



NOVEMBER 2020

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## Marketing Canadian Oats to Canadians - New POGA Project

POGA is pleased to announce their latest project to expand consumption of oats in Canada. This campaign is similar to the other POGA marketing projects in that it uses social media as a vehicle to reach out to a country's consumer base to educate people about the health-related qualities of oats and the many delicious ways they can be incorporated into daily meal plans and snacks.

Jenneth Johanson, POGA President, affirms, "Our longer-running Mexico campaign has proven just how valuable these projects are to Canadian producers. They encourage people to expand the way they use oats in meal preparation. More importantly, they highlight the premium quality of Canadian oats and the sustainable farming practices of Canadian producers."

"We are very excited to share this message right here at home in Canada! With the project's local focus, POGA encourages members to engage directly with the campaign by liking and following the *Oats Everyday* social media accounts and sharing the content within their networks," urges Johanson.

The *Oats Everyday* website is being used for this Canadian audience campaign, but the main sites of active engagement are the new Facebook page (@OatsEverydayCA), YouTube channel (*Oats Everyday*), Instagram (@Oats\_Everyday) and Pinterest (@Oats\_Everyday) accounts. Canadian official languages are being incorporated and Facebook recipe videos have already been offered in both French and English.

A recipe will be shared to the Facebook page every week. The recipes will be shared in both English and French.

The following provides information as to how the campaign is doing in its first month of activity. To help the reader interpret results:

- **Engagement:** users have seen the campaign and taken action across the social media channels (liked comments, viewed the website, watched the video, etc.).
- **Reach:** the number of people who potentially could have seen a piece of campaign social media.
- **Impressions:** the reach + the number of times a post appeared in a user's timeline.

The campaign launched by sharing the *Oat Tabbouleh Salad* recipe. This post **reached over 32,000 people** and garnered over **3,000 engagements**. *Chocolate Granola Banana Pops* achieved over **70,300 in reach** and over **2,000 engagements**. *Monday to Friday Overnight Oats* garnered over **68,000 in reach** and over **1,800 engagements**. The final recipe of the month was the *Chickpea and Oat Salad*. This recipe garnered over **34,000 in reach** and over **1,100 engagements**.

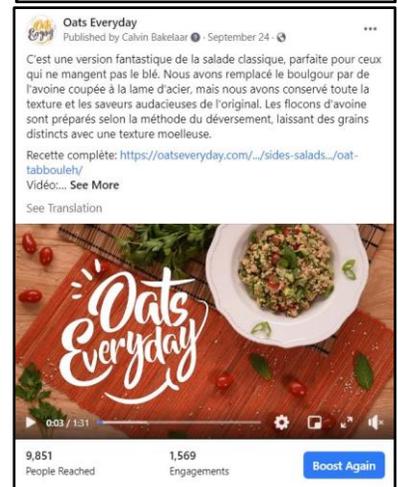
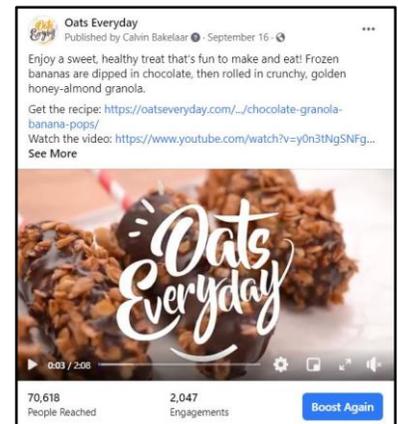
Two French recipe videos were shared in September—*Oat Tabbouleh Salad* and *Chocolate Granola Banana Pops* (more recipes will be translated and shared in upcoming months). These two recipe videos combined achieved over **22,600 in reach** and **2,700 engagements**.

The *Oats Everyday* website received great numbers for its first month: over **25,000 sessions**, over **20,000 users** and over **39,000 page views**. Website updates will take place over the next two months to include French translations and improve the recipe search function.

The project team will continue to refine the outreach approach to both English and French audiences to achieve maximum reach and engagements.

POGA invites producers to actively engage in this exciting Canadian marketing campaign. Visit and join the various campaign platforms. View (and try out) some of the delectable recipes. Most importantly, share each offering with friends and family. But hurry—the project ends 2021 March due to funding program guidelines. This is a POGA project that oat growers can actively participate in and contribute to its success!

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



## Advancements Made on Nutritious Oat Milk!® Final Report—Oat Beverage Development

Dr. Lingyun Chen completed the final report for her three-year project entitled *Development of an Oat-Based Beverage Rich in Dietary Fiber and Protein*, first introduced in the July, 2018 Oat Scoop. Chen's final and summary reports can be accessed at [poga.ca](http://poga.ca)—2020 Research Results.

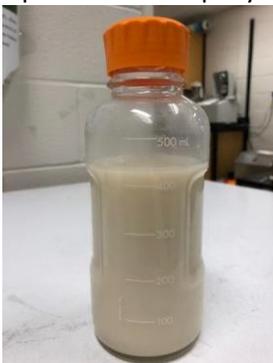
It is becoming increasingly apparent that oat milk's nutritional, and functional properties, such as good foaming qualities for specialty coffee beverages, are creating a lot of consumer attention these days (for more on this topic see the article *Oat Milk on the Menu* in this issue). The timing of the completion of this research project couldn't have happened at a more appropriate time, considering the market's current interest.

More and more consumers are seeking products to address concerns such as milk allergies and lactose intolerance, as well as availability of plant-based/vegan, high-protein/fiber and low lipid<sup>1</sup> food choices. <sup>1</sup>*Lipids are compounds such as fats, oils and waxes.* Oats fill that bill, and more.

Oats are also a good source of vitamins, phytochemicals<sup>2</sup>, and the well-known, healthful beta(β)-glucan. Oat contains the globulin protein *avenalin* as the major protein component and is considered to be more nutritious than most cereals. <sup>2</sup>*Phytochemicals are compounds that contribute to a plant's colour, taste and smell, and which are often responsible for other health benefits (for an example of only ONE healthy phytochemical in oats—avenanthramides—see the next article in this issue: 'Exactly WHAT Makes Oats So Good for You?')*

This project approached beverage development from two angles. 1) Develop a ready-to-drink, oat-protein-enriched beverage and, 2) develop a nutritious, oat-based beverage that possesses the necessary sensory and nutritional properties to improve the quality of life of patients who are undergoing radiation therapy.

