SPRING ISSUE 2021

SASKFLAX NEWSLETTER

SaskFlax

LOOKING FORWARD TO A NEW GROWING YEAR

Wayne Thompson, Executive Director

We are all likely looking forward to getting back to the field this spring. At the Saskatchewan Flax Development Commission we are looking forward to a new growing season and the field work for flax research, including variety development and agronomy this year.

There is excitement at the Crop Development Centre flax breeding program as Dr. Bunyamin Tar'an will take on the flax breeding program. Dr. Tar'an will continue as the chickpea breeder. As Dr. Tar'an links the two programs we are looking forward to the new flax varieties he will develop for farmers and the industry. SaskFlax will be working closely with Bunyamin to set goals for new varieties that farmers want to grow. If you are interested in some of the breeding activities, you can read more at the Diverse Field Crop Cluster website: **www.dfcc.ca**.

The SaskFlax Annual General Meeting was held on January 12. At the AGM two resolutions were brought forward. The resolutions were about export sales reporting and carbon tax credits. The Board has been discussing how to proceed and act on each one. SaskFlax is engaged with several other organizations. We are collecting information to help us determine how to best act on export sales reporting. The benefit of market information continues to be important for flax growers and the past few months of record high flax prices underlines the need for information to help farmers understand the market forces at play to make informed marketing decisions.

The carbon tax credit resolution has been a long-term question that has involved many conversations over the years and not significant progress. Recently the federal Minister of Environment and Climate Change Canada announced programming and policy. SaskFlax is working with other organizations to move this resolution forward with the intention have having a long-term positive result for agriculture.

SaskFlax has been monitoring and participating in the consultation for the Code of Practice for grain production. The farmer participation has been important in shaping the end result. The feedback received is being used to improve the guidelines that will help us deliver the message to consumers and foreign markets about the high standards already followed by Canadian farmers.

Due to travel restrictions the market development efforts for flax have been a little quieter this winter. There have been several online trade events, but when it comes to meeting with people in global markets and explaining our flax there still is not a replacement for face-to-face conversations.

Although the end of summer is still a few months away we will soon be planning the flax disease survey to take place in August and September. If you are willing to let us come out to survey your flax field please contact the Saskatchewan Ministry of Agriculture or the SaskFlax office. The information is beneficial to determine the impact of flax disease and understand trends and changes.

This spring will be busy for all of us. Hopefully, we will see you at field days and other events this summer. As always, we encourage to you talk to us to help us shape our direction and if you want to know more about what we are doing at SaskFlax for your benefit.

IN THIS ISSUE

WELCOME

TO OUR TWO NEW DIRECTORS

SaskFlax

who will be serving on the Board of Directors for SaskFlax for the next four years.

Brent Dunnigan

Alameda

For the last 46 years, Brent has been farming at Alameda with his wife, Peggy, and now their three grown daughters. Although Brent's daughters have their own professional careers, all are active on the family farm and have responsibility for parts of the business.

Flax has been a mainstay on the Dunnigan farm since the late 1940s. They were one of the first families to seed canola in the late 70s and, as well, grow durum wheat, hard wheat, oats, chickpeas and peas. They've also tried their hand at quinoa, and are always looking for new opportunities.

Along with farming, Brent has been an entrepreneur since the age of 24, from which time he's been involved in the energy sector in southern Saskatchewan, running three different service and oil companies. He hopes to bring those entrepreneurial skills and his corporate knowledge to the SaskFlax Board.

Brent has been an active member of the Alameda community though coaching high-level softball, participating in various town building projects, sports and the annual fish derby, and served on the board of Saskatchewan Canola Growers Association. This will be his first term with SaskFlax.

"Agriculture is my first passion," Brent emphasizes, "and I like to think outside of the box. I see a lot promise for the flax food market. We also need to make improvements to the plant fibre and establish better varieties to deal with the straw issue."

He continued, "SaskFlax has done lots of really positive things. With all the professional and forward thinking people on the board, I think we can make a lot of headway in international markets. I am really looking forward to being part of the board and helping make decisions that will benefit flax growers in the province."

Garry Noble

Mossbank

Garry Noble and his wife, Antionette, farm near Mossbank, Saskatchewan. They grow flax, durum wheat, spring wheat, yellow peas and green lentils.

Garry attended the College of Agriculture at the University of Saskatchewan from 1981-85, then worked as a technician for Agriculture Canada Melfort Research Centre from 1985-89. He spent the next 15 years as an extension agrologist with the Saskatchewan Department of Agriculture based in Assiniboia, before moving back to the family farm in 2003.

