



**ANNUAL REPORT**

***2021/2022***

## **INTRODUCTION**

This annual report details the 16<sup>th</sup> year of the Saskatchewan Oat Development Commission (SaskOats) operations.

Shawna Mathieson is now in her 12<sup>th</sup> 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. Dawn Popescul stepped in as the Interim Executive Director during Mathieson's 2020-2021 maternity leave, and has stayed on, part-time, as Senior Project Manager. 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, she 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), Ag in the

Classroom, the Saskatchewan Oat Variety trials, as well as some of the projects listed in this report.

### **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 (AIC). In addition, through AIC, SaskOats, in partnership with Bob's Red Mill, provided a "Nutrition Support Bursary" of \$300-\$400 each to 30 rural and urban schools to support in-school nutrition programs. The bursary was used in a variety of ways ranging from providing hot oatmeal breakfast to having high school Biology class research oats and make muffins for the school. 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 and was very excited to partner with Bob's Red Mill to nearly triple the number of schools reached!

SaskOats is also a member of Farm and Foodcare Saskatchewan (FFCS). In spring 2021, SaskOats sponsored FFCS's "Breakfast from the Farm" event. The project consisted of bags packed with oat recipes and granola bars supplied by Grain Millers Canada for students. Tim Hortons delivered sandwiches and drinks for students and staff, and all classrooms were invited to participate in a Kahoot challenge to learn about farming and food.

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 oat industry organizations, and is available on the POGA website: [www.poga.ca](http://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 2021 POGA annual meeting was held in Banff with over 150 people in attendance in addition to those that participated virtually, and the 2022 event will again be held in Saskatoon.

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 fifteen 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.

SaskOats, and POGA, also completed a total website update this year to make finding information about projects and events easier and more user friendly. The board encourages producers to visit [www.poga.ca](http://www.poga.ca) to see the vast resources available because of the work completed with the grower check-offs throughout Western Canada.

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 virtually in November 2021, and after the year end, met with Minister Marit again in November 2022.

In March 2022, as part of the 8<sup>th</sup> year of these important meetings, SaskOats, through POGA, held virtual meetings with over 50 key Ottawa elected and non-elected officials to discuss a variety of important issues including funding available through the next policy framework and the importance of maintaining, or increasing, breeding funding as a vital foundation of sustainability in addition to matching funding for domestic programs and funding marketing at the same level as research. In addition, the board brought forward issues on crop diversity, innovation, changes to the Business Risk Programs including concerns with linking them to unknown sustainability metrics and the importance of including producers in discussions early in the development of programs and policies before decisions have been made .

During these Ottawa meetings and others, SaskOats, through POGA, along other crop organizations across Canada, pressed for improvement to the AgriStability Program including increasing the compensation rate for growers to 80%. In July 2022, federal and provincial agriculture ministers announced that the coverage level for AgriStability would be increased from 70% to 80% starting in 2023.

Continued work on building key relationships, such as the Ottawa mission, has been critical to the SaskOats/POGA position within industry and government agencies. POGA has been requested to attend various government meetings to provide input, often where only few commodity groups are invited. For example, POGA is one of a few commodity groups that has a representative on the Crop Logistics Working Group focused on Canadian transportation issues.

SaskOats, through POGA, holds a membership in Grain Growers of Canada (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 solutions.

SaskOats/POGA is also represented at the Western Grains Research Foundation (WGRF), the Prairie Grain Development Committee (PGDC) and, in the past, has participated in industry wide meetings such as the Grains Roundtable and the Canadian Global Grains Symposium.

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 twelve 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.

