

Research Director's Corner

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The global pandemic certainly had a major impact on our field season and what we could accomplish. In March, Agriculture and Agri-Food Canada (AAFC) issued a closure of CSIDC and requested ICDC staff to vacate the premises. All staff established temporary work-at-home offices during a time that we are normally busy preparing for the upcoming field season. It was unclear how long the situation would persist, so we scrambled to adapt. We rented floor space in Outlook's "Rec Plex" where we could continue to acquire materials and supplies for trials and begin calibrations on a new research seed drill we had recently purchased. Due to concerns over possible COVID-19 contamination of shared AAFC equipment, the Board approved the purchase of a 52 hp tractor, which had not been budgeted for. By late April, it was apparent that CSIDC would operate with limited staff and limited field activities. Unfortunately, summer students were not allowed on-station so we had to inform our intended students we would be unable to offer employment.

In May, we were able to establish trials on land kindly rented to us by Grant Pederson and on land previously rented from the Town of Outlook. On May 18, we received approval to re-enter the CSIDC facility but due to AAFC restrictions, we were required to reduce the number of CSIDC on-station trials by half. In total, we managed to establish 27 trials out of 51 projected trials. An additional 3 on-farm trials were conducted on ICDC's behalf by the Ministry of Agriculture. Some funded trials were deferred until 2021, other funded trials were lost, and some commodity group funded trials were offered to other research organizations. ICDC will attempt to reclaim commodity group trials in 2021, however, this may not be possible.

In April, Dr. Erin Karppinen joined ICDC as Joint Research Director. Our intent was for Erin and I to work together for a couple



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of field seasons and allow her to familiarize herself with the entire program prior to my transition into retirement. Needless to say, her exposure to ICDC has been one of trial by fire! I wish to thank the permanent staff of Brenda Joyes, Ted Nodge, Damian Lee, and Erin for the tremendous job under extraordinary circumstances. I am honoured to work with these folks and proud of what we were able to accomplish this season without support staff. Similarly, a grateful thank you goes to the ICDC Board of Directors who also showed leadership and guidance in an organizationally challenged year. A special thank you also goes to the Ministry of Agriculture for their understanding and willingness to defer funded projects given the circumstances of the year and for the assistance of Irrigation Agrologists and Crop Specialists.

It is our intent to have a "full" program in 2021 and we have some exciting developments that will enable this to occur.

Let's just say that 2020 is not an operational year I'd like to repeat, but we are not free from the pandemic yet. ICDC staff is already planning on a 2021 field season matching the restrictions we operated under in 2020. However, we are much more prepared and will have plans in place to ensure we can quickly adapt to the ever changing COVID-19 situation. It is our intent to have a "full" program in 2021 and we have some exciting developments that will enable this to occur. I'll discuss these in the Spring 2021 *Irrigator*. See page 2 for an outline of the 2020 trials conducted. Again, should you have ideas of research trials or demonstrations you'd like addressed please contact me. Thank you.

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November 2020

Published bi-annually by the Irrigation Crop Diversification Corporation (ICDC) and the Saskatchewan Ministry of Agriculture.

Available online: <http://irrigationsaskatchewan.com/icdc/>



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Revisiting nitrogen fertilizer recommendations for Saskatchewan: Canola & Wheat	4R Nitrogen Management Principles in Spring Wheat
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Irrigated flax monitoring project at Riverhurst	Monitor production practices for irrigated canola

Preventing Wind from Blowing your Money Away

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Soil erosion is a historic challenge for crop production in Saskatchewan. The removal of nutrient-rich topsoil by wind is costly to farmers and can have negative environmental impacts. In 2020 it was clear to see that soil erosion is still an issue around the Lake Diefenbaker Development area despite management practices like continuous cropping being used.

Irrigation provides producers the ability to grow high-value row crops, such as potatoes or dry beans, by eliminating the risk of drought. After the harvest of these crops, the soil is left bare and mellow with little crop residue to protect it from the wind. When we experience a windy spring like we had in 2020, these fields become prone to soil erosion. To help address this, ICDC is conducting an ADOPT demonstration to help evaluate different cover crops that can be seeded onto row cropped land in fall.

The project, titled "Demonstration of Cover Crop Options Following Row Crop Harvest on Irrigated Land" will evaluate both winter and spring cereals seeded at two different dates. The har-

vest window for row crops is wide so an early and late September seeding date was set to evaluate biomass production of fall rye, winter wheat, winter triticale, barley, and oats. Total biomass will be determined before winter and cover will be reevaluated in the spring. The winter cereals will be terminated in the spring and two separate blocks will be seeded in spring to canola and wheat. Yields of the spring seeded crops will be measured.

If you are interested in learning more about this demonstration, a video going into more detail is available on ICDC's YouTube channel. Project updates and findings will also be reported on ICDC's Twitter and Facebook pages.



Crop Water Use of Modern Fababean Varieties

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Fababean tried to become a prominent crop under irrigation in the LLDA this past year. In the 1980's, irrigators were attracted by local traders to grow the crop. A journal article authored by Krogman, Hobbs and McKenzie in 1980 documented the crop water use of fababean in Southern Alberta at 544 mm. Since then, a lot of plant breeding development with the crop has occurred. Dr. Bert Vandenberg has succeeded in reducing the size of the seed and also the length of the growing season for the crop meaning the crop is currently much better adapted to Saskatchewan conditions.

