CANADIAN FLAX

ALWAYS LOOKING FOR OPPORTUNITIES

How SaskFlax is keeping up with a rapidly changing industry

Wayne Thompson, Executive Director

"The only thing that is constant is change."
-Heraclitus

The flax industry abides by this quote right now. From the latest Statistics Canada report, the Canadian flax crop produced 548,000 tonnes for the 2017/18 crop year. This compares to a reported production of 520,000 tonnes each for Kazakhstan and Russia and almost twice the flax crop available in the Black Sea region compared to Canada.

As recently as the 2015/16 crop year Canada produced more flax than the Black Sea region. How quickly the source of international flaxseed supply has changed. Of course the lack of rain in much of the flax growing area in Saskatchewan was a factor in the Canadian flax production in 2017.

There has also been fluctuations in other areas of our industry. You may have heard that there have been changes in the organizations that represent flax stakeholders.

The Manitoba Flax Growers Association (MFGA) is participating in discussions about amalgamating with other Manitoba producer organizations for the purpose of creating a different producer organization. At the same time the Flax Council of Canada (Flax Council) has announced it has closed its office and downsized to one part-time staff member. The organization is now looking at options for the future.

These changes may leave SaskFlax in a unique position. SaskFlax continues to work with both the Flax Council and the MFGA as they contemplate pending changes. Over the past year, SaskFlax has been expanding its role to ensure research programs and domestic and international market development activities that were administered by the Flax Council are continued, and that policy issues such as trade and market access are managed through this period of change.

Another area that is changing and growing at SaskFlax is our research activity. SaskFlax is part of the Diverse Field Crop Cluster, a research program that includes sunflower, mustard, hemp, canaryseed, quinoa, and camelina and is managed by Ag-West Bio in Saskatoon as part of the Agriculture and Agri-Food Canada Canadian Agriculture Partnership program. If the program's application for the next phase of funding is successful, it will mean five more years of research for everyone involved. We hope to have feedback on our application by early April – visit our website for updates.

There have also been other changes at SaskFlax. In November 2017, after almost 20 years of our office being located in Sutherland, we moved to Thatcher Avenue in Saskatoon's north end. Please stop in and say hi. Another significant change was that we hired a Flax Agronomist at SaskFlax. We welcomed Michelle Beaith to the team in February. She is a welcome addition to the organization and is an excellent resource for flax growers, researchers and the industry. Learn more about her on Pg. 4.

Wishing you all a successful start to your growing season!

2018 FIELD DAYS

July 11th - Scott, SK
Western Applied Research Corporation (WARC)

July 12th - Yorkton, SK
East Central Research Foundation (ECRF)

July 12th – Outlook, SK
Canada-Saskatchewan Irrigation Diversification Centre (CSIDC)

July 17th - Indian Head, SK
Indian Head Research Foundation (IHARF)

July 18th - Melfort, SK
Northeast Agriculture Research Foundation (NARF) and Agriculture & Agri-Food Canada (AAFC)

July 19th - Swift Current, SK
Wheatland Conservation Area (WCA)

July 25th - Redvers, SK
South East Research Farm (SERF)

July 26th – Prince Albert, SK
Conservation Learning Centre (CLC)

July 26th - Vegreville, AB
InnoTech Alberta

IT'S AN ELECTION YEAR FOR SASKFLAX!

Call for nominations will open in July

The Saskatchewan Flax Development Commission (SaskFlax) will put out a call for nominations this July to fill three Director positions on its Board.

Two Directors, Dave Sefton and Erwin Hanley, will complete their maximum number of terms this year. Jordon Hillier is an incumbent Director.

The nomination period will open in July. Registered flax producers will be mailed more election information at that time, including details about nominations and election dates, if an election proceeds.

For more information about 2018 nominations and elections, please contact:

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SASKFLAX WELCOMES FLAX AGRONOMIST TO THE TEAM

New position a valuable addition for the flax industry

SaskFlax's new Flax Agronomist, Michelle Beaith

As of mid-February, the Saskatchewan Flax Development Commission (SaskFlax) staff grew by one.

We are pleased to welcome Michelle Beaith to the team, in the position of Flax Agronomist.

"Having a Flax Agronomist will be beneficial to flax producers and our organization," says Wayne Thompson, Executive Director for SaskFlax.