In 2021/2022 SaskOats began working collaboratively and strategically with five other crop commissions in Saskatchewan to advocate on behalf of growers on broad policy issues under the group name SaskCrops which includes SaskBarley, SaskCanola, SaskFlax, SaskPulse, and SaskWheat. Environment and climate change policy was a primary topic of focus this year, along with grain contracts and other broad policy issues of importance to all growers. Below are some of the items SaskCrops collaborated on through SaskCrops this year:

- *Grain Contracts:* A number of Saskatchewan groups, including all those in SaskCrops, commissioned a review of grain contracts through Mercantile Consulting Venture which highlighted the elements of grain contracts that lack balance for growers. The review was used and will continue to be used as a discussion starter to meet with the grain handling sector to raise concerns regarding this lack of balance and transparency in grain contracts on behalf of growers in hopes to urge a more equitable structure in the future.
- *Carbon Policy:* SaskCrops jointly submitted recommendations to the federal government on several occasions, including the government's fertilizer emissions reduction target consultations. Twelve meetings with federal and provincial government officials to advocate on behalf of growers on ongoing environmental and climate change policy were executed this past year and will continue in order to advocate for growers' concerns.

## **RESEARCH PROJECTS**

*All previous and current research projects can be found on the POGA website at [www.poga.ca](http://www.poga.ca). Research project results that POGA has approval to share are also listed in the year that the project was completed.*

### **Oat Breeding**

#### 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. This funding was refocused to only include plant breeding beginning in mid-2019 due to the elimination of funding at the CDC by PepsiCo Quaker, and the strong need to maintain this vital breeding program. 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 6 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 is to develop milling quality oat cultivars suitable for organic production in western Canada, and potentially across Canada. Dr. Nilsen will evaluate and identify 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. POGA has committed funding for five years through March of 2023. This project is co-funded by industry and the Canadian Agricultural Partnership (CAP) – AgriScience Program.

#### 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 POGA, once again, applied and was approved, for further funding. All breeding programs in Canada under the CAP AgriScience Program 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, now contribute 37.5% of the total project budget through March 31, 2023. Work has started to continue this vital breeding program, with the help of many companies in the oat industry. POGA will jointly apply 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 is part of the Oat Cluster partially funded by the AAFC CAP AgriScience Program – Cluster Component.

There are six objectives in this project and POGA is helping fund objectives two to six:

- 2) identifying optimal agronomic practices to achieve high and 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/POGA – Alberta Variety Trial - 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. This project is co-funded with Grain Millers Canada.

SaskOats – Saskatchewan Variety Performance Trials – led by Saskatchewan Agriculture

Sask Ag 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 – “Which oat varieties “hold it together”, when the going gets tough?” – led by Mike Hall, at ECRF

Many oat millers will no longer accept oats treated with pre-harvest glyphosate. Losing this harvest management tool forces many producers to leave oats standing in the field longer, creating a greater risk of poorer grain quality and higher harvest loss. The objective of this project is to help producers select milling oat varieties that are more likely to maintain yield and grain quality when harvested later. Lodging, shatter loss, grain quality and yield between six (6) commonly grown milling oats will be compared between ideal and late harvest timings. This project is funded by the ADOPT program and was completed this year.

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 looks 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 is funded by the ADOPT program.

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 Manitoba, Saskatchewan, 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 will end in 2023.

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

The largest on-going threat to oat production in Canada (and worldwide) is the fungal pathogen which causes oat crown rust. Crown rust can weaken straw causing plants to lodge. In Canada, yield losses from oat crown rust averaged 5.1% from 2001 to 2005. While cultural control methods, such as crop rotation and early seeding, and fungicide application can reduce crown rust severity, incorporating genetic resistance is an important component to an integrated management strategy.

In order to effectively and efficiently implement these approaches, it is necessary to genetically map the location of both seedling and APR genes within the oat genome and develop markers to these genes. The CDC oat breeding program is currently using markers linked to these genes in order to incorporate and select for crown rust resistance. This project is co-funded with ADF and will be completed in 2024.