Dr. Chen shares, "The drink prototypes possess acceptable smell, viscosity and texture, and the storage stability tests suggest that the drink prototypes have a shelf-life of 6-12 months over refrigerator storage. After this time, minor sedimentation was observed, but the precipitates were rapidly dispersed after shaking."



After 6 months



After 12 months

There were other advantages to Dr. Chen's samples. She continues, "The samples also tested at 2.18-2.20% protein content, which is significantly higher content than many plant-milk products in the market (1.0-1.5% protein). Oat fraction flours<sup>3</sup> significantly enhanced the β-glucan content (.81%) compared to samples prepared with whole oat flours and also oat beverages currently available in the market (.3%). This qualifies the product for the FDA-approved β-glucan health claim." <sup>3</sup>*See March 2018 and June 2020 Oat Scoop for more on Dr. Chen's fractionation projects.*

Chen states, "Further research to better understand the processing properties of fraction flours for oat milk production could assist process optimization to produce oat drink products with protein content comparable to dairy milk products (3.5-4.0%)."

Regarding a beverage targeted to patients undergoing radiation therapy, collaborator Dr. Wendy Wismer (Sensory and Consumer Scientist, Food & Nutritional Science Dept., University of Alberta) led this portion of the project. Wismer's team worked to formulate a beverage enhanced with nutrients known to be deficient in cancer patients. Of course, because many patients struggle to eat and keep food down, the products have to be appealing to them. To determine patients' acceptance, an oat-based powder that could be mixed in cold/hot water or milk was evaluated by patients, caregivers, staff and volunteers at the Cross Cancer Institute in Edmonton, AB. Fortified products for cancer patients need to be made in an inspected food production facility and this was beyond the scope of this project, so an enriched beverage was presented to healthy testers to compare and evaluate both the hot/cold powder beverage and a fortified one.

"Overall, both cold and hot oat-based beverages were liked by patients and healthy testers. The addition of protein, EPA (an omega-3 fatty acid) and vitamin D into the oat beverage product did not change healthy testers' acceptance compared to the unfortified product. Attributes that could be modified to improve acceptance of the fortified products are to lower sweetness of all products and ensure thickness of the low protein fortified product," says Wismer. *Note that healthy testers' responses to taste, texture, etc. can differ from cancer patient responses, so future surveys to evaluate patient acceptance of fortified products will be extremely helpful to food developers and manufacturers for products targeted to this specific market.*

Patients were also surveyed to ascertain what they knew about the health benefits of oats, how often they consumed oats, etc. Below are significant survey findings that indicate patients would be receptive to oat products targeting them specifically:

- 77% of patients consumed oat food products.
- 58% consumed them at least once per week.
- Over 90% agreed that oats are highly nutritious.
- ~60% agreed that oats provide health benefits related to heart disease and acknowledged the benefits of oat fiber and β-glucan.

- Most agreed it was easy to incorporate oats into their daily diets.

Dr. Wismer concludes, “Future developed products must be evaluated by consumer panels of cancer patients to confirm product and sensory attribute acceptance, which may differ from the healthy population. In addition, the evaluated oat-based beverages may be accepted by older adults and other populations with similar nutrient needs and eating challenges; future projects could include these populations in product evaluations.”

This project was partially funded by POGA and the Alberta Crop Industry Development Fund (ACIDF). *Note: As of June 6, 2018, ACIDF is no longer in operation.*

### **Exactly WHAT Makes Oats So Good for You?® Avenanthramides Research—Another Piece in the Puzzle**

Many Oat Scoop readers know about oat’s reputation as a healthy food choice. POGA supports research to help explain the science of oats and how research results might be applied to produce better varieties of oats. Dr. Xiao Qiu, a researcher at the Department of Food and Bioproduct Sciences at the University of Saskatchewan, has completed a four-year project entitled, *Investigation of Avenanthramides, a Type of New Healthy Compounds in Oats*, which takes us one step closer to a more thorough understanding of this health-packed grain. Although ‘Avenanthramides’ is quite a long string of letters, the Latin name for oats (*Avena sativa*) is a clue that oats claim these compounds as their own!

Dr. Qiu explains, “Avenanthramides are a unique group of polyphenolics,<sup>1</sup> mainly found in oat, with strong antioxidant and anti-inflammatory properties. However, information on the type and content, health-promoting properties and biosynthetic mechanisms of oat avenanthramides is limited.” <sup>1</sup>*Polyphenols are secondary metabolites in plants; secondary metabolites are compounds that are not directly involved in the normal growth, development or reproduction of an organism, but are compounds available to help protect or defend the organism when subjected to stresses.*

The three most abundant avenanthramides in Canadian oat cultivars (Avn-A, B and C) were first identified and quantified from several oat varieties. In vitro<sup>2</sup> antioxidant activities of these avenanthramides were then evaluated. <sup>2</sup>*In vitro activities occur outside the organism (i.e., in this case, in the lab).*

Dr. Qiu’s team first investigated Avn C’s ability to protect human skin fibroblast cells (*active, connective-tissue cells*) against extracellular stress and reduce cellular damage. They were able to demonstrate (for the first time) that pre-treatment of cells with Avn-C reduced hydrogen-peroxide-induced oxidative stress and decreased the levels of gene transcripts<sup>3</sup> which would encode pro-inflammatory cytokines<sup>4</sup>. <sup>3</sup>*A gene transcript is a copy of a gene’s DNA sequence to create an RNA molecule.* <sup>4</sup>*Pro-inflammatory cytokines are ‘signaling’ molecules that are responsible for inflammation response.* In simple and general terms, Avn-C could protect skin cells against

damage from lab-induced free radical and inflammation assaults.

To further their understanding of the biosynthesis of these compounds, Qiu’s team identified and characterized three different types of oat genes involved in the biosynthesis. The details are quite technical for an average reader, so for simplicity’s sake, POGA will share Dr. Qiu’s summary statement regarding the findings of this portion of the project: “These results have elucidated the molecular mechanisms for the complete biosynthesis of three major avenanthramides in oat and paved ways for genetic improvement of the nutritional trait through marker-assisting breeding in oat, and metabolic engineering of the biosynthetic pathway in heterologous systems to produce the nutritionally important compounds.” Simply stated, Qiu’s team was able to discover what is responsible, at a molecular level, for the production of these three major Avenanthramides, and knowing this will help future development of oat varieties that contain high levels of these healthy compounds.

