challenge of net-zero emissions by 2050. There were four topics covered: extension; innovation; incentives; and, measurement and data.

The GGC team brought forward the following support required from government for producers to accomplish this goal:

- Invest in and promote Canada as a world leader in R&D (publishing gene-editing guidance; base regulations and approvals on science and risk; and, defend varieties and crop inputs that are approved for use in Canada).
- Enable innovation and encourage farm leadership by avoiding prescriptive policies.
- Champion Canada as a world leader in low-emission grain and create conditions to grow our Canadian advantage.
- Promote increased grain exports as a global climate solution.
- Oppose Bill C-282 (which will be a deterrent for negotiating trade deals).
- Increase resources and political commitment to fighting trade barriers.
- Implement Supply Chain Task Force recommendations including expanded interswitching.
- Implement reciprocal penalties to make railways pay when they don't deliver.
- Invest to remove pressure points on our railways.

There was also a presentation and question-and-answer session with The Honourable Marie-Claud Bibeau, Federal Minister of Agriculture.



Part of one of the three GGC teams representing grain producers at Grain Week 2023 (from left to right): Bob Lepischak, western MB producer and POGA director; David Bishop, SW AB producer; Scott Hepworth, Assiniboine area MB producer; and, Kaitlyn Kitzan, Theodore, SK producer.



26th Annual Conference

Wednesday, December 6, 2023

Delta Hotel, 350 St Mary Avenue, Winnipeg, MB

Please join us on **Tuesday, December 5 at 8:00 pm** for a **Meet-and-Greet**
In Charleswood B in the Delta Hotel

AGENDA

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|----------|--|
| 8:00 am | Registration and Free Hot Breakfast |
| 8:45 am | Welcome and Introduction —Brad Boettger, POGA President |
| 8:50 am | Attitude is Everything —Matt Booth, Author and Attitude Adjuster
Extraordinaire |
| 9:50 am | POGA Annual General Meeting —Brad Boettger, POGA President |
| 10:15 am | Coffee and Networking Break |
| 10:45 am | Agronomic Considerations for Growing Oats Including What's Better in Oats, Side Banding vs. Midrow banding —Brienne McInnes, NARF |
| 11:15 am | Weather, Need We Say More? —Drew Lerner, Weather Know-It-All, World Weather Inc. |
| 12:15 pm | Hot Lunch and Networking |
| 1:30 pm | Agriculture: Because Starvation Sucks! We Are Already Sustainable, How Do We Define That? —Damian Mason, Podcaster and Ag Promoter |
| 2:30 pm | New Health Claims for Oats: Looking Beyond Beta Glucan —Sijo Joseph, Ph.D. AAFC Research Scientist and Thomas Netticadan, PhD, AAFC Team Leader |
| 3:00 pm | Networking/Coffee Break |
| 3:45 pm | Oat Market Outlook —Randy Strychar, President, Oatinformation.com |
| 4:45 pm | Wrap-up and Adjourn —Brad Boettger, POGA President |
| 5:45 pm | Social Hour at the Winnipeg Delta Hotel |
| 6:30 pm | Dinner and Presentation —Laughs in Agriculture, If You Ate it, Drank It or Smoked It Agriculture Produced it! Damion Mason, Podcaster and Ag Promoter |
| 8:00 pm | Program Ends. See you on December 4, 2024 at the Fairmont Banff Springs Hotel in Banff, AB |

Daytime seminars, breakfast and lunch: \$40.00 (\$50 at door)

Optional Evening Banquet \$50.00 (\$60 at door)

**Times and agenda topics subject to change. For updates, pre-registration and credit card payments - visit poga.ca*

Use the 'Book Your Room' link on poga.ca to secure the negotiated rate of \$159 (plus fees) per night or you can call the Delta Reservation Line at 1 (800) 268-1133

The room block closes on November 19, 2023!

The Oat Scoop
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