



ANNUAL REPORT

2020/2021

INTRODUCTION

This annual report details the 9th year of the Alberta Oat Development Commission (AOGC) operations.

Shawna Mathieson is now in her 11th 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. Shawna was on maternity leave until April 2021, during this time, Dawn Popescul stepped in as the Interim Executive Director. 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 Alberta Oat Growers Commission (AOGC), the Saskatchewan Oat Development Commission (SaskOats) 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 for oats and influences policy which directly impacts the Western Canadian oat grower.*

POGA is funded by the three provincial oat entities from Alberta, Saskatchewan, and Manitoba. 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 the POGA.

The Executive Director, guided by the board of directors, manages the administrative and policy duties of the provincial organizations and the overall approval/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 organization.

EDUCATION/AWARENESS

One priority of AOGC 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 oat industry organizations, and is available on the POGA website: www.poga.ca. This newsletter provides valuable information on oats, research and issues that impact oat producers.

AOGC also hosts an Annual General Meeting (AGM) each year to inform Alberta oat growers regarding how their check-off funds are being spent, hear from industry on the latest information and vote on important issues. The AGM is usually held the day prior to FarmTech in Edmonton, AB each year. Due to COVID-19 restrictions in 2020, AOGC held their annual general meeting virtually on April 8.

AOGC 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 Alberta. The 2020 meeting was to be held in Banff, AB, but due to COVID-19, POGA made the difficult decision to cancel the meeting. A smaller 2020 AGM was held virtually in early November. The 2021 POGA annual meeting was held in Banff with over 125 people in attendance in addition to those who participated virtually.

As a partner of POGA, the AOGC board of directors have been active ambassadors for the oat milling and processing side of the industry and have made key contributions to promoting and advancing the oat industry.

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

- *“Canadian Agronomist.ca”* – this website works to fill the gap between researchers, agronomists and producers, by implementing electronic technology/knowledge transfer utilizing email newsletters and posting of research summaries.
- *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 is designed to educate the public on farming and agricultural messaging. It is Canadian focused and includes information from nutritionists and dieticians to connect urbanites with where their food is coming from.

POLICY

AOGC strives to maintain an ongoing dialogue with the Alberta government. AOGC continues to sponsor and participate in “Chops and Crops” in Edmonton, each fall, to discuss current issues affecting Alberta oat growers with members of the Government of Alberta. This annual event encourages collaboration among various Alberta commodity groups, government officials and elected members. Due to COVID, the in-person event was cancelled in 2020, however the group met virtually with the Alberta Minister of Agriculture to maintain this important dialogue. After the year end, the event was held in-person again in November 2021.

In March 2021, AOGC, through POGA, held virtual meetings with over 60 key Ottawa elected and non-elected officials to discuss a variety of important issues including: the ongoing transportation issues that continue to challenge the agriculture industry in Canada; matching funding for domestic programs; marketing; crop diversity; innovation; changes to the Business Risk Programs, specifically AgriStability; food policy; the Canadian Grain Commission surplus; and market access through trade negotiations with international buyers. This is the 7th year of these important meetings.

Continued work on building key relationships, such as the Ottawa trip, has been critical to the AOGC/POGA position within industry and government agencies. POGA has been requested to attend various government meetings to provide input, often where only a 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.

AOGC, 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 market access, research, carbon tax, rail transportation, Business Risk Management solutions, and a review of the Grain Act.

AOGC/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. Additionally, AOGC attends meetings led by Agriculture and Agri-Food Canada (AAFC) Market Access Secretariat.

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 eleven years. While 2021 looked different due to COVID restrictions, Shawna Mathieson was still able to present to the industry virtually at the NAMA conference and at other virtual industry events.

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.

RESEARCH PROJECTS

*All previous and current research projects can be found on the POGA website at www.poga.ca under **Projects and Research**. 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)

AOGC, and all Prairie oat growers, benefit from SaskOats' multi-year commitment with 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. AOGC is grateful that the Saskatchewan Agriculture Development Fund (ADF), WGRF and other industry partners are also providing support for this very important program.

