WARC 2021 Spring Update

MAY 2021

Spring is here and everyone at WARC is excited to start our 2021 season! We survived yet another Saskatchewan winter and look forward to some warmer weather and the start of seeding. Over the winter we were able to complete reports and factsheets from our 2020 season, as well as plan our research program for the upcoming year. This next month is going to get a lot busier as we prep our drill, package seed and fertilizer, and start seeding trials. We want to wish you all a safe and successful crop season!

WARC TEAM

WARC would like to welcome back our returning summer students; Jocelyn Leidl (left) and Breanna Elder (right)! Jocelyn is from a farm south of Wilkie and is going into her fourth year of Agronomy at the University of Saskatchewan. Jocelyn is also doing her undergraduate thesis project here at WARC! Breanna is from a farm by Unity and recently graduated from Lakeland College with a diploma in Crop Technology. She is returning in the fall for Ag Business. The girls are already busy packaging seed and fertilizer for our trials!

EVENTS

Crop Opportunity

WARC held our first ever webinar for Crop Opportunity on March 3rd. It was a huge success with 158 attendees from all over the province, as well as Manitoba and Alberta. We heard from 7 speakers covering topics such as the fractionation process for fababeans, pea fertility, split nitrogen applications in wheat, ultra-early seeding wheat, and understanding grain contracts. While we missed seeing everyone in person this year, we were happy to share our research results and to be able to reach such wide audience. Thank you to everyone who took the time to watch! And for anyone who missed it, the webinar is posted on our website.

Virtual Field Day

WARC's Virtual Field Day will be on July 7th and will highlight some our research trials. The event will be posted on our Facebook and Twitter so save the date and make sure you tune in to see our research trials!

RESEARCH UPDATE

We've been busy all winter writing reports, working on budgets, planning our 2021 research program, and sourcing products for trials. Our website is currently up-to date with reports and factsheets from our 2020 research trials, so be sure the check them out if you are looking for information! We will be conducting 35 trials in the 2021 season and we are very excited about some of the ideas and technologies we will be researching. Here is a sneak peek at a few of the trials we have lined up for the upcoming season!

Be sure to follow us on social media throughout the season for more updates on these trials and others!

Trial Name	Crop
Canola seed safety and yield response to novel P sources in Saskatchewan soils	Canola
Development of decision support tools for fusarium head blight management in Western Canada	Wheat
Hemp seeding date and variety	Hemp
Seeding rate to reduce tillering and flowering duration for fusarium head blight management in wheat	Wheat
Can farm-saved seed of wheat perform as well as certified seed?	Wheat
Alternative Strategies for Control and Management of Kochia	Lentil
Production management strategies to improve field pea root health in Aphanomyces contaminated soils	Peas
Sclerotinia risk assessment tools for spray decision support in canola	Canola
Flax response to non-traditional nitrogen fertilizer management strategies	Flax
Integrating nitrogen fertilizer technologies with superior