For details of the research, interested readers can access Dr. Qiu’s summary and final reports at [poga.ca](http://poga.ca)—2018 Research Results.

This project is co-funded by POGA and the Agriculture Development Fund (ADF) of Saskatchewan under the Canadian Agricultural Partnership, a federal, provincial, territorial initiative.

### **Producers Invited to Participate in the Prairie Cover Crop Survey**

University of Manitoba’s Callum Morrison (PhD Student) and Dr. Yvonne Lawley (Professor, Dept. of Plant Science) are researching Canadian Prairie farmers’ use of cover crops. The results of the three-year project will provide context for Prairie farmers and assist their decision-making process. The goal is to provide accurate regional cover-cropping information and not to promote cover crop use. Annual reports will be compiled and made freely available to farmers.

211 producers from all three Prairie Provinces responded to last year’s survey. Participants do not need to have grown a cover crop in 2020 to take part. Morrison states, “In our 2019 survey, oats were both the most popular cash crop which proceeded a cover crop and the most common cover crop. We received respondents from as far north as Alberta’s Peace River Valley and as far south as the U.S. border. We welcome participants who are interested in using cover crops as well as those who grow cover crops.”

The Year 2 (2020) Survey will be live from October 1, 2020 through February 1, 2021.

Visit the project’s website page to learn more about the team and their work, and for a link to the survey: <https://sites.google.com/view/prairiecovercropsurvey/home> You can also find links on the survey project’s Facebook page: PrairieCoverCrop and on Morrison’s Twitter account: @CallumMorrison.

## The Quality of Milling Oats and the Effect of Pre-harvest Glyphosate<sup>◆</sup>

### Final Research Report

Dr. Chris Willenborg (Department of Plant Sciences, College of Agriculture and Bioresources, University of Saskatchewan) completed the final report for the three-year project *The Effect of Pre-Harvest Glyphosate on the Quality of Milling Oats*. Co-investigators for the project include Dr. Nancy Ames (Agriculture and Agri-Food Canada) and Eric Johnson (Department of Plant Sciences, College of Agriculture and Bioresources, University of Saskatchewan).

Up until now, there has been no public research on the effect of pre-harvest glyphosate on the milling quality of oats and oat seed yield.

This project set out to investigate three experiments: 1) The effect of timing of pre-harvest glyphosate on oat yield, and seed physical and functional qualities; 2) the interaction of cultural practices with pre-harvest glyphosate on seed physical and functional qualities; and 3) the potential for cultural and post-emergence weed management of perennial weeds in oat.

Dr. Nancy Ames conducted the oat quality tests.

Experiment 1 (desiccant application timing) conclusions indicate that the timing threshold for glyphosate as a dry-down agent is optimal when oats are between 30-40% seed moisture content (SMC) and does not have substantially negative effects on crop yield or quality characteristics. In his report, Dr. Willenborg states, "Applying glyphosate or swathing at or above 50% SMC can reduce the thousand kernel weight (TKW) of oat by as much as 14 grams. This in turn has negative effects on seed quality and therefore end use capabilities. When treatments were swathed at or above 60%, there is a risk that beta-glucan levels can drop below 3%, and the percentage groat will decline, which ultimately impacts milling yield and increases the amount of wastage during the milling process." The negative quality effects are similar to early frost damage. Annual weather conditions may also play a major role in crop quality overall.

Experiment 2 (agronomic and harvest management practices) conclusions indicate that oat cultivar choice and harvest method had less impact than seeding rate. The report states, "Increasing seeding rates resulted in a reduction in SMC at harvest, lower TKW, and softer groats. Using glyphosate as a harvest method has no more of a negative impact than swathing on oat yield or seed quality, regardless of seeding rate or cultivar used."

Experiment 3 (cultural practices and post-emergence weed management) conclusions from the report: "In 2017, florasulam + clopyralid + MCPA herbicide treatments resulted in lower weed dockage and weed seed yield than the other herbicide treatments. The effect of the treatment factors from the 2016 experiment indicated that pre-harvest glyphosate was the only treatment that was effective in reducing dandelion

densities in the spring of 2017. Both pre-harvest glyphosate and post-emergence herbicides applied in 2017 had an impact on dandelion populations in 2018. However, it is plausible that pre-harvest glyphosate had a greater impact on perennial weed control than in-season herbicides used. Dandelion populations were generally higher when a post-emergent herbicide was used alone. However, when it was combined with pre-harvest glyphosate, dandelion populations fell below 1 plant/m<sup>2</sup>." This suggests that annual weather conditions and/or treatment combinations played a role in the efficacy of the products used in this experiment.

Dr. Willenborg concludes, "The research showed that glyphosate, when used according to label recommendations (seed moisture content below 30%), poses no risk to maximum residue levels. However, if seed moisture content is above 40% residue levels can become problematic. It is thus imperative that growers do not stray from label recommendations when applying glyphosate as a pre-harvest in oats. Our results show that when applied correctly, glyphosate should not exceed residue levels demanded by the agriculture industry. However, if the industry demands 'zero' as the maximum residue limit, growers will not be able to meet this standard using glyphosate as a pre-harvest product."

Interested readers can access Dr. Willenborg's full report at [poga.ca](http://poga.ca)—2019 Research Results.

This project was supported and funded by the Saskatchewan Oat Development Commission (SaskOats) and the Agriculture Development Fund (ADF) of Saskatchewan under the Canadian Agricultural Partnership, a federal, provincial, territorial initiative, and in-kind service contributions were provided by Grain Millers Inc.

## **Producer Consent Form**

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

Oat Scoop titles marked <sup>◆</sup> indicate articles written by Pam Yule, Right Angle Business Services  
[rtangle@sasktel.net](mailto:rtangle@sasktel.net)

## Marketing Canadian Oats around the World<sup>®</sup> Mexico and Japan Projects Update

### Mexico Project

Oat Scoop readers have read many articles about the ongoing Mexico marketing project. As we all know, recent world events have changed the way organizations do business and the annual Mexico mission is no exception.