Garry is looking forward to serving his term on the SaskFlax board, and hopes that his background in extension and research will prove an asset to the SaskFlax Board of Directors. He also served two terms on the Saskatchewan Soil Conversation Association.

"I am so impressed with this group of smart and successful directors on the board and the energy they bring to the job," he states. "I am looking forward to working with them and to making a contribution to SaskFlax."

One of the biggest challenges he feels the board faces is how to best serve the levy payers and ensure their money continues to be used as wisely as possible. With the strategic planning session scheduled for this coming summer, he's very interested in exploring the relationship the commission has with growers.

"It will be important to know we're in sync with farmers and the industry," he states. "After all, it is up to us as their representatives to ensure we're being responsible to the Act, as well as communicating with and listening to levy payers." Garry and Antionette have been actively involved in the Mossbank community, including on the school-community council, in their local church, as well as in sports. They have three grown children.

PRE-HARVEST WEED CONTROL
AND DESICCATION OPTIONS FOR FLAX

Chris Holzapfel, MSc, PAg

Harvestability is a challenge for flax growers and, combined with residue management issues, is a significant reason that growers express resistance to growing this crop. A project was initiated to help address this issue with field trials conducted at Indian Head and Yorkton in the Black soil zone and Swift Current in the dry Brown soil zone.

The objective was to evaluate pre-harvest herbicide and desiccant options for their ability to accelerate stem and seed dry-down, potentially allowing for earlier harvest, easier threshing and an improved ability to chop and seed into residues. The treatments were a combination of two varieties (CDC Bethune and CDC Glas) and four pre-harvest options. The pre-harvest options were an untreated control, glyphosate applied alone, glyphosate tank-mixed with saflufenacil, and diquat. All treatments were applied when 75% of the bolls had turned brown.

The variables of greatest importance were visual stem colour change along with actual seed and stem moisture content at harvest. Harvest was completed 14-17 days after the treatment applications. At Swift Current, August was extremely dry and warmer than normal. Under these conditions, the crop dried down well regardless of the treatments and there were no differences in either stem colour change or actual stem moisture content at harvest. At Indian Head and Yorkton, all pre-harvest options were beneficial.

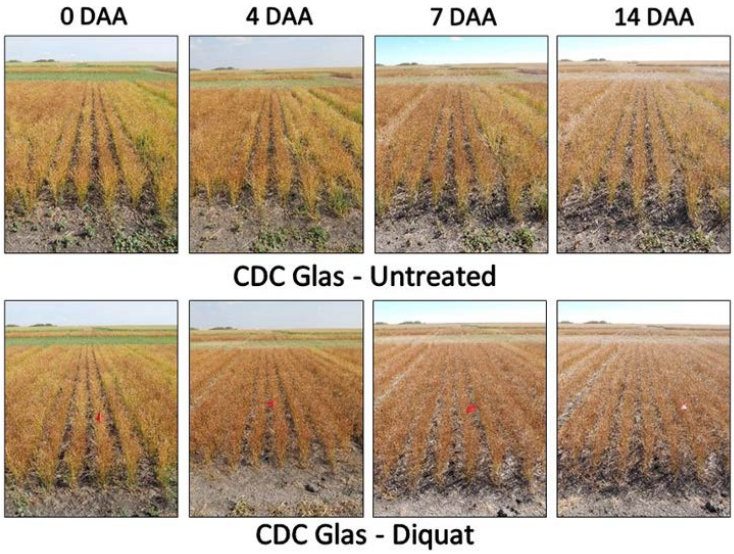
Diquat consistently provided the most rapid and thorough dry-down. Glyphosate applied alone was the slowest option and did not dry the crop to the extent of diquat, but was still beneficial. Tank-mixing glyphosate with saflufenacil resulted in more rapid stem colour change at both locations and, at Indian Head, more thorough stem dry-down after 14 days.

Besides cost, another factor to consider is weed control and there are trade-offs in this regard. While diquat was by far the most effective crop desiccant, it is limited in its ability to control weeds, especially perennials, and can actually make weed control more difficult by burning of top-growth and reducing opportunities to spray post-harvest.

Glyphosate is the least effective as a desiccant but is also the least expensive, and ideal for controlling difficult weeds. Tank-mixing glyphosate with saflufenacil aims to bridge this gap, combining both powerful weed control and more rapid and complete crop dry-down; however, this is the most expensive option and still not as effective as diquat for drying down the crop.

Saflufenacil is registered for use on flax, but is lacking a maximum residue limit (MRL) for China and the established MRL for the European Union (EU) is too low for use as a desiccant in flax. The use of saflufenacil on a flax crop that is exported to the EU will result in the MRL being exceeded. As such, growers should contact their potential flax buyers before applying saflufenacil to their crop.