AOGC/POGA - Oat Advantage

Support continues for this private breeding program in Saskatoon. The original funding supported four main goals:

- 1) Improved oat line quality selection for low hull content.
- 2) Improved oat line selection for variation of groat surface borne trichomes (hairs).
- 3) Improved seed purity in early generation harvest.
- 4) Steady flow of breeding material through winter nursery utilization.

Progress was made on all project objectives, including realizing better assurance of oat lines with plump groats and an ability to focus on oat lines that portion growing season resources into meaningful yield; determining, and being able to act on, the variability in oat groat trichome content which can lead to new oat varieties with improved properties for grain handlers; and harvesting small oat bundles with nearly 100% seed purity.

A new contract was signed at the beginning of the 2021-2022 year which includes two main goals:

- 1) A 10% higher bushel weight, or an average of 55lb oats, to maximize oat storage, trucking and the harvesting operation.
- 2) Low hull content: High bushel weight goes hand-in-hand with low hull percentage.

The goal of this project is a 17% oat hull or an 83% groat on average. This project also has two additional, lower priority, goals: increasing protein from 20% to 21% on average, and increasing harvest durability by measuring and increasing stem strength and shattering resistance in oats.

AOGC/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. Organic oat markets continue to grow and producers require improved cultivars to respond to their specific production system. POGA has committed funding for five years. This project is also co-funded by industry and the Canadian Agricultural Partnership (CAP) – Organic Science Cluster 3.

AOGC/POGA – Prairie Oat Breeding Consortium (POBC)

The POBC is an oat breeding collaboration project with industry and the Government of Canada under the Canadian Agricultural Partnership (CAP) – AgriScience Program. It is designed to fund 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 AIP were reduced to a maximum of 50% funding. While this is a large reduction in funding, AAFC did agree to maintain 50% of the original budget request therefore, allowing this project to continue. The POBC members, including POGA, will now contribute 37.5% of the total project budget through March 31, 2023.

General Research:

AOGC/POGA – Alberta Variety Trial - led by Gateway Research Organization

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 outperform Morgan oats in Alberta to meet miller demands for higher beta-glucan. 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.

AOGC/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. Three of the objectives in this study are:

- identifying optimal agronomic practices to achieve high and stable grain yield and quality,
- enhancing oat breeding procedures with genomic selection,
- improving the ability to deploy rust resistance genes in existing cultivars.

AOGC/POGA – “Coordinated Monitoring of Field Crop Insect Pests in the Prairie Ecosystem” - led by Dr. Meghan Vankosky at AAFC Saskatoon

This monitoring network is a collaborative project, monitoring insect pests across the Prairie provinces and the BC Peace Region. Data is released weekly when insects pose the greatest threat to crop yield. This project is co-funded with the WGRF and other commissions.

AOGC/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.

AOGC/POGA – “Economic Value of Diversified Cropping Systems” - led by Elwin Smith, at the University of Lethbridge

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 the variability of net return, associated with cropping systems of different rotation length and diversity of crops. This project is co-funded with WGRF and will be completed in 2022.

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

The goal 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 is a two-year project that is co-funded with ADF and will be completed in 2022.

AOGC/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 co-funded with the AAFC AgriScience Program and will be completed in 2022.

AOGC/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 will be completed in 2023.

AOGC/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 and will be completed in 2022.

AOGC/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 2025.

AOGC/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.

AOGC/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 will be completed in 2022.

AOGC/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 verses monocrop scenarios. This project is funded with WGRF and will be completed in 2025.

Product Development:

AOGC/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

The rising rate of milk allergies and lactose intolerance is partially responsible for the increasing demand for plant-based milk alternatives. This trend is gaining a greater momentum by consumers looking for plant-based healthy options that include protein and fibre. Unlike other potential plant-based sources, oats are a good source of both protein and soluble fibre.

Another goal is to further develop the oat milk into a functional beverage for management of type 2 diabetes. Developing nutritionally enhanced oat milk products is essential to ensure competitive strength of the Canadian food industry in the global market. This project is co-funded with Results Driven Agriculture Research (RDAR) and will be completed in 2023.