In past years, POGA representatives have travelled to Mexico to meet with Canadian Embassy representatives, the Federación Mexicana de Diabetes (FMD) (Mexican Diabetes Association), Mexican oat millers, and food bloggers/recipe creators and others involved in the food industry there.

This year, because of travel restrictions, POGA took full advantage of technology to stay involved in the activities they initiated in past years. Instead of holding the sixth annual Oat Recipe Contest (a part of POGA's Avena Canadiense project) in person, a virtual awards ceremony was hosted on Zoom.

Among the Zoom participants were Canada's Ambassador to Mexico—H.E. Graeme C. Clark and POGA President—Jenneth Johanson. The event was made available for viewing for almost three months after the ceremony and during that time close to 20,000 people watched the broadcast.

A recipe booklet which includes recipes from the contest is being developed and will be available for download from the Avena Canadiense website (avenacanada.com). POGA continues to foster their relationship with the Federación Mexicana de Diabetes, who continue to be actively involved in this project.

The following provides some specifics as to how the online Avena Canadiense campaign performed for the month of 2020 September:

- **Reach** refers to the number of people who potentially could have seen a piece of campaign social media—**3.3 million in reach**.
- **Impressions** refer to the reach figure plus the number of times a post appeared in a user's timeline—**3.5 million impressions**.
- There have been over **128,000 consumptions (clicks)** and over **318,600 followers** on the Facebook page.
- **Engagement** refers to users who have seen the campaign and taken action across the social media channels (liked comments, viewed the website, watched the video, etc.).

Here are several examples of engagements for specific posts added in 2020 September:

- ✓ A new recipe video from Mexican food blogger Karla Hernandez (see next column for picture) garnered over **335,486 people reached** and over **12,800 engagements**.
- ✓ A new recipe video from Mexican food blogger Nayeli Reyes **reached 113,868 people** and achieved over **3,055 engagements**.

A new homepage was launched on the Avena Canadiense website aimed to improve users' ability to explore the site and find content; numbers have increased as a result.

The project will be ending in 2021 March, but views have reached almost 93 million (which is double the original target of 45 million). Clearly Mexican residents are happy to create and discover recipes that contain healthy Canadian oats!

### Japan Project

2020 September finds the Kanadanootsumugi Facebook campaign project in its third month and it has already attained **over 1.1 million in reach and impressions** and **over 700 engagements** in September alone.

An Oatmeal Crepe recipe **reached over 10,400 people** and garnered **over 4,000 engagements**. A post to celebrate the day of health in Japan (Keiro no Hi) focused on using oats as a nutritious alternative to more traditional staples (noodles, rice or milk). This post **reached over 8,000 people** and reaped **3,500 engagements**.

The kanadanootsumugi.com website drew over **395 users** and **456 page views**. A new and original recipe and blog from a chef in Japan will be posted to the website and Facebook page in 2020 October to entice even more activity.

The campaign is off to a great start!

These projects are supported by the Prairie Oat Growers Association (POGA) and funded by the AgriMarketing Program through the Canadian Agricultural Partnership, a federal, provincial, territorial initiative.



## Financial Consequences of Diversified Cropping Systems vs Short Crop Rotations Does Short-Term Gain Lead to Long-Term Pain?

At times, it is tempting to consider financial outcomes in annual rather than multi-year increments. Farming is a great example, because a single year's activities are well-defined and inputs and efforts for that year result in an entire year's worth of profits. To keep annual cash flows healthy, producers have to juggle a lot of factors and a major consideration is the projected sales price of any given crop.

However, if producers were presented with scientific, multi-year and multi-growing-region models that prove explicit, long-term gains when using a diversified system to maintain productivity and profitability—would that help simplify and ease some of the stress of producers' annual planning?

Dr. Elwin Smith, Adjunct Professor and Dr. Danny LeRoy, Professor (Department of Economics, University of Lethbridge) are the Principal Investigators for the research project entitled *Economic Value of Diversified Cropping Systems*. The four-year project runs from 2018/19 through 2021/22 and eight collaborators from Universities of Lethbridge, Alberta, Manitoba; AAFC Lethbridge and Lacombe; and Alberta Agriculture and Forestry are working with Smith to produce research results that compare productivity and profitability of two cropping systems:

- 1) Short crop rotations, where annual crop prices and resulting profit are often the major consideration but can risk future growing conditions on the farm and long-term profits.
- 2) Diversified crop systems, which take into consideration multi-year productivity; farm-environment health (reduced plant disease, weed pressure from herbicide resistance and insect damage); and lower overall input costs.

In recent years, typically high-Canadian-production acres of crops are: canola, pulse, soybean and corn. Smith states, "These crop choices reflect the current higher net returns from these crops, at least in the short term. Until recently, few long-term costs associated with short crop rotations and frequent planting of one or two crops were observed by producers. However, there is accumulating evidence that plant diseases (such as blackleg (*Leptosphaeria maculans*) and club root (*Plasmodiophora brassicae*) in canola, the root disease *Aphanomyces euteiches* in pea and lentil, and leaf diseases on cereals such as barley) increase with short rotations. The long-term productivity and profitability of these crops and rotations is reduced with increased disease levels. Weeds, diseases and insect pests (all referred to as 'pests' in this study) quickly adapt through intensive selection pressure or environmental conditions ideal for the 'pest' when constantly using the same control chemicals, cultural practices and cropping system. Production costs will continue to increase if a more integrated method of controlling pests (including more diverse crop rotations)

is not adopted by producers. To be competitive and profitable, producers need to know: (1) the profitability of different cropping systems, including diversified crop rotations and pest control practices, (2) the benefit of diversified cropping systems in preventing a decline in long-term productivity and profitability, and (3) the business risk associated with different cropping systems."

