



ANNUAL REPORT

2022/2023

INTRODUCTION

This annual report details the 17th year of the Saskatchewan Oat Development Commission (SaskOats) operations.

Shawna Mathieson is now in her 13th year as the Executive Director of the Prairie Oat Growers Association (POGA), and the Alberta, Saskatchewan, and Manitoba oat commissions. She leads the executive and administrative duties of POGA and the three provincial entities. Since 2017, Cyndee Holdnick assists part-time with the administration of the four commissions.

Prairie Oat Growers Association (POGA)

The Prairie Oat Growers Association (POGA) is a voluntary organization that was established in 1998 to promote the interests of oat growers. POGA is comprised of the Saskatchewan Oat Development Commission (SaskOats), the Alberta Oat Growers Commission (AOGC), and the Manitoba Oat Growers Association (MOGA).

The overall objective of POGA is reflected in the vision and mission statements:

Vision: *Increase profitability of growing oats for growers across Western Canada.*

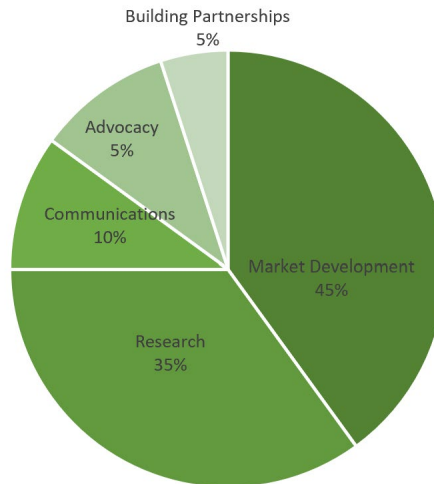
Mission: *Optimize oats as a competitive crop and increase grower profitability through the grower supported levy which directs and funds research, helps develop new markets and products for oats, influences policy, and builds partnerships with the oat industry around the world to better serve the Western Canadian oat grower.*

POGA is funded by the three provincial entities with SaskOats being the largest funder, given the majority of oats are produced in Saskatchewan. All three associations collect a 50 cent per tonne check-off from every tonne of oats grown for sale in their respective province. Each province is governed by a six-member board of directors and all are board members of POGA.

The Executive Director, guided by the board of directors, manages the administrative and policy duties of the provincial organizations. In addition, through POGA, the Executive Director manages the monitoring of projects that are mutually beneficial to all three entities. Some projects continue to be provincially directed and therefore funded directly from the provincial organizations.

SaskOats directly funds the Crop Development Center (CDC) at the University of Saskatchewan, the Indian Head Ag Research Farm (IHARF), Northeast Agricultural Research Foundation (NARF), East Central Research Foundation (ECRF), Southeast Research Farm (SERF), Western Applied Research Cooperation (WARC), Irrigation Crop Diversification Corporation (ICDC), Ag in the Classroom Saskatchewan, the Saskatchewan Oat Variety trials, as well as some of the projects listed in this report.

All four commissions utilize the same priorities for spending funds, as all commissions work together to promote oats in Western Canada. As such, SaskOats' goals for expenditures for 2022-2023 were:



EDUCATION/AWARENESS

A key priority of SaskOats is educating youth on the merits and opportunities of agriculture in Saskatchewan. In support of this priority, SaskOats provides an annual commitment of \$15,000 to support Ag in the Classroom (AITC-SK). In addition, through AITC-SK, and in partnership with Bob's Red Mill, reached over 5,500 school-age kids by providing a "Nutrition Support Bursary" of \$300-\$400 each to 20 rural and urban schools to support in-school nutrition programs.

The bursary was used in a variety of ways ranging from a school making oat energy balls for high school students writing exams, another making oat-based bits n bites mix, which the students made using the oat-based cereals purchased. Other schools purchased oat products for kids to eat at school for breakfast or throughout the day, and one had a local resident make oat muffins. SaskOats realizes the importance of providing flexibility in this bursary program, so schools can utilize the funds most appropriately for their school and get more oats and oat education into Saskatchewan classrooms. SaskOats was very excited, once again, to partner with Bob's Red Mill to increase the number of schools reached!

SaskOats is also a member of Farm and Food Care Saskatchewan (FFCS), where the commission supported the Meals from the Farm Program this year. This initiative worked with six Saskatchewan schools to help students and teachers learn about how local farmers grow many of the foods they eat in their lunch. In addition to receiving lunch, there are several other activities happening at the Meals From the Farm partner schools. This year there was an online tour of a chicken barn with a live Q and A with a chicken farmer. One school held an agriculture-based gameshow event.

Another priority of SaskOats is educating producers and the industry on current oat initiatives, issues, and relevant regulatory changes. To provide the latest oat information and updates, the POGA newsletter, *The Oat Scoop*, is distributed a minimum of twice a year to the membership and to the oat industry. It is available on the POGA website: www.poga.ca. This newsletter provides valuable information on oats, research, and issues that impact oat producers.