SaskOats/POGA – “Stimulating Germination in Wild Oats and Volunteer Cereals” – led by Dr. Shaun Sharpe at AAFC

The study objective is to characterize the dose response, interaction, and optimal mix of potassium nitrate and pyroligneous acid (liquid smoke) to determine the suitability of either pre-seeding or post-harvest germination stimulation of wild oat, volunteer barley, oats, and wheat. By allowing early germination producers can eliminate wild oats before the planted crop emerges increasing yield and quality of the crop. Wild oats are a strong competitor and can cause significant yield loss when emerging with cereals. This project is co-funded with ADF and was completed this year.

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.

### ***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 is 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 will be determined. Due to the poor growing conditions in 2021 this project was extended by one year. This project is funded by the ADOPT program and will be completed in 2023.

#### 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; N<sub>2</sub>O and CO<sub>2</sub>) 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 an environment conducive 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 will look to determine the net return and variability of net return associated with cropping systems of different rotation length and diversity of crops. This 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) affect the long-term economics of cropping systems (e.g., potentially masking of negative impacts of reduced diversity).

#### 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 is to develop new estimates for crop nutrient uptake and removal, as the current information regarding crop nutrient uptake and removal does

not reflect current crop yields, and the grain and straw nutrient concentration estimates are not adequately reflective of current varieties. Also, there is no consistent data regarding micronutrient uptake and removal. This project was completed this year.

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 is 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 is to demonstrate different fertilizer placements at seeding, and determine whether or not these affect plant stands, yields, or crop quality. This project is funded by ADOPT.

***Nutrition/Product Creation***

SaskOats/POGA – “Beyond Beta Glucan” - led by Dr. Sijo Joseph at AAFC

The objective of this project is 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 is co-funded with the CAP AgriScience program.

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 will investigate the effects of milling/processing of pulse and cereal flours on their physicochemical functionality in foods, as well as determine 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 is 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 is 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 are to:

1. Study competitive advantages of Canadian oats for development of healthy oat milk products; special emphasis will be placed on oat varieties that are high in 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.

This project will also 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 is co-funded with Results Driven Agriculture Research (RDAR) and will be 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. The 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.

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 end 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.

SaskOats/POGA – “Tuning the Oat Genome with CRISPR-based systems” - led by Dr. Jaswinder Singh at McGill University

Clustered Regularly Interspaced Short Palindromic Repeats (CRISPR) is a genome-editing technology that can be used to zero in on and modify stretches of genetic code and alter gene function to achieve favorable, or prevent unwanted, traits. While the project will not create a CRISPR oat, it will lay the foundation for a new genome editing method in oat. The major objective is to integrate CRISPR- based genome editing approaches with oat breeding for the possible development of future generation of oat varieties.

Other objectives are to ensure the agility of the oat research community to respond to new opportunities, and possibly to integrate CRISPR- based genome editing approaches in the future, if that is desired. This technology may allow breeding for the development

of oat varieties that address new challenges in food security and environmental stress. This project is partially funded by the AAFC AgriScience Program and was completed this year.

## ***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. Since this project began in 2015, Canada has been able to more than triple its oat exports to Mexico (Note: 2021 was not included in this export number as widespread Western Canadian drought did not allow the supply of oats to maintain the 2020 levels). Current funding for this project will end in March 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 of oats to the Japanese market. Japan is the fourth largest importer of oats globally, and Canada has been the leading exporter of oats in recent years. Canadian oat exports increased by over 15% in 2021 as compared to 2020, showing the project has had a successful impact. Canada is the largest supplier of raw oats in Japan; however, the goal is to gain market share in the human-consumption arena. The campaign is focused on trade advocacy, as well as social media outreach to highlight the nutrition and health benefits of oats in daily diets. Current funding for this project will end in March 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 which POGA had been requesting from AAFC for a number of years. In 2021 AAFC did approve additional funding to continue this project but at a much-reduced amount. Thankfully, Manitoba Ag in Action agreed to co-fund the remainder of this project which is managed by Emerging Ag. This funding allows 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.

Canadian consumption of oats has been steadily increasing over the years. 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 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 (and materials will be supplied in both French and English).