To further explain Smith's list above, the study presents three objectives:

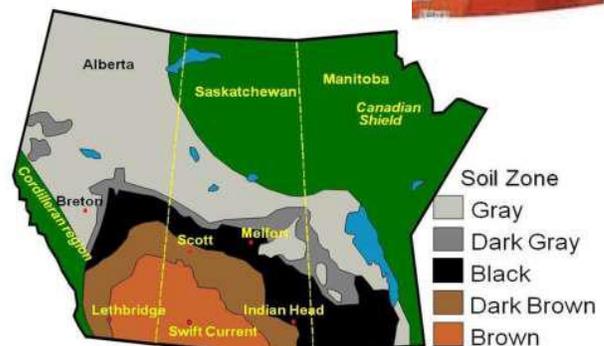
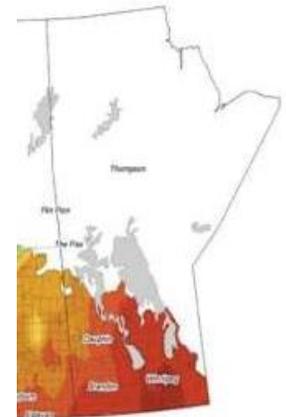
- 1) To determine the net return and variability of net return associated with cropping systems of different rotation length and diversity of crops. The variability of net return (risk) will be considered in the evaluation of production systems. The analyses will be for each of three ecosystem regions in the Canadian Prairies.
- 2) To determine the marginal user costs of the 'pests' associated with reduced diversity in cropping systems; these marginal user costs represent a proxy for the expected long-term benefits to producers from greater crop diversification.
- 3) To determine the degree to which participation in business risk management (BRM) programs (crop insurance, AgriStability) affect the long-term economics of cropping systems (i.e., potentially mask the negative impacts of reduced diversity).

The three ecosystem regions and the associated crop production are shown in the maps below.

**Southern Manitoba:** corn and soybean acres increasing, but canola remains an important crop.

**Black and Dark Gray soil zones:** canola, field peas and barley (malt and feed) are important.

**Brown and Dark Brown soil zones:** pulse crops (peas and lentils) often grown in wheat-based systems (hard red spring and durum).



The research team has completed Years One and Two of the project. In Year One, they: a) began to develop a model for the Black-Gray soil zones; b) specified crop rotations, developed cropping budgets, and sourced agronomic relationships to incorporate information related to pests and productivity, and c) developed the model framework for the long-term costs and benefits

analysis. In Year Two, the team: a) completed model development for the Black-Gray soil zones; b) developed a model for the southern Manitoba region, specified crop rotations, developed cropping budgets and sourced agronomic relationships related to pests and productivity and, c) analyzed the Black soil zone long-term costs and benefits analysis.

The Status Report provides progress on the project. Highlights include:

- Cropping data were gathered to develop representative farms and crop budgets to be used in the analysis.
- Crops included: wheat, canola, flax, barley, oats, soybean, corn, lentil, field pea, and forage (note there may be some crop differences in each region (e.g., corn and soybean in Manitoba only)).
- In addition to including disease influence on crop yield in the model, crop insurance data of yields by cropping sequence were analyzed to determine likely sequencing effects on yield.
- An element of uncertainty was incorporated into models to account for the variability that can occur in crop production.
- A model framework (similar to soil quality evaluation) was developed, incorporating uncertainty of disease and yield impact of disease (input from plant and crop disease pathologists will be included here).
- An optional BRM program is being incorporated into the models to determine the influence of these programs on cropping systems.

POGA will continue to update producers as status and final reports are received. To read the entire status report, go to [poga.ca](http://poga.ca)—2020 Research Results.

This project is co-funded by: Alberta Pulse Growers Commission, Alberta Wheat Commission, Barley and Malting Barley Research Institute, Manitoba Pulse & Soybean Growers, Prairie Oat Growers Association, Saskatchewan Wheat Development Commission, and Western Grains Research Foundation.

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## Oat Milk on the Menu... ...here and abroad!

Oat beverage (also referred to as oat milk) is creating quite a stir at coffee shops, in the news, and in research and development projects (see the article in this issue—*Advancements Made on Nutritious Oat Milk!*—for more information about Dr. Lingyun Chen's oat milk beverage research project).

Starbucks.ca released a press announcement on July 23, 2020 that they would be launching a non-dairy oat beverage in fall, 2020. This will be the fourth non-dairy option offered at Starbucks to date and they praise the oat beverage for its “mild flavour and velvety foam.” The beverage is described as, “non-GMO, made without preservatives, artificial flavours or colour, and is made with oats sourced from Canada.” Earlier, Starbucks had already launched oat milk in USA and European locations.

On August 25, 2020, Starbucks.ca also introduced its first fall-season, flavoured coffee made with the newly-introduced oat beverage: the Apple Oat Flat White. This beverage blends Starbucks signature espresso, steamed oat beverage and roasted apple syrup, and is finished with a clove sugar topping.

Starbucks oat milk launch was covered by other media sources, such as VegNews: August 27, 2020 article, *Starbucks Launches Vegan Oat Milk Across Canada*. VegNews describe themselves as, “the largest vegan media brand in the world” and inform their subscribers via print, digital and social media platforms.

Many specialty coffee shops are offering oat milk options. There are also ‘special edition’ oat milks—one we found was developed specifically for baristas. Vancouver-based Earth's Own created Barista Edition Oat Milk, which is offered in stores and online. They developed this (Canadian oat-sourced) product to have superior foaming and steaming qualities and a creamy consistency.

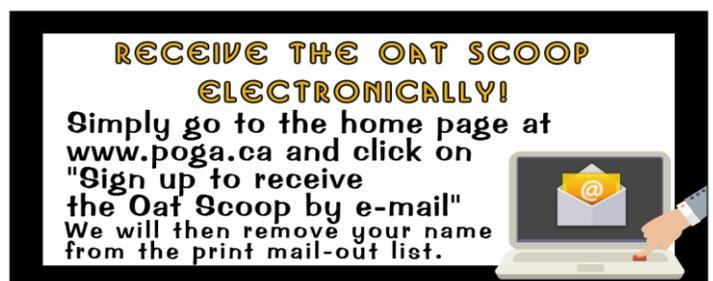
Where else is oat milk featured as an ingredient? Forbes.com ran a story on August 31, 2020, *Chloe's Pops Is Betting On Oatmilk*. Chloe's (based in New York City) creates various frozen ‘pops’ and soft-serve fruit. They launched three pops flavours made with oat milk this year (based on oat milk's attribute to combine well with other flavours and not overpower them): Raspberry Chip, Mint Chip and Salted Caramel. Apparently the best-seller of that group is Raspberry Chip.