SaskOats is a member of the Crop Production Week, and holds the SaskOats Annual General Meeting in collaboration with the other Saskatchewan commodity groups in January in Saskatoon.

SaskOats is also a co-host of the POGA annual general meeting (AGM), a day-long event on oat production and marketing held every third year in Saskatchewan. The 2022 POGA annual meeting was held in Saskatoon, SK, and the 2023 event will be held in Winnipeg, MB.

As a partner of POGA, the SaskOats board of directors have been active ambassadors for the oat milling and processing side of the industry. For the past sixteen years, SaskOats has sponsored the championship oat class at the Harvest Showdown Grain Show in Yorkton – one of the few shows for commercially grown grains.

Other non-research projects that SaskOats contributes to through POGA include:

- *Canadian Agricultural Safety Association “Be Grain Safe” campaign* – has developed mobile units which function as grain entrapment units for demonstrations and as rescue training units for emergency personnel. Awareness efforts are directed at producers and emergency personnel to remind them of proper safety protocols and to effectively handle grain entrapment situations; hopefully saving lives on the farm.
- *Canadian Food Focus* – this website and social media campaign, managed by FFCS, is designed to educate the public on farming and agricultural messaging. It is Canadian focused and includes information from nutritionists and dieticians to connect urban consumers with where their food is comes from.

POLICY

SaskOats strives to maintain an ongoing dialogue with the Saskatchewan government. Therefore, directors regularly meet with the Saskatchewan Minister of Agriculture to discuss current issues related to oat growers. SaskOats met with Minister Marit in November 2022, and hopes to continue engaging in these annual meetings

For eight years, SaskOats/POGA have engaged in a variety of meetings with elected and non-elected officials in Ottawa, at first in-person and then virtually. In March 2023, as part of the ninth year of these important meetings, the group held a smaller scale virtual event and connected with 13 AAFC representatives in three meetings. There were a number of key messages delivered, which included:

1. Canadian oats are prized internationally and domestically for their top-notch quality and nutritional profile. Production and demand are increasing – and we want to ensure that Canada is at the forefront. The total economic impact on the Canadian economy has grown to be over \$4 billion per year.
2. The Sustainable Canadian Agricultural Partnership (SCAP) program should include a specific focus on the smaller crops. Support for crop diversity is needed with investment in new research and value chain development. Breeding, and breeding funding, are especially important to address the sustainability challenges we are facing.
3. The Sustainable Agriculture Policy should include a specific focus on the smaller crops. Farmers and AAFC need to be intimately involved in the decisions on environment, so improvements can be made in the best possible way. Oats have one of the best environmental footprint profiles of all cereals and farmers need more support to adopt improved technologies, and to plant more diverse crops - including oats. It would be very helpful for all involved, if agriculture groups were included in the decision making on goals and targets to have input into realities of the farm and weather implications.
4. Canada needs to be investing in breeding and urges the breeding support for small crops to be increased to promote improved sustainability through crop rotation.

Building relationships is an integral part of SaskOats/POGA's work, and thus the following important initiatives remain in focus:

- *Crop Logistics Working Group* – POGA is one of a few commodity groups that has a representative here.

- *Field Crops Roundtable* – POGA is participating in this Federal Government Roundtable to ensure producer’s voices are heard on their goals of:
 - “1. All stakeholders can better navigate the regulatory system
 - 2. Reduced cumulative regulatory burden, unintended consequences, and irritants across the supply chain for stakeholders, and
 - 3. (Create) a regulatory system that reflects the realities of the day and is nimble to opportunities of the future while gaining a better understanding of challenges, disruptors and novel approaches through an increased capacity in foresight and regulatory experimentation.”
- *Grain Growers of Canada (GGC)* – SaskOats/POGA holds a membership GGC, which represents oat growers on many policy issues at the national level. GGC is advancing producer interests on issues including: Ag Canada's fertilizer emissions reduction target, market access, research, transportation, and Business Risk Management programs and solutions. A large file worked on this past year was the GGC’s “Road to Net Zero” project, which SaskOats/POGA spent much time on consultation and input to make sure producers’ voices were heard and included in the process.
- *NAMA* – POGA directors and the Executive Director have also been active advocates to the oat milling and processing sector by attending and speaking at the North American Millers Association (NAMA) annual conference each year, for the past 13 years. POGA’s strong industry support is demonstrated by invitations to these meetings to provide a producer perspective, and oats continues to be the only commodity group represented at this NAMA event.
- *Western Grains Research Foundation (WGRF)* – the oat commissions continue to be represented at WGRF. The commissions see the importance of having representation on this committee to ensure small crops, like oats, continue to have a voice and receive the much-needed research dollars.
- *Prairie Grain Development Committee (PGDC)* – the annual meeting where new varieties are either approved or rejected for commercialization. Having producer input into the process, as well as input from the entire oat value chain, helps to maintain high quality new oat varieties.