#### *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 and has done some work to explore India and China as an opportunity. 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.

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 on this 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. At that point POGA requested, and received approval, to redirect the AgriMarketing funds allocated for China to Japan. POGA still believes there is large potential in China for Canadian raw oats. If raw Canadian oats were allowed into China this could be a huge market potential for Canadian oat growers, since China is the fastest growing oat importer in the world. This could significantly and positively impact the economic viability of Canadian oats. 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**

**Chris Rundel**

**Chair**

Foam Lake, SK

**Landon Kuschak**

**Vice-Chair**

Ituna, SK

**Ambrely Ralph**

**Audit Chair**

Arborfield, SK

**Alan Butuk** (term ended at the 2022 AGM)

Insinger, SK

**Wade Hainstock** (term ended at the 2022 AGM)

Moose Jaw, SK

**Garry Johnson** (term ended at the 2022 AGM)

Swift Current, SK

**Jessica Slowski** (term began at the 2022 AGM)

Sheho, SK

**Elwood White** (term began at the 2022 AGM)

Pangman, SK

**Ryan Zuchkan** (term began at the 2022 AGM)

Foam Lake, SK

**STAFF**

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Executive Director

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Senior Project Manager

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**Cyndee Holdnick**

Marketing Coordinator/Admin Assistant

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[choldnick@poga.ca](mailto:choldnick@poga.ca)

**Payee List for SaskOats 2021-2022 Year**

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

**Directors**

**Honorariums**

Alan Butuk	\$ 500
Wade Hainstock	\$ 1,200
Chris Rundel	\$ 800
Jessica Slowski	\$ 200
Ambrely Ralph	\$ 400
<u>Elwood White</u>	<u>\$ 600</u>
<b>TOTAL</b>	<b>\$3,700</b>

**Out of Pocket**

Alan Butuk	\$ 270
Wade Hainstock	\$ 849
Chris Rundel	\$ 529
Jessica Slowski	\$ 31
Ambrely Ralph	\$ 259
<u>Elwood White</u>	<u>\$ 784</u>
<b>TOTAL</b>	<b>\$2,722</b>

**Research & Development (\$5,000.00 threshold)**

University of Saskatchewan	\$ 76,000
SK Variety Performance Group	\$ 14,630
South East Research Farm	\$ 11,655
East Central Farm	\$ 12,155
Northeast Agriculture Research Farm	\$ 29,425
Indian Head Agriculture Research Farm	\$ 11,655
Western Applied Research Corporation	\$ 7,770
Agriculture and Agri-Food Canada	\$ 7,250

**Extension/ Education (\$5,000.00 threshold)**

Agriculture in the Classroom	\$ 20,500
SaskCanola (Policy Development)	\$ 6,000

**Supplier Payments (\$5,000.00 threshold)**

<b>Baker Tilly (Auditor)</b>	<b>\$ 7,937</b>
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**Levy Central Fees**

Agricultural Council of Sask. Inc.	\$ 26,126
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**Market Development (\$5,000 threshold)**

R&D and Communications funded via POGA	\$304,412
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**SaskOats 2022-2023 Budget**

**Revenue**

Check-off levy (\$.50/tonne)	\$ 765,000
Check-off refunds @ 7%*	(\$53,550)
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	\$711,450
Interest Income	\$6,000
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	\$717,450
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**Expenses**

Board of Directors	\$6,000
Communications	\$35,375
Levy Administration Fee	\$23,428
Producer Meetings	\$11,545
Proportionate expenses of POGA	\$500,490
Research and Development Grants	\$110,200
General and Administrative (Audit, Legal, Elections, memberships, etc.)	\$13,150
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	\$700,188
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<b>Excess of revenues over expenses</b>	<b>\$ 17,262</b>

- ***In 2021-2022 SaskOats Refund Requests were 6.4% of dollars collected and 4.2% of the total number of producers paying the levy.***