This project only took place in 2020, and one year of results cannot always be replicated. A similar project will be carried out again in 2021 in order to generate more results that growers can expect in their own fields. Funding for this project was contributed by the Government of Saskatchewan and the Government of Canada under the Canadian Agricultural Partnership, also with support from the Saskatchewan Flax Development Commission.
To view the full report, visit **www.iharf.ca/full-reports.**



DAA = Days After Application

FLAX SHOWS PROMISE

As A Valuable Crop For Intercropping

Melanie Reid from Wolseley is a MSc candidate at the College of Agriculture & Bioresources in the Department of Soil Science, whose research is supported by 2019-2020 and 2020-2021 Saskatchewan Flax Development Commission Graduate Scholarships. Her focus is on intercropping (two or more crops grown together in the same field during the same growing season), and specifically the effects of chickpea-flax and pea-mustard (pulse-oilseed) combinations.

Reid's research was inspired by Lana Shaw's intercropping studies at the South East Research Farm in Redvers. Shaw's work has identified seeding rates, agronomic benefits, logistical considerations and best crop combinations for that region of Saskatchewan. The most promising combination to date is growing a pulse crop together with an oilseed, allowing crop varieties that are not typically grown in the region to be viable options because of the synergistic growing characteristics.

There is currently no published data on nutrient dynamics in pulse-oil seed intercrops in Western Canadian soil documentation. Understanding of the operative processes and mechanism in pulse-oilseed intercrops are needed for successful introduction and widespread adoption of intercropped systems by producers. Reid's research aims to address this need.

Both on-farm use and research indicate important benefits to intercropping.

A lack of resiliency in crops can result in yield reduction, and pest and pathogen pressures. Right now, growers in Western Canada currently use crop rotations to improve resiliency. Intercropping is another strategy to reduce input costs and get biology working for growers that both Reid and Shaw hope will become more mainstream.

Intercropping can promote increased yields of one or both crops, even on land with low fertility. It provides yield stability in drought years and reduced risk of crop failure because at least one crop is likely to be harvestable in any one growing season. Intercropping can also help with nutrient dynamics between crops and disease control in pulses.

Not only does intercropping demonstrate better nutrient uptake with fewer fertilizers, but because of disease resistance, there is need for fewer pesticide applications. Intercropping can thus save growers money and result in larger profit margins.

That the project was taken on by the University of Saskatchewan is a big step forward in terms of developing intercropping techniques and advancing profitability for farmers.

Pulse-oilseed combinations are ideal for intercropping.

Crop choices for intercropping in Western Canada are limited to combinations of crops that have similar stages of growth and development, with seeds that are easily separated at harvest. Pulses and oilseeds are an ideal combination because they can be harvested together and seeds separated out.

Combining an oilseed and a pulse seems to change the dynamics of the other crop. Some pulses and oilseeds are particularly compatible because they do not compete for nutrients. Pulses improve solubilization (conversion of plant nutrients into an absorbable form) and N and P uptake, as the microbes in the soil help with nutrient transfer.

Redvers chickpea-flax 2019

A brief overview of

THE RESEARCH

Reid's research has two objectives:

1. To determine yields, biological nitrogen fixation and nutrient update differences between pulse-oilseed intercrops (namely chickpea-flax and pea-mustard) and monocultures.

2. To measure the effects of pulse-oilseed intercrops on nutrient cycling.

The project involved field trials conducted over the 2019 and 2020 growing seasons at two locations: Redvers (Black Chernozem) and Central Butte (Brown Chernozem), which resulted in four site years of data. For each location, there were four treatments: pulse monocrop, oilseed monocrop, pulse and oilseed in alternate rows and pulse and oilseed mixed in the same rows.

Results

There were no consistent trends in flax yields between sites, years or treatments. The more normal moisture conditions of 2019 showed a benefit to chickpea-flax intercropping, while the hot, dry 2020 crop year did not. The four site years did not provide enough evidence to indicate if seeding arrangement impacts grain yield for chickpea-flax intercrops. Intercrop flax grain yields appeared to be influenced by chickpea plant density and plant vigor.

Reid will be analyzing nutrient data in the coming months, including how intercropping affected biological nitrogen fixation, nutrient supply and solubilization, as well as N and P uptake in grain and seed and how it related to yield.

Even though results were variable because of extreme drought in 2020, Reid and Shaw both say that early data is promising and more research is required.

FLAX IS AN EXCELLENT COMPANION CROP.

It is low maintenance and not susceptible to many pests. In a chickpea-flax intercrop, it seems to help the pulse mature more rapidly and ward off disease and insects.

BEST MANAGEMENT PRACTICES
FOR GROWING FLAX

Flax is a good crop to consider in your crop rotation.