"Michelle will be able to help us identify, address, and direct research towards the major production issues for growing flax. She will also be able to communicate the most up-to-date flax agronomy information and management practice knowledge with producers, to help us meet our overall goal of building a strong and competitive flax industry."

Michelle has a strong background in agriculture, agronomy and flax. After growing up on an acreage in Bruce County, Ontario, she obtained a Bachelor's of Science degree in Plant Biology and a Master's of Science degree in Plant Breeding/Biotechnology from the University of Guelph.

Her plant breeding career began with a summer job with Pioneer Hi-Bred in 1995 and has extended across the globe to Perth, Australia where, while completing her Master's degree, she spent a few months working with the University of Western Australia's canola breeder. In 2002, she took a position as an Oilseed Breeding Technician with Agriculture and Agri-Food Canada. Since then, she has worked as a Field Biologist and an Event Analysis and Advancement Manager for Performance Plants, as well as an Assistant Canola Breeder for Dow AgroSciences.

Michelle made the move to the flax world in 2012, when she became the Flax Breeder at Crop Production Services (CPS) in Saskatoon. She transitioned into a Napus Inbred Breeder position in 2015 upon the cancellation of the CPS flax breeding program.

She looks forward to her new role with SaskFlax, and to helping shape the future of the flax industry in Canada.

"The Agronomist position with SaskFlax represents a welcome return to the flax industry after being away for a couple of years," Michelle says. "I look forward to getting my boots dirty at field days this summer while highlighting the research that SaskFlax funds, as well as interacting with producers to hear about their experiences with the crop."

"Flax is a profitable rotational alternative and I will do my best to help it reach its full potential."

DETERMINING BEST MANAGEMENT PRACTICES FOR GROWING FLAX

Outcomes from recent flax agronomy demonstrations

IHARF staff

Field Day participants observe a flax field at the 2017 Indian Head Crop Management Field Day last July.

Since 2015, SaskFlax has been partnering with the Indian Head Agricultural Research Foundation (IHARF) to facilitate research that will help us determine best management practices for growing flax in Saskatchewan.

In recent years, this research included field trials with flax near Indian Head and Melfort, aiming to demonstrate flax response to seed treatments at varying seeding rates and planting dates.

Here is an overview of some of the research findings and takeaway to-date.

- Flax establishment was improved when seeding was delayed at two thirds of the sites, while at the driest site, populations tended to be higher with early seeding. As anticipated, establishment was also improved with higher seeding rates, but this increases production costs and excessive populations can potentially lead to increased lodging and disease pressure.
- The use of a seed treatment improved flax establishment at one site-year (Indian Head- 2016) but had no effect at the remaining two sites. There were no interactions between seed treatment and the other factors in any cases, therefore it could not be concluded from these results that greater benefits are likely when seeding into cooler soils or using sub-optimal seeding rates.
- Maturity was slightly earlier with seed treatments at two of the three sites, but at only 0.4-0.6 days, the difference was negligible from a practical perspective. Increasing seeding rates from 35 to 75 kilograms a hectare (31 to 67 pounds an acre) shortened maturity by approximately two days, while delayed seeding reduced the number of days (from planting) to maturity by as much as 10 days. However, the crop was always ready to harvest substantially earlier with early seeding.
- Flax yields were affected by seeding date at two of the three sites and seeding rate at one of the sites, but not by seed treatment in any cases. In both cases where the effect was significant, yields were higher with early seeding, however much of the yield loss observed with delayed seeding at Indian Head was attributed to wildlife damage.

For the only case where seeding rate affected yield (IH-16), the results were the opposite of what was anticipated with a slight linear decline in yield with increasing seeding rate.

Conclusions:

The results from this project demonstrate that flax should be seeded early and at adequate but not excessive seeding rates for maximum yield potential and the earliest possible harvest.

Seed treatments may lead to improved establishment but not under all circumstances, and the evidence suggests that yield responses may be less likely. It is possible that flax response to seed treatments might be more likely on a larger scale where emergence issues and seedling disease pressure are often spatially variable.

Another field trial was established in 2017 near Indian Head to demonstrate the relative performance of modern flax varieties along with the potential for response to potassium (K) and sulphur (S) fertilization.