In 2021/2022, SaskOats began working collaboratively and strategically with five other crop commissions in Saskatchewan (SaskBarley, SaskCanola, SaskFlax, SaskPulse, and SaskWheat) to advocate on behalf of growers on broad policy issues.

RESEARCH PROJECTS

All previous and current research projects can be found on the POGA website at <https://poga.ca/research/research-projects/>. Research project results that POGA has approval to share are also listed in the year that the project was completed.



Denotes projects that began in 2022-2023 year



Denotes projects that were completed in 2022-2023 year

Oat Breeding

SaskOats – Crop Development Centre (CDC)

SaskOats continues to support a multi-year commitment at the University of Saskatchewan in Saskatoon with the funds being targeted at plant breeding. The objectives are to develop molecular markers for field performance, disease resistance, and end use quality. Further, CDC looks to develop varieties of oat with improved agronomic performance, and disease resistance under western Canadian environmental conditions, and with superior consumer quality. SaskOats is grateful that the Saskatchewan Agriculture Development Fund (ADF), WGRF, and other industry partners are also providing support for this very important program.

SaskOats/POGA – A 55 lb bu high protein oat, with top grain yield, is in your future, led by Jim Dyck, Oat Advantage

This private oat breeding program in Saskatoon has supplied five new oat varieties for the Prairie provinces in the past six years which contribute to over 200,000 oat acres. This research project is targeting a 10% higher bushel weight, low hull content, high protein, harvest durability, and ultimately high yielding and valued oat varieties. Heavy oats are a focus for Oat Advantage, as the improvement on weight is expected to yield benefits in transportation and storage.

SaskOats/POGA – AAFC Organic Oat Breeding Program, led by Dr. Kirby Nilsen

The goal of this program was to develop milling quality oat cultivars suitable for organic production in western Canada, and potentially across Canada. Dr. Nilsen evaluated and identified germplasm with high levels of genetically conferred disease resistance, and develop oat cultivars with durable resistance, especially to oat rusts, with acceptable milling quality suitable for organically managed production systems in western Canada, and for the ever-increasing organic markets. This project, co-funded by industry and the Canadian Agricultural Partnership (CAP) – AgriScience Program, was completed in March 2023.



SaskOats/POGA – Prairie Oat Breeding Consortium (POBC)

The POBC is a collaborative oat breeding project with industry and the Government of Canada under the CAP – AgriScience Program. It is designed to fund Western Canadian AAFC oat breeding aimed at developing food and milling quality cultivars adapted to the western provinces.

The funding for the POBC expired on March 31, 2018, and, under the new CAP AgriScience Program, all breeding programs in Canada were reduced to a maximum of 50% funding. While this is a large reduction in funding, Agriculture and Agri-Food Canada (AAFC) did agree to maintain 50% of the original budget request, therefore, allowing this project to continue. The POBC members, including POGA, contributed 37.5% of the total project budget through March 31, 2023. Work started in early 2022 to continue this vital breeding program, and with the help of many companies in the oat industry, POGA jointly applied through the Government of Canada to extend this program starting April 1, 2023.

SaskOats/POGA – Breeding, Genomics and Agronomy Research to Improve Oat Yield and Quality, led by Dr. Weikai Yan and Dr. Nick Tinker at AAFC Ottawa

This project was part of the Oat Cluster partially funded by the AAFC CAP AgriScience Program – Cluster Component, and was completed in March 2023.

There were six objectives in this project and POGA helped fund objectives two to six:

- 2) identifying optimal agronomic practices to achieve high, stable grain yield and quality;
- 3) enhancing the current oat breeding procedures in both the Ottawa and Brandon programs with genomic selection;
- 4) improving the ability to deploy appropriate rust resistance genes through a survey of Pc gene profiles in existing cultivars, and Pc gene effectiveness in Canada;
- 5) enhancing genetic diversity in North American oat breeding programs through a joint testing and genotyping network that promotes germplasm exchange and provides information about adaptation; and
- 6) developing a multi-faceted approach to data and knowledge management that enhances all objectives of this project and benefits world-wide pre-competitive oat research.

Variety/Trials

SaskOats – Saskatchewan Variety Performance Trials, led by Saskatchewan Agriculture

Saskatchewan Agriculture looks to assess various oat varieties and their suitability to various Saskatchewan regions. Trials are conducted in various areas throughout the province, and the varieties are chosen based on top yearly performers. The information is important for producers to grow the variety best suited for their region to ensure a quality, profitable crop. SaskOats requested, and now funds, enhanced work in these trials to include lodging and height data for oats.