The Forbes article also speaks to oat milk's escalating popularity. Readers are encouraged to go to [forbes.com](http://forbes.com) to read the entire article.

A final example of an exciting way oat milk is being used was published in an article on FoodIngredientsFirst.com. James Cadbury (yes, James is a descendant of that famous Cadbury chocolate company founder) has created an oat-milk chocolate for his new HiP (Happiness in Plants) product line. FoodIngredientsFirst describes itself as: “the leading international publisher on food ingredients and food product development.” For the full story, search for their news article *Dairy-free: Cadbury descendant creates oat milk chocolate range Happiness in Plants*.

Many other shops and food processors are also using oat milk and it appears that we don't have to look too hard to find oat milk and other food made with it. So, there's no reason not to get out there and taste-test some of those products made from oats POGA producers grow!

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## New POGA Director: Yves Lapointe Meet Your Neighbour!

**Yves Lapointe** is one of the recently elected MOGA and POGA board members. Yves and his wife Kelli operate a fourth-generation family farm with his parents, Gerald & Solange.

Yves and Kelli have been married for 11 years and have three sons: Nixon (10), Hunter (8) and Blake (5).

The family collectively farms 3850 acres along the Red River in Ste-



Yves, Kelli, Blake, Hunter and Nixon Lapointe

Agathe, located 15 minutes south of Winnipeg. Yves states, “We are very fortunate to have all of our acres in a five-mile radius.”

They grow a multitude of crops and usually run a 4-5 year crop rotation, typically growing oats, wheat, canola, soybeans and corn. When fall weather permits, they grow perennial crops like winter wheat and rye grass and this helps spread out harvest from late July to November. Yves is also a soybean and wheat seed grower for the local seed producer/retailer.

“Oats is an integral part of our rotation. It is commonly rotated after soybeans or canola, but as of late we’ve also been sowing oats after corn and having success with it. Oats is a very resilient crop and works well sourcing nutrients after a corn crop and because it tillers well, it’s a little more forgiving with a rougher, uneven corn stubble,” explains Yves.

Yves has been farming for 20 years—since his senior year of high school. In 2019 he felt it was time to contribute back to the farming community and decided to run for a board position with MOGA. No stranger to serving on boards, Yves has been the local arena board member and president (for 10+ years), church board member and served as chair on various hockey and snowmobile clubs.

Says Yves, “I was drawn to MOGA because of the smaller nature of the board and I feel that the oats market is on the upswing with increasing acres and more global interest right now. I welcome the opportunity to be involved in the future potential growth and development of oats.”

When time allows in the summer, Yves and his family enjoy camping. Their boys keep them very busy in the winter travelling for hockey games. Yves also plays in the local hockey league.

## Crown Rust Resistance Year 1 of 4 Progress Report

The Oat Scoop introduced Dr. Aaron Beattie’s project, *Development of markers linked to oat crown rust resistance to help breed improved oat varieties for Saskatchewan producers*, in the November 2019 Oat Scoop. Dr. Beattie (Crop Development Centre (CDC), University of Saskatchewan) and the project collaborators\* have wrapped up Year One (of Four) of the project and the full Progress Report can be accessed at [poga.ca](http://poga.ca)—2020 Research Results. \*Collaborators: Dr. Kirby Nilsen (Agriculture and Agri-food Canada (AAFC) - Brandon Research and Development Centre); Dr. Kathy Esvelt Klos (U.S. Department of Agriculture - Agricultural Research Services); Dr. Randy Kutcher (University of Saskatchewan - Plant Sciences); Curt McCartney (AAFC - Morden Research Development Centre); and, Dr. Jim Menzies (AAFC - Morden Research and Development Centre).

Interested readers may want to brush up on the technology being used in this project. POGA has published several Oat Scoop articles on these subjects. Please see *Leaf Blotch Research Project, 2017 November* for an explanation of QTL mapping and *Crown Rust Marker Research, 2018 October* for more information on molecular marker identification. For the project introduction article, please see *Crown Rust Resistance; Pinpointing the Responsible Genes, November 2019*.

Results from this project have the potential to affect growers (due to greater yield per acre and lower cost of production (reduce/eliminate fungicide use)) and millers (due to increased gains by maintaining grain plumpness and test weight).

Project objectives are to:

- evaluate crown rust reaction in bi-parental oat populations (in growth chambers and field nursery experiments) (*see note on alleles below for more information on why two-parent oat varieties are used*);
- perform Quantitative Trait Loci (QTL) mapping of crown rust resistance (using the phenotypic data collected in Objective 1); and
- convert the markers identified in Objective 2 to high-throughput markers for use in oat breeding programs to produce varieties with improved crown rust resistance at a faster pace.

According to Beattie, “The largest on-going threat to oat production in Canada (and worldwide) is the fungal pathogen *Puccinia coronata* which causes oat crown rust.” This disease causes yield losses and stem lodging. Resistant genes may defend a plant from the pathogen at the seedling stage but not be effective at the adult stage, and vice versa. Nearly 100 crown rust resistant genes, mainly seedling resistance genes, in oats have been identified and reported. However, the crown rust pathogen is quick to develop new races that are able to overcome this resistance in seedlings. Beattie states, “As such, gene pyramiding and use of adult plant resistance (APR) are considered viable methods to deal with this

issue. For example, the APR present in the Minnesota line MN841801 has been effective since the 1970s. 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 already uses known, resistant gene markers to incorporate and select for crown rust resistance in its breeding program as it is a more cost- and time-efficient method compared to the use of crown rust nurseries. The use of markers also allows for specific identification of multiple resistance genes present in lines. Beattie explains, “It is now possible to not only develop markers linked to oat crown rust genes, but also to understand their chromosome locations and, more importantly, the allelic (\*see note) relationships among the vast number of reported genes. Such information will allow oat breeders to understand which combinations of resistance genes can be pyramided together and test the effectiveness of such pyramids.” *\*Note: alleles are alternate versions of specific genes (one from each parent, a.k.a. bi-parental) in a chromosome location that are nearly identical (being slightly different, their interaction with the pathogen can vary).*

To start readers out on solid ground for this first-year progress report:

- gene mapping locates the position of a gene on a chromosome
- genotyping identifies an organism’s unique set of genes
- phenotyping identifies an organism’s observable characteristics, which can be influenced by genotype and/or the environment
- Pc## are specific crown rust resistance genes being studied in the project

Beattie states, “Good progress on the objectives was made in 2019-20. Phenotyping of populations segregating for Pc40 and Pc46 were accomplished; genotyping of populations segregating for Pc40, Pc46, Pc62 and Pc67 were done; and, markers linked to Pc98 were identified. New populations for mapping of Pc46 and Pc67 were created and are ready for phenotyping. Two adult-plant-resistance mapping populations were phenotyped in the field in 2019 and have been planted for a second year of phenotyping in 2020. Due to work being done on Pc50 by a U.S. group, the McCartney group has decided to instead focus on mapping Pc48.”