Although the season was drier than normal, with only 51% of the long-term average precipitation received in April through August, uniform and adequate plant populations were achieved and yields were approximately average for the region. The varieties evaluated were CDC Bethune, CDC Glas and CDC Neela. Plant populations were similar across varieties (386-410 plants per metre squared) while yields differed and were 1848, 2026, and 1968 kg/ha (29.4, 32.2, 31.4 bu/ac) for CDC Bethune, CDC Glas, and CDC Neela, respectively.

These outcomes support the recommendation that growing modern, regionally adapted varieties is an important component to achieving top flax yields. The fertility treatments, which included various combinations of K (potash versus potassium sulphate) and S (ammonium sulphate) fertilizer, did not affect either flax establishment or seed yields. The lack of an effect on plant populations was not unexpected since all K and S fertilizer products were side-banded.

Regarding yield, while all major crop nutrients can potentially be limiting, K and S deficiencies tend to be soil specific and a spring soil test on the site did not identify either of these elements as likely to be limiting.

Overall, these results support the use of soil tests to help guide fertilizer decisions and are in agreement with broader recommendations that flax yield response to K or S are less likely than for N or P in the majority of Saskatchewan fields.

More information on these projects, and many more, can be found online at www.iharf.ca

DEVELOPING FLAX VARIETIES FOR NORTHERN REGIONS

SaskFlax scholarship recipient aims to develop early flowering, early maturing flax cultivars for the prairies

Akshaya Vasudevan

SaskFlax scholarship recipient Akshaya Vasudevan is focusing her graduate research on developing early flowering, early maturing flax cultivars for the prairies

Canada is a world leader in flax production, exporting the crop to more than 50 countries globally, including China, the United States and the European Union. And of our domestic production, Saskatchewan has been the major contributor.

However, flax production in the prairies is restricted to the southern part of the grain belt due to the potentially damaging early fall frost in the northern regions.

Having early flowering cultivars available would help to expand crop production into the northern regions.

There are other potential benefits to growing flax in the more northern regions as well. The lower ambient temperature enhances the seed quality through increased concentrations of unsaturated fatty acids in the seed, which are known for their potential health benefits to humans and animals. These early flowering and early maturing cultivars can also help the current production areas overcome the problem of tangling of green stem to the harvesting equipment.

This is why my research at the University of Saskatchewan (U of S) is about developing early flowering, early maturing flax cultivars for the benefit of prairie producers.

About my research

The research will use all available genomic resources for flax. These include the results from the total utilization flax genomics (TUFGEN) project, such as the flax reference genome assembly and other state-of the-art methodologies in crop improvement such as next generation sequencing.

The research will also make use of an early flowering mutant from previous research.

In 1994, the late professor Mary Ann Fields treated the heritage flax cultivar “Royal” with the epimutagen 5-azacytidine, deriving three interesting early flowering mutants: RE1, RE2 and RE3, which were found to start flowering seven to ten days earlier than Royal. As this trait was stable over multiple generations, a segregating population was developed at the U of S’s Crop Development Centre for identifying the loci with potential associations with the early flowering trait.

My research focuses on RE2 to identify the genetic basis of the early flowering trait. Most of the agronomically important traits have complex genetic controls in plants, including the flowering time, which makes my work challenging but also interesting.

How this research will benefit the flax industry

Identifying the genetic basis of early flowering would help in the genomics-assisted flax breeding process, helping to develop cultivars that would fit in rotation with other crops in the prairies while also delivering other benefits such as disrupting disease cycles.

I hope that the outcome of my research work will not only be helpful to flax but can also be extrapolated to other crops in the Canadian prairies, since early flowering is always a prime objective in crop improvement.

Support for my research

As a graduate student hailing from India, a country which gives top priority to agricultural research to sustain food security for its billion-plus people, I am grateful to Dr. Helen Booker, an Associate Professor and Flax Breeder at the University of Saskatchewan, for my training in classical plant breeding and Dr. Steve Robinson, Research Scientist at Agriculture and Agri-Food Canada, for providing opportunities to learn advanced genomics which have practical applications in plant breeding.

I am also profoundly grateful to SaskFlax for supporting me through the graduate student scholarship, which has inspired me to sustain my academic and research interests to generate knowledge that will contribute to flax crop improvements.

SaskFlax was established in 1996 and represents 6,600 registered flax producers in Saskatchewan. Directed by flax producers, SaskFlax operates via a mandatory but refundable producer levy on flaxseed and straw. These dollars are leveraged whenever possible to execute programs ultimately geared to increase net returns to its producers members and advance Saskatchewan's flax industry.

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