Over 1000 acres of fababeans were grown in the area this past summer. One of the projects conducted with ICDC this summer was to determine the water use of current varieties of fababean. Two sites were monitored during the growing season with local producers and summarized with the AIMM program. These two sites showed the crop water use of current fababean varieties is about 365 mm.

Prairie based value added processing of the fababean may soon become a reality. The latest attempt at extraction has been encouraged by the potential of protein extraction for plant based protein products. Through this difficult fall season with the early September frost, the variety Fabelle has shown good tolerance to weather stresses and seems to keep an attractive seed quality in spite of the weather stresses.

Expansion of the Pickling Cucumber Industry in Saskatchewan

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In the spring of 2019 a pickling cucumber variety trial was established at the Irrigation Crop Diversification Corporation (ICDC) in Outlook and the Conservation Learning Centre (CLC) near Prince Albert. The trial assessed the cucumber varieties for yield, quality, and harvestability parameters. In 2020, with knowledge derived from this project, local vegetable growers ramped up cucumber production to meet the supply needs for a new line of locally processed pickles. For the first time, under the Co-op Gold Pure® brand, Dill Pickles exclusively made with local cucumbers and dill can be found on your grocer's shelf. Not only locally grown, this product is also processed locally in Saskatoon! Along with the dill pickles, Co-op is marketing pickled carrots and a sweet relish under the same brand; all grown and processed here in Western Canada.



This is a good news story of how private industry and researchers can work together. Federated Co-operatives Ltd. (FCL) had partnered with the Prairie Fresh Food Corporation looking to use locally grown produce in value added products. The Prairie Fresh Food Corporation knew how to grow a high quality pickling cucumber, but had questions

about scaling up production and what cucumber characteristics are best suited to value added processing. These questions were posed to Ministry of Agriculture staff, who identified these knowledge gaps as a potential research project through the Strategic Field Program.

The Strategic Field Program (SFP) accesses research dollars from the Canadian Agricultural Partnership for projects led by ministry topic specialists, to address industry knowledge gaps. SFP projects offer funding for rigorous field level demonstrations and/or the evaluation of targeted practices and technologies. The goal is to complete field research that is relevant and timely to producers, while advancing the objectives of the ministry. Expansion of the Pickling Cucumber Industry in SK was a perfect fit. Production questions about mechanical harvesting, variety selection, required heat units and estimated yields were addressed through the project; as well as, processing parameters like ability to pickle, color, handling, crispness and taste. The field research production questions were addressed by field plots grown and maintained at ICDC and the CLC, managed by Dr. Doug Waterer. The processing questions were addressed by the Saskatchewan Food Industry Development Centre (Food Centre) in Saskatoon.

The project is wrapping up in 2020, with a final report being submitted to all participating parties: ICDC, CLC, SVGA and the Ministry of Agriculture. Production and processing questions have been answered and the new products are available at FCL grocery stores. The last step is in the hands of the Saskatchewan producers; to grow and expand this industry with even higher volumes and new Saskatchewan made value added products.

Irrigation Saskatchewan Conference



25th Annual SIPA/ICDC Irrigation Saskatchewan Conference On-line Presentations



SCHEDULE

Monday, December 7, 2020 _ 8:30 a.m.

Presentations

- ICDC 2020 Program Update
- SIPA 2020 Activity Highlights

Tuesday, December 8, 2020 _ 8:30 a.m.

Presentations

- Prairie Prosperity: A vision for the Management of Water Resources across Saskatchewan and the Prairies
- Western Economic Diversification Canada—Dr. Abdul Jalil
- Lake Diefenbaker Irrigation Expansion:
- Water Security Agency and Ministry of Agriculture
- Demo projects, Drainage with Irrigation in Saskatchewan
- Water Security Agency – Doug Johnson

Updates to follow on <http://irrigationsaskatchewan.com>

Wednesday, December 9, 2020 _ 8:30 a.m.

AGMs and Presentation

- ICDC Annual General Meeting
- SIPA Annual General Meeting
- Irrigation Act and Irrigation Regulations Update—Irrigation District compliance - Ministry of Agriculture

Register on-line through Eventbrite for access to presentations

<https://www.eventbrite.ca/e/25th-annual-sipaicdc-irrigation-saskatchewan-conference-tickets-125569707375>

Deadline to register: December 4, 2020_5:00 p.m.

For more information on the conference contact:
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About the Conference:

This year's on-line Irrigation Conference will provide attendees with an opportunity to hear what SIPA and ICDC have been working on in 2020. With the Province of Saskatchewan's announcement to invest in Saskatchewan's irrigation, day 2 will provide opportunities to learn more about the expansion and other project opportunities with-in Saskatchewan. The final morning of the conference all irrigators are invited to participate in the Annual General Meetings of ICDC and SIPA followed by an update to changes on the Irrigation Act and Regulations and Irrigation District compliance from the Ministry of Agriculture.