The project is supported by Western Grains Research Foundation (WGRF), the Prairie Oat Growers Association (POGA) and the Agriculture Development Fund (ADF) of Saskatchewan under the Canadian Agricultural Partnership, a federal, provincial, territorial initiative.

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## **New POGA Director: Ambrely Ralph** ♦ **Meet Your Neighbour!**

New SaskOats and POGA board member **Ambrely Ralph** lives and farms east of Arborfield, SK. She and husband Garrett farm with Garrett’s family—a multi-generational

farmer team which includes Garrett’s father, brother, uncle and great-uncle and their spouses.



*Ambrely, Garrett, Liam and Hazel Ralph*

The farm is situated in a very diverse cropping area (forages for seed production, oilseeds, pulses, grains, intercropping, honey production and alfalfa leafcutter bees, etc.). Ambrely grew up on a mixed grains/oilseeds and cattle farm south of Foam Lake. She shares, “Even though my family farm is only three hours away from this area, I really felt like it was Christmas morning when I moved here and saw all the different crops, farming practices and opportunities. It has been a steep learning curve but one that I truly appreciate.”

When it comes to oats in the farm rotation, Ambrely states: “Oats are a great fit on the family farm for cold, spring-weather tolerance and rotation flexibility. They also help ensure good agronomic practices and land sustainability. Profitability has improved over the last few years with the introduction of new varieties and markets. Morgan varieties were consistently used in our area, but new varieties are now being grown. We have found Triactors and Camden to be good performers.”

Their farming area has been experiencing wetter conditions and an increase in locational weather incidents (versus blanket weather conditions). Navigating those changes has become a major factor in managing acres and farming practices. The farm team addresses agronomic, marketing and logistic issues by intentionally working specific acres to deal with changing weather patterns instead of using a broad approach across the farm. “Every year brings a new challenge, but oats have been a crop that help us maintain some consistency and risk management,” says Ambrely.

Ambrely and Garrett also work in the agriculture inputs industry. Ambrely explains, “My off-farm work gives me an understanding and appreciation for that side of the business. This has fostered my appreciation of the value of team work and the importance of trusted relationships and business partners throughout the industry: financing, producer groups, manufacturing, input providers, consulting, marketing, research, etc.”

Ambrely’s parents were both active members in community and agricultural initiatives. She decided it was time to follow her role models’ example. She believes in

continuing education—learning from the experience of others in the industry and building community networks—with a focus on diversity across soil zones, farming practices, land management, agronomics and marketing.

She chose to represent producers via SaskOats and POGA because: “Past and current board members were very encouraging and I am grateful to be part of this forward-thinking group that focuses on sustainability of the industry, market place and producer families. They are very supportive and knowledgeable. Through them, I have gained the understanding and confidence to be part of a group working toward finding solutions and navigating all the challenges the farming community faces.”

Family time includes enjoying outdoor adventures in the Pasquia Hills area with children Liam (four) and Hazel (almost two). Ambrely is a member of a local daycare board and enjoys running and other physical fitness activities and workouts. Garrett is the deputy fire chief for the local volunteer fire department and enjoys hunting.

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## POGA Supports the International Oat Nursery<sup>®</sup>

In late 2019, POGA committed a one-time, one-year USD \$10,000.00 payment to the University of Minnesota (UMN) to support the International Oat Nursery. This decision was not made lightly by the POGA board of directors but came about because the three oat breeders from Western Canada, when asked by POGA, all stated that this nursery was important for their oat breeding programs. PepsiCo Quaker had been funding this nursery for many years and now, with grower and other industry support, the International Oat Nursery was able to continue in 2020 while longer-term funding was secured through the United States Department of Agriculture (USDA). The USDA has now agreed to administer the Nursery and provide long-term funding which is a real success for the entire oat industry!

POGA director Wade Hainstock represents POGA and Canadian oat producers on the Oat Global Consortium. Hainstock shares, “POGA has been previously involved with the International Oat Nursery as a non-voting member of Oat Global. Canadian oat breeders have been using germplasm from the Nursery for many years. POGA’s financial support, a first to this organization, is significant because now growers are financially contributing to this multi-national cooperative effort to benefit the Canadian oat breeding program and oat breeding systems around the world.”

Here’s a little more information and history for interested readers:

Established in 2014, Oat Global Consortium and the International Oat Nursery are managed by the University of Minnesota—in collaboration with and partially funded by participating research collaborators. The UMN details the Consortium’s mandate: “Oat Global goals are to coordinate global oat research, breeding and extension priorities and activities; facilitate communication across

the worldwide oat community; advocate for and secure funding to support precompetitive oat research, breeding and extension; and provide a platform for formation of public-private and public-public partnerships. Through Oat Global, the University manages a proactive program to collectively shape the development and deployment of promising research jointly prioritized by collaborators and to facilitate interaction among Oat Global collaborators and University faculty.”

The Consortium defines the International Oat Nursery as: “A collaborative effort among oat breeders from more than twenty research institutions worldwide who share the most productive oat breeding lines with each other, along with their scientific knowledge. Nursery breeders openly help each other develop new oat varieties that are resistant to diseases and environmental stresses, and ensure seed diversity to secure healthy harvests year after year. As the only global oat seed-sharing cooperative, the Nursery continues to improve the quality and productivity of oat crops around the world – with ongoing efforts to develop new programs, share innovative ideas and improve the viability of local crops worldwide.”