SaskOats/POGA – Alberta Variety Trials, led by Gateway Research Organization (GRO)

This variety trial tests 11 approved milling varieties to investigate the impact of the variety and growing conditions on the yield and beta-glucan in both Westlock, AB and Fahler, AB. The goal of this trial is to determine if a variety with higher beta-glucan can consistently outperform Morgan oats in Alberta to meet miller demands for increases in this attribute. It will also compare older oat varieties that still perform well and are grown on many acres, with the new varieties. The comparison of commonly grown varieties, both old and new, has been found to be beneficial in all three Prairie provinces. The board would like to also acknowledge the wonderful work of Sandeep Nain, the manager at GRO since this project started. Nain sadly passed away in a car accident in 2023. While the project continues, we will miss his attention to detail, flexibility, and good-natured personality. This project is co-funded with Grain Millers Canada.



SaskOats/POGA – Oat varietal response to plant growth regulators, led by Brianne McInnes at the Northeast Agriculture Research Foundation (NARF) and Chris Holzapfel at Indian Head Agricultural Research (IHARF).

This project looked at the responses of different oat milling varieties to applications of the registered plant growth regulators (PGRs) Moddus and Manipulator. Through previous research, both products have been found to decrease plant height, which diminishes the risk of lodging in cereal crops. Lodging has the potential to cause yield losses of 7-35% in cereal crops and can subsequently lead to significant reductions in grain quality. Plant height in oats is often increased with enhanced fertility as more available N results in more rapid plant growth. It is suspected that different varieties will respond differently to PGR applications as a result of different genetics for yield, lodging, and height characteristics. This project was funded by the ADOPT program, and was completed this year.

SaskOats/POGA – Oat Lodging: Identifying key root and shoots traits for improved standability, led by Dr. Aaron Beattie and Dr. Feurtado

This project will evaluate root system architecture in oat cultivars which vary in lodging resistance. It will evaluate stem and root lodging in field trials; assess impact of seeding rate on key stem and root lodging-related traits; assess the correlation between various root phenotyping methods; and compare root system architecture between Canadian oat germplasm and a diverse set of oat germplasm. Lodging and mechanical failure of the stem or root system is a significant issue for oats, leading to yield reductions for producers. Identifying root and stem traits important for lodging resistance will lead to enhancements in breeding cultivars with high standability. This project is co-funded by the Saskatchewan Agriculture Development Fund (ADF).

Insect/Disease/Weeds

SaskOats/POGA – Coordinated Monitoring of Field Crop Insect Pests in the Prairie Ecosystem, led by Dr. Meghan Vankosky at AAFC Saskatoon

The Prairie Pest Monitoring Network is a collaborative project. Participants include federal and provincial entomologists, university scientists, agronomists, industry, and producers. Participants monitor insect pests annually across Saskatchewan, Manitoba, Alberta, and the BC Peace Region. Data is released on a weekly basis when insect pests pose the greatest threat to crop yield. Annual data is collected and compiled into distribution maps, and in some cases, forecast maps for the subsequent season. These tools provide up-to-date, relevant information that can be used by agronomists, industry representatives, and farmers to make decisions regarding insect pest management. This project is co-funded with the WGRF and other commissions. This project ended in 2023 but has been renewed through 2028.

SaskOats/POGA – Development of Markers Linked to Oat Crown Rust Resistance to Help Breed Improved Oat Varieties for the Canadian Oat Producers, led by Dr. Aaron Beattie at the CDC

To build on Western Canada's position as a supplier of premium quality oats to the current US markets, and developing markets like Mexico and Japan, it requires developing varieties with a strong disease resistance package (of which crown rust resistance is a critical component). This project will provide value to growers, through improved yield and sustainability, with reduced chemical use which lowers input costs and helps the environment. This will help oats remain a viable crop within a grower's rotation, and to millers/food processors through higher selectability (i.e., good plumpness and test weight). This project is co-funded with ADF and will be completed in 2024.

SaskOats/POGA – Selecting crop sequences and developing a risk model to mitigate FHB in western Canadian cereal production, led by Paul Bullock, University of Manitoba and Randy Kutcher, University of Saskatchewan

Fusarium head blight (FHB) is a fungal disease affecting cereal crops in Canada that reduces productivity and produces mycotoxins in the grain. This fungal disease is caused by a number of Fusarium species of which *Fusarium graminearum* is considered the most important because of its abundance, its toxin producing ability and its impact on grain quality and yield. Currently, the most important practices recommended to cereal growers for FHB management include non-host crops in the rotation, resistant cultivars, and application of fungicides.

Cultural management of FHB of cereals, in particular crop rotation or the sequence of crops grown, can play a major role in an integrated management approach to FHB, as well as many other pest and agronomic issues. However, there are no studies in Canada that clearly indicate the impact on FHB of various cereals due to the previous crop(s) cultivated. This project was completed this year.





SaskOats/POGA – The Prairie Crop Disease Monitoring Network, led by Dr. Thomas Turkington, AAFC (Lacombe Research and Development Centre)

The goal is to further develop and formalize the Prairie Crop Disease Monitoring Network (PCDMN), including annual in-person and/or online meetings. The group also will look to further develop and refine survey protocols, and continue work on disease information and awareness initiatives for a wider range of crops and diseases. The PCDMN Quick Disease Reporter Tool will be refined, and work will be done to develop disease assessment and risk assessment tools, as well as blackleg pathogen mapping. The network is also continuing their weekly cereal rust risk forecasts from mid-May to early June; new for 2023 is the addition of oat crown rust to the assessment.