Feed:

AOGC/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 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 supports this objective and aims to identify the best oat variety or type of oat grain with the highest Feed Milk Value (FMV) for dairy cattle to improve the FMV of oats through processing, and to find the maximum or optimum level of oats in high production lactation dairy cow diets thus, ideally, promoting more oats in dairy rations. The project is co-funded by the Natural Sciences and Engineering Research Council of Canada (NSERC) Collaborative Research and Development (CRD) grant and will be completed in 2022.

MARKET DEVELOPMENT PROJECTS

China/Japan

In 2017/2018 AOGC/POGA contracted Emerging Ag Inc. to work towards getting raw Canadian oats into China. POGA members met with government officials to discuss this issue including representatives from the Canadian Food Inspection Agency and AAFC. POGA also participated in two missions to China, pre-COVID, with the Minister of Agriculture and Agri-Food Canada.

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. Due to political challenges with China, this project has been put on hold with the funds being

redirected to increase exports of Canadian oats to Japan as approved by the project co-funder, AAFC's AgriMarketing Program (AMP).

Japan is the 4th largest importer of oats in the world and a large middle class. Research shows that Japanese consumers are looking for nutritious and healthy food but also products that are convenient to prepare and consume. Food consumption is mainly influenced by the quick aging demographic, the bigger spending power of young people, and the busy work-oriented lifestyle. The ongoing re-evaluation of health functions of cereals, especially whole grains, is expected to encourage oat consumption.

The Japanese marketing project has been a huge success reaching an average of over 1.45 million Japanese consumers each month since the project began. Canadian oat imports continue to grow, and if the current trends continue Canadian oats into Japan could surpass 100 MT (which would be a 50% increase from 2020). Canada continues to lead in the raw oat market.

Mexico

AOGC/POGA received funding through AMP starting in the 2015-2016 year to advance the Canadian oat market in Mexico. Since the project began, Canada has seen the largest four oat export years to Mexico in history. In June 2019, POGA representatives met with the largest oat miller in Mexico (representing over 90% of the market), as well as with Mexican government officials to continue this mission. Since that time, due to Covid travel restrictions, our communications have continued electronically with great success. The Facebook and oat recipe campaigns have also been a huge success, reaching tens of thousands of Mexicans daily. Due to the project's success, POGA secured an additional two years of AMP funding until 2023.

Canada

AOGC/POGA, for the first time, received funding in 2020 to promote oats as a healthy ingredient to Canadian consumers. This was a huge success for POGA to have the ability to expand markets both internationally and domestically. The "Oats Everyday" website and Facebook page, showcasing oat recipes and the benefits of eating oats, reached many Canadian consumers right from the start. In 2021 POGA, once again, received AAFC AgriMarketing funding to promote this healthy, local grain right here in Canada so the work continues!

Keep it Clean – Cereals Canada

AOGC/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 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

AOGC/POGA continues to look for new market potentials for Canadian oat exports and has done some work to explore India as an opportunity. However, POGA has been informed that until the requirement for methyl bromide is resolved in pulses it is unlikely to be resolved in other crops like oats.

SaskOats, MOGA and the AOGC have worked with their respective provincial governments to determine tariff and non-tariff barriers for oats into the Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP) countries, for further diversifying the Canadian oat export market.

SUMMARY

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

AOGC 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

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AOGC 2021-2022 Budget

Revenue

Check-off levy (\$.50/tonne)	\$ 85,513
Check-off refunds @ 6 %	(\$5,130)
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Total Revenue	\$80,383
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Expenses

Board of Directors	\$3,500
Communications	\$ 2,500
Levy Administration Fee	\$ 14,163
Producer Meetings	\$7,850
Proportionate expenses of POGA	\$122,651
Research and Development Grants	\$2,000
General and Administrative (Audit, Legal, Elections, memberships, etc.)	\$ 2,820
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Total Expenses	\$155,484
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Excess of revenues over expenses **(\$75,101)**