Maximizing yields is key to a profitable crop. Paying attention to these seven factors will pay off in terms of stand establishment, yield and in-season crop management.

1 Review cropping and herbicide histories before seeding.

Flax can be susceptible to damage from several herbicide residuals from previous seasons. Before making the final decision on which field to seed to flax, a review of the herbicides that were applied last year, and in some cases 2 or 3 seasons prior, is recommended.

Avoid seeding flax after non-mycorrhizal crops (e.g., canola, mustard, quinoa, buckwheat) because it will take significantly longer for flax roots to establish the networks with arbuscular mycorrhizal fungi (AMF) that are critical for early season phosphorous uptake than in rotation with a mycorrhizal crop.

Other crops to be wary of seeding flax after include flax, oats, sugar beets and legumes (if *Rhizoctonia* present) and shallow-rooted crops (if soil moisture conditions are low). Three years between flax crops significantly increases yield due to decreased incidence of disease.

2 Use a pre-plant/pre-emergent herbicide.

Flax is a poor competitor with weeds, so early season weed control is important, especially when the crop is 2 to 6" tall.

Numerous pre-plant and pre-emergent herbicides are available for use on flax to control broadleaf and grassy weeds, whereas the only in-crop products registered for grassy weed control are Group 1 chemistries, broadleaf products are limited to Group 4 and 6 and bentazon is the only in-crop option to control cleavers in flax.

3 Test seed for germination and consider testing for vigour.

Germination rate is an indication of the maximum potential of a seed lot for growth and is a key component for calculating seeding rate. A vigour test will provide additional information related to the ability of the seed to germinate under less-than-ideal conditions and may be especially informative if planning to seed early. Harvest and seed storage conditions can greatly affect vigour so it is often recommended that vigour be tested at the time of storage and again prior to seeding.

SIGN UP FOR SASKFLAX COMMUNICATIONS

including the *Flax on the Farm* agronomy newsletter by entering your e-mail address in the box at the bottom of the SaskFlax website, **www.saskflax.com**.

4 Seeding rate is based on several factors.

When calculating seeding rate, producers should target a minimum plant population of 300 plants/m^2 (28 plants/ft^2) to maximize yield potential and factor in germination rate, an emergence rate of 50-60% and seed size.

5 Flax can be planted early.

Early seeding (within the first three weeks of May) produces higher yields. Other benefits include frost tolerance (-3.9°C at the cotyledon stage and -8°C at the 2-leaf stage if acclimated), increased competitiveness with weeds, avoidance of high temperatures during flowering which can cause flower/seed abortion, increased resistance to insects and disease, shorter height and more time for the straw to dry down prior to harvest.

6 Seeding depth is critical.

A depth of 2.5 cm to 4.0 cm (1.0 to 1.5 inches) deep is recommended. Deeper seeding or seeding into soils that are prone to crusting should be avoided whenever possible as emergence will be decreased and delayed, resulting in weaker seedlings and reduced stands prone to excessive weed competition, injury by herbicides and disease.

7 Flax is sensitive to seed placed nitrogen and phosphorus.

Flax is a good candidate for split-applications of fertilizer due to nitrogen sensitivity. Flax responds well to levels of nitrogen fertilizer up to 89 lb/ac (100 kg/ha). Up to 15 lbs P_2O_5 / acre can be applied with the seed, but banding is the preferred placement for phosphorus.

For more information, contact the SaskFlax agronomist: Michelle Beaith / 306-664-1901 / michelle@saskflax.com

or refer to the ***Growing Flax Guide***:
www.saskflax.com/quadrant/media/Pdfs/Growing%20Flax/150101_FCOC-growers-guide-v11.pdf

Tax Credits for Flax

Each year, Saskatchewan flax producers contribute check-off dollars to research and development and are eligible tax credit on their investment.

The **Scientific Research and Experimental Development (SR&ED) Tax Incentive Program** is a federal program to encourage Canadians to conduct research and development in Canada that will lead to new, improved, or technologically advanced products or processes. For the crop year ending July 31, 2020 the SR&ED tax credit for levy-paying flax producers is 39.2%.

In addition, farm corporations may also claim their levy contributions as a qualifying expenditure towards the **Saskatchewan Research and Development (SR&D) Tax Credit Program**. For the crop year ending July 31, 2020 the SR&D tax credit for levy-paying flax producers is 35.5%.

For more information on both the SR&ED and SR&D tax credit programs, see the Government of Canada website.
www.canada.ca/en/revenue-agency/services/scientific-research-experimental-development-tax-incentive-program.html

SaskFlax

SaskFlax was established in 1996 and represents 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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