SaskOats/POGA – Insect Response to Climate Change and Aq-Inputs across the Prairies, led by Dr. Meghan Vankosky, AAFC (Saskatoon Research and Development Centre)

The project has three Objectives:

First: *Understand insect pest population dynamics and forecast pest populations.* The project will evaluate the response of insect pests to climate variables to understand their population dynamics, outbreak frequency, and recent changes to insect distribution and relative abundance, using experiments and by continuing annual insect monitoring by the Prairie Pest Monitoring Network.

Second: *Assess the current status of insecticide resistance in western Canada.* This portion will evaluate the current susceptibility of insect pests of cereal, pulse, and oilseed crops to registered insecticides commonly used in western Canada.

Third: *Develop new insect information resources.* Lastly, the project will create information resources to augment insect outreach activities in western Canada.



SaskOats/POGA – The Prairie Weed Monitoring Network, led by Charles Geddes, AAFC (Lethbridge RDC)

This project aims to develop the Prairie Weed Monitoring Network (PWMN) and to implement a comprehensive weed biovigilance strategy, including: weed monitoring, risk assessment, and forecasting for the prairie region of Canada. This data, and that of past surveys, will be leveraged along with other open data resources to conduct spatial risk analyses for the evolution of herbicide-resistant weed biotypes of greatest concern and where they are most likely to occur, in addition to the development of a tool to forecast weed community shifts in response to management factors and climate change.

Fertility/Climate/Environment



SaskOats – Are oats responding to higher levels of macronutrients?, led by Mike Hall, at East Central Research Foundation (ECRF)

The objective of this project was to demonstrate the response of a modern oat varieties to the historically recommended rate of 60 lb. N/ac against the more recently suggested recommendation of 90 lb. N/ac and to determine the relative importance of adding phosphorus (P), potassium (K) and sulphur (S) for these different nitrogen (N) recommendations in eastern Saskatchewan. The influence of treatment on oat yield,

lodging, and test weight was determined. Due to the poor growing conditions in 2021 this project was extended by one year. This project was funded by the ADOPT program and completed in 2023.



SaskOats – 4R Management: Right Rate and Placement for Fertilizer in Oats, led by Brianne McInnes, Northeast Agriculture Research Foundation (NARF).

The purpose of this demonstration was to highlight the impact of fertilizer placement and rate on oat establishment, seed yields and quality. Oat response to various macronutrients has been investigated, and research has shown that oats are responsive to additions of nitrogen and sometimes phosphate. Prior research has not included different fertilizer placement methods. Some research in this area has been done on wheat, showing different responses and impacts from various placements. The intention was to demonstrate different fertilizer placements at seeding, and determine whether or not these affect plant stands, yields, or crop quality. This project was funded by ADOPT, and was completed this year.

SaskOats/POGA – Collecting the Carbon Data Needed for Climate-Smart Agriculture in Saskatchewan, led by Dr. Kate Congreves at the University of Saskatchewan

There is no direct annual data on net carbon footprints of Saskatchewan cropping systems. This project will address this gap by providing spatially and temporally integrated data on greenhouse gas (GHG; N₂O and CO₂) emissions at the field scale level. This information will be used to determine net ecosystem exchange and the net carbon footprint of the cropping system. This project is co-funded with ADF and will be completed in 2024.



SaskOats/POGA – Economic Value of Diversified Cropping Systems, led by Elwin Smith, at the University of Lethbridge

Short crop rotations provide a conducive environment for an increase in plant disease, weed pressure from herbicide resistance, and insect damage. While some short rotations are currently profitable, the lack of diversification in a cropping system can be detrimental to maintaining crop yield and profitability.

This study looked to determine the net return and variability of net return associated with cropping systems of different rotation length and diversity of crops. This information will be used to determine the marginal user costs of the “pests” associated with reduced diversity in cropping systems, and to determine the degree to which participation in business risk management (BRM) programs (crop insurance, AgriStability) affects the long-term economics of cropping systems (e.g., potentially masking of negative impacts of reduced diversity). The project was completed this year.



SaskOats/POGA – Revising the crop nutrient uptake and removal guidelines for Western Canada, led by Dr. Fran Walley at the University of Saskatchewan

The goal of this project was to develop new estimates for crop nutrient uptake and removal, as the current information regarding crop nutrient uptake and removal did not reflect current crop yields, and the grain and straw nutrient concentration estimates

were not adequately reflective of current varieties. Also, there is no consistent data regarding micronutrient uptake and removal. This project was completed this year.