The Consortium, in partnership with US-based Oat Newsletter, also recently launched a new undertaking that will further their communication and extension goals: *Speaking of Oats...* The series launch text states: “This new community engagement series provides opportunity for oat producers, oat processors, oat researchers, and other oat lovers to hear from experts in the field, to engage with each other, and to build new professional relationships. *Speaking of Oats...* comprises virtual sessions, approximately one each month, that are part update or seminar and part community dialogue, each focused on a topic of interest to the oat community.”

Here is a list of some past and future events:

- **October 15 (10am Eastern): *PanOat: Why Does the World Need 30 Oat Genomes?*** Nick Tinker (ORDC/AAFC, Canada), Martin Mascher (IPK, Germany), and Jason Fiedler (USDA-ARS, USA).
- **November 19 (11am Eastern): *Oat Updates from the North American Millers’ Association and the Canadian National Millers Association.*** Dale Nellor (NAMA, USA) and Gord Harrison (CNMA, Canada)
- **December 17 (11am Eastern): *The International Oat Nursery.*** Stephen Harrison (LSU, USA), Mónica Mathias (INIA, Chile), and Liliana Wehrhahne (INTA, Argentina)
- **January 21 (11am Eastern): *The T3 Database and Applications to Oats.*** Jean-Luc Jannink (USDA-ARS, USA), Clay Birkett (USDA-ARS, USA), and David Waring (Cornell, USA)

Free, advanced registration is required for each *Speaking of Oats...* session. To stay informed about future sessions (and to see when registration opens for each event), head to the Oat Newsletter ([oatnews.org](http://oatnews.org)), click on the *Meetings* tab and choose *Speaking of Oats...* If you can’t attend the live online event, sessions will also be recorded and made public after the event.

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**Annual General Meeting  
Monday,  
January 25, 2021  
6:00 pm**

**Location:** The Edmonton Westin - Turner Valley Room -  
10135 100<sup>th</sup> St., Edmonton, AB

Times and agenda topics subject to change due to  
COVID-19—for updates check [poga.ca](http://poga.ca)

Please RSVP to [info@poga.ca](mailto:info@poga.ca) to ensure enough food is  
ordered. There is no charge for this event.

**\*Please note:** a 30-day notice for resolutions is required at the Alberta Oat Growers Commission’s Annual  
General Meeting. Please send any resolutions to [dpopescul@poga.ca](mailto:dpopescul@poga.ca) no later than 5pm Dec. 28, 2020.

**AGENDA**

- 6:00 pm Complimentary drink plus light meal
- 6:30 pm Welcome from the AOGC
- 6:40 pm AOGC Business Meeting\* including director  
election/acclamation. *Chair - Brad Boettger*
- 7:10 pm Top Oat Varieties for AB, Based on 5 Years  
of Trials. *Sandeep Nain, Gateway Research  
Organization*
- 7:30 pm Speaker - TBD
- 8:00 pm Oat Market Outlook. *Chris Newbergher,  
Grain Marketing Specialist, Stony Plain Seed  
Cleaning*
- 8:45 pm Adjourn



**Annual General Meeting  
Wednesday,  
February 10, 2021  
1:00 pm**

**Due to COVID-19 the AGM will be held virtually as  
part of the CropConnect AGM collaboration. Please  
visit [cropconnectconference.ca](http://cropconnectconference.ca) for updated  
information on registration and for the meeting link.  
Please email [info@poga.ca](mailto:info@poga.ca) for more information.**

Times and agenda topics subject to change; for updates visit [poga.ca](http://poga.ca)

**\*Please note:** a 30-day notice for resolutions is required at the Manitoba Oat Growers Association’s Annual  
General Meeting. Please send any resolutions to [dpopescul@poga.ca](mailto:dpopescul@poga.ca) no later than 5pm Jan. 10, 2021.

**AGENDA**

- 1:00 pm Welcome from Manitoba Oat Growers  
Association (MOGA). *Chair - Doyle Penner*
- 1:05 pm MOGA Annual Business Meeting\* - *Doyle  
Penner*
- 1:25 pm Oat Breeding for Western Canada: What’s  
New, Hot and Coming Soon with the New  
Oat Breeder. *Kirby Nilsen, Research  
Scientist, Brandon Research and  
Development Centre, Agriculture and Agri-  
Food Canada*
- 2:00 pm Adjourn



**Annual General Meeting  
Tuesday,  
January 12, 2021  
2:15 pm**

**Due to COVID-19 the AGM will be held virtually as  
part of the CropSphere 2021 AGM day. Please visit  
[cropsphere.com](http://cropsphere.com) for updated information on  
registration and to obtain the meeting link.  
Please email [info@poga.ca](mailto:info@poga.ca) for more information.**

Times and agenda topics subject to change; for updates visit [poga.ca](http://poga.ca)

**\*Please note:** As per prior years, a 30-day notice for resolutions is required at the Saskatchewan  
Oat Development Commission (SaskOats) General Meeting. Please send any resolutions to  
[dpopescul@poga.ca](mailto:dpopescul@poga.ca) no later than 5 pm Dec. 13, 2020.

**AGENDA**

- 2:15 pm Welcome from SaskOats. *Chair - Alan  
Butuk*
- 2:20 pm SaskOats Annual Business Meeting\* -  
*Alan Butuk*
- 2:35 pm Oat Opportunities: Markets and More.  
*Scott Shiels, Grain Procurement Manager,  
Grain Millers Canada Corp.*
- 3:00 pm Adjourn



## UPDATE:

### Annual General Meeting

Due to COVID-19, the POGA AGM, originally scheduled for December 3, 2020 in Banff, AB, has been postponed. A small, virtual AGM was held on November 4, 2020 with information made available prior to the event at <http://www.poga.ca>.

Please join us next year on Wednesday, December 1 for the POGA 2021 AGM at the Fairmont Springs Hotel in Banff, AB. More information will be available at <http://www.poga.ca> by summer 2021.



## Alberta Oat Growers Commission Director Nominations Open

Are you interested in becoming a director or do you know someone who is? Here are just a few of the benefits:

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

**A registered producer means any producer who has had an Alberta Oat Growers Commission service fee deducted since August 1, 2018.**

**Deadline for nominations is Thursday, December 10, 2020 - 5pm MT.**

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

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