SaskOats/POGA – Oat N Response led by Mike Hall, East Central Research Foundation; Brianne McInnes, Northeast Agriculture Research Foundation; Robin Lokken, Conservation Learning Centre; and Gursahib Singh, Irrigation Crop Diversification Centre

This project aims to determine the yield and test weight response of oats at 15% and 30% reductions in optimum rates of N. The specific rates of soil plus fertilizer N tested will be 125 lb/ac, 106 lb/ac, 88 lb/ac and no applied N. Two varieties of oats will be used in this project – CS Camden and CDC Arborg. This one-year project will be completed in 2024.

Nutrition/Product Creation



SaskOats/POGA – Beyond Beta Glucan, led by Dr. Sijo Joseph at AAFC

The objective of this project was 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. Ultimately, the Canadian oat industry could capitalize on new opportunities for marketing efforts with new evidence promoting the health benefits of adding oats in a diet. It will enable the Canadian oat industry to meet consumer expectations in search of value-added oat products both at home and worldwide. This project was co-funded with the CAP AgriScience program, and ended in 2023.



SaskOats/POGA – Understanding the Impact of Particle Size on Physicochemical Properties and Nutritional Benefits of Pulse and Oat Flours, led by Dr. Yongfeng Ai at the University of Saskatchewan

This project investigated the effects of milling/processing of pulse and cereal flours on their physicochemical functionality in foods, as well as determined the impact of milling on the nutritional benefits of pulses and cereals with a focus on postprandial (post lunch and the evening meal) glycemia and insulinemia. This project was co-funded with ADF and was completed this year.



SaskOats/POGA – Development of a nutritionally enhanced plant-based milk alternative beverage from Canadian oats and study of its glycemia-lowering effect, led by Dr. Lingyun Chen at the University of Alberta

This project was a continuation of Dr. Chen's previous work to address industry interest in using fractionated oat ingredients as a source of food product innovation. Research indicates that from a diabetic management perspective, a mere 1% decrease in glucose levels among diabetics can lead to a 21% decrease in death and a 37% decrease in heart attacks. Therefore, developing convenient diabetic-friendly drinks can extend patients' lives and help reduce the cost of treatment.

The specific objectives were to:

1. Study competitive advantages of Canadian oats for development of healthy oat milk products; special emphasis was placed on oat varieties with high yield, protein and beta-glucan.
2. Optimize processing to enhance recovery of oat nutritional components into a nutritionally enhanced oat milk drink with significantly improved protein and beta-glucan content.
3. Study peptides with anti-diabetic effects from oat protein for functional oat drink development and evaluate the drink hypoglycemic effect through in vivo test in diabetic animal model.

This project, co-funded with Results Driven Agriculture Research (RDAR), was completed in 2023.



SaskOats/POGA – Development of healthy food products by combining proteins and dietary fibers from oats and pulse, led by Dr. Lingyun Chen at the University of Alberta

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). The high-quality milling oats in Canada are good sources of both dietary fiber and plant protein. The long-term goal of this research is to develop high quality protein and fiber ingredients from oats for healthy food development.

The short-term objectives are to develop technology innovations to combine protein and dietary fiber from oats and pulse to fabricate:

1. Fat replacers for low fat dairy/dairy substitute product development; and
2. Texturized vegetable protein products for meat analogue applications.

This research will provide opportunities to add value to oats and pulses as two major crops in western Canada. Food products high in both plant protein and dietary fiber will provide consumers with healthy choices and help control the prevalence of obesity in the society and lower the risks of chronic disease. This project is co-funded by RDAR and will be completed in 2024.

Intercropping/Other

SaskOats/POGA – Intercropping Pea with Canola or Oat: impact on nitrogen, disease and economics, led by Dr. Liu Kui at AAFC

Intercropping pea with oat or canola enhances biodiversity and likely increases resource (e.g., nitrogen, water, and phosphorus) use efficiency. The improved quality and quantity of straw from the intercrops likely affect straw decomposition, soil health, soil carbon, and N dynamics. In this study, the effects of intercropping on soil particulate organic matter carbon and N will be determined. This study will be conducted at three sites in Saskatchewan. This project is co-funded with ADF and will be completed in 2024.

SaskOats/POGA – Continuing studies on intercropping for increasing yield and quality of grain and forage crops, and improving soil quality, led by Dr. Myriam Fernandez at AAFC

This project will look at the relationship between various intercrop dynamics to see where benefits can occur. Intercrop species use soil available nutrients and soil moisture, and at given times inter- and intra-competition are expected. Specifically, the project will look to 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 impact on each crop. It will aim to identify if there is a nitrogen benefit from legumes in the intercrop to its companion crop, as well as look to determine the biomass and grain yield/quality due to the intercrop dynamics. It will also look at the disease pressures, and evaluate if intercrops have less disease than monocrops, as well as develop crop growth and nutrient models for intercrop versus monocrop scenarios. This project is co-funded with WGRF and will be completed in 2025.

SaskOats/POGA – Develop New Strategies to Efficiently Utilize Oat Grains in High Production Dairy Cows to Maximum Economic Return and Benefit to Prairie Oat Growers, led by Dr. Peiqiang Yu at the University of Saskatchewan

A key recommendation from the POGA study of world oat markets highlighted the need to investigate the potential to recapture the USA oat feed market. This five-year project aims to increase and enhance basic knowledge of the optimal nutrient supply to dairy cattle through variety selection, feed processing, and optimal feed ingredient blending. Objectives within this project include: finding the best oat variety or type of oat grain with the highest Feed Milk Value (FMV) for dairy cattle; improving the FMV of oats through processing applications; and finding the maximum or optimum level of oats to replace barley in high production lactation dairy cow diets. Among other things, this project will carry out a detailed metabolic study in dairy cattle to understand the effects of feed processing on rumen fermentation, degradation kinetics, intestinal digestion, and truly absorbed nutrient supply from Prairie oat grains to dairy cattle using various techniques. The project is co-funded by the Natural Sciences and Engineering Research Council of Canada (NSERC) Collaborative Research and Development (CRD) grant. Note, this project was extended due to challenges during COVID, and will be completed in 2024.

MARKET DEVELOPMENT PROJECTS

Expand the Canadian Oat Market: Mexico

SaskOats/POGA received funding through AAFC's AgriMarketing Program, and Emerging Ag is contracted to manage the Mexican campaign. Mexico is the third largest importer of oats globally and several other Latin American countries who import oats could offer additional opportunities for Canadian exports. A long-term strategy for POGA is to make use of the proximity to these markets, and build on the strong Canadian reputation for products in Mexico which would support the efforts to differentiate Canadian oats. This project focuses on diversification of Canadian oat exports to Mexico. The activities aim to increase per capita consumption of oats, increase Canadian oat exports to Mexico, and increase consumer awareness of the health benefits of oats. Between the project

start date of 2015 and 2020 (pre-drought) Canada was able to more than triple its oat exports to Mexico. 2021 and 2022 were difficult Canadian oat export years because a Western Canadian drought did not allow the supply of oats to maintain the 2020 levels. Oat exports are now increasing and 2023 oat exports to Mexico is now more than double 2022 levels with continued growth expected.

Funding for this project ended in March 2023. POGA applied for extended funding of this project in early 2023 and received confirmation of approval in fall 2023.

Expand the Canadian Oat Market: Japan

Due to the large success of the Mexican marketing project, SaskOats/POGA contracted Emerging Ag to manage the Japan campaign as well. AAFC's AgriMarketing Program co-funds this project. The intent is to increase demand for Canadian oats by promoting the health benefits to the Japanese market. The campaign is focused on trade advocacy, as well as social media outreach to highlight the nutritional and health benefits of oats in daily diets.

Japan is the fourth largest importer of oats globally. Canadian oat exports increased by over 15% in 2021 as compared to 2020, showing the project has had a successful impact in the first year. However, in 2022, the effects of the 2021 drought were apparent as Canadian oat exports were reduced significantly. In 2022, Canada only accounted for 15% of the market share while Australia became the main overall exporter to Japan with 61% of the market share. For 2023, with Canadian oat supply up significantly compared to 2021, statistics through July indicated that Canada now accounts for 36% of the market share in Japan, while Australia holds 52%. This demonstrates that Canada is reclaiming its stature as the primary oat exporter to Japan, closely pursuing Australia to seize the market's leading position.

Funding for this project ended in March 2023. POGA applied for extended funding of this project in early 2023 and received confirmation of approval in fall 2023.

Expand the Canadian Oat Market: Canada

SaskOats/POGA, for the first time, received funding in 2020 to promote oats as a healthy ingredient to Canadian consumers. This was a huge success since POGA had been requesting funds from AAFC for several years. In 2021, AAFC did approve additional funding to continue this project but at a much-reduced amount. Thankfully, Ag Action Manitoba agreed to co-fund the remainder of this project which is managed by Emerging Ag. This funding allowed POGA to have the ability to expand markets both internationally and domestically, and promote the safe, healthy, and nutritious product produced right here in Canada. This Manitoba funding ended on December 31, 2022 with no additional funding available to-date.

Canadian consumption of oats has been steadily increasing over the years. This great news is very apparent by increased oat consumption of 2.6M MT in 2022/2023 which is 600 metric tonnes higher than the prior year. However, oats are still perceived as a

breakfast cereal rather than an ingredient to be used in food for the rest of the day. It is important to educate Canadians on the health benefits of oats for things such as heart disease, high cholesterol, obesity, and diabetes to name a few. There is an increasing desire to eat “local” as well to reduce the environmental footprint related to the transportation of goods. The website “Oats Everyday” has been geared to Canadian consumers with materials and content supplied in both French and English. Funding for this project ended in March 2023. POGA applied for extended funding of this project in early 2023 and received confirmation of 50% of the request in fall 2023.

Keep it Clean – Cereals Canada

SaskOats/POGA contributes to the *Keep it Clean* initiative led by Cereals Canada. This program targets Western Canadian producers and aims to provide producers with proper information to get their cereals ready for the export market by highlighting important export standards and expectations. This project is important as it reminds oat growers of the possible issues of not meeting export standards around residue limits, and it informs international and domestic buyers that Canada is taking measures to meet customer expectations. POGA also provided additional funding for the creation of *Keep it Clean* videos with key messages like proper glyphosate use.

New Markets

SaskOats /POGA continues to look for new market potentials for Canadian oat exports. Based on that potential, POGA applied through the AgriMarketing Program (AMP) for funding to promote oats to Peru. The purpose of this project is to encourage the people of Peru to increase their consumption of oats through social media and other marketing materials. Peru was selected due to the Government of Peru’s encouragement of good health including a recent nutrition guide and the growing interest in nutritional content in Peru after Covid-19. Many of the foundational elements of the Mexican campaign will be used, due to consistent language, reducing the cost of this work when comparing to other countries. This project will begin in the 2023-2024 year after a contract with AMP is complete.

In addition, POGA has done some work to explore India and China as an opportunity to export Canadian oats. However, POGA has been informed that until the requirement for methyl bromide in India is resolved in pulses it is unlikely to be resolved in other crops like oats but there is positive movement in this area and we are hopeful that this will be resolved in the 2023-2024 crop year.

SaskOats, through POGA, in 2017 contracted Emerging Ag to work towards removing a phytosanitary barrier that will not allow raw Canadian oats into China. Work continued until early 2019 but as political challenges grew between Canada and China, POGA confirmed through the Government of Canada that no progress would be made on this issue until Government relations between the two countries improved. POGA continues to remain committed to work to address the market access issues in China once politically feasible.

SUMMARY

SaskOats has successfully contributed to the profile, representation, and profit of Saskatchewan oat growers. Since 2008, oat growers in Western Canada have contributed less than 15 cents of every dollar spent on research and marketing. The remainder is funded through partnerships and collaboration among industry and government.

SaskOats will continue developing strategic relationships through POGA and industry partners to increase oat producer profitability by enhancing producer investments in oat research and market development. As well, the commission will work on increasing the market share of oats and promoting/developing new products to meet consumer demands.

BOARD OF DIRECTORS

Ambrely Ralph

Chair

Arborfield, SK

Landon Kuschak

Vice-Chair

Ituna, SK

Elwood White

Audit Chair

Pangman, SK

Chris Rundel

Foam Lake, SK

Jessica Slowski

Sheho, SK

Ryan Zuchkan

Foam Lake, SK

STAFF

Shawna Mathieson

Executive Director

Watson, SK

smathieson@poga.ca

Cyndee Holdnick

Marketing Coordinator/Admin Assistant

Carlowrie, MB

info@poga.ca

Payee List for SaskOats 2022-2023 Year

Personal Services (Total received by Directors, All others threshold is specified)

Directors

Honorariums

Landon Kuschak	\$ 200
Chris Rundel	\$ 500
Jessica Slowski	\$ 1,500
Ambrely Ralph	\$ 1,000
<u>Ryan Zuchkan</u>	<u>\$ 800</u>
TOTAL	\$ 4,000

Out of Pocket

Chris Rundel	\$ 244
Jessica Slowski	\$ 1,703
Ambrely Ralph	\$ 1,550
<u>Ryan Zuchkan</u>	<u>\$ 651</u>
TOTAL	\$ 4,148

Research and Development (\$5,000.00 threshold)

University of Saskatchewan	\$ 76,000
SK Variety Performance Group	\$ 16,294
Northeast Agriculture Research Farm	\$ 13,150
Western Applied Research Corporation	\$ 9,150

Extension/Education (\$5,000 threshold)

SaskCanola	\$6,000
Agriculture in the Classroom	\$21,100

Supplier Payments (\$5,000.00 threshold)

Agricultural Council of Sask. Inc.	\$22,816
Baker Tilly (Auditor)	\$8,547

Market Development (\$5,000 threshold)

R and D and Communications funded via POGA	\$322,784
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SaskOats 2023-2024 Budget

Revenue

Check-off levy (\$.50/tonne)	\$ 600,000
Check-off refunds @ 7%*	(\$42,000)
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	\$558,000
Interest Income	\$20,000
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	\$578,000
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Expenses

Board of Directors	\$8,000
Communications/Education	\$33,800
Levy Administration Fee	\$25,655
Producer Meetings	\$11,955
Proportionate expenses of POGA	\$511,924
Research and Development	\$114,850
General and Administrative (Audit, Legal, Elections, memberships, etc.)	\$13,225
	<hr/>
	\$719,409
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Excess of revenues over expenses	-\$ 141,409

- ***In 2022-2023 SaskOats Refund Requests were 6.2% of dollars collected and 3.5% of the total number of producers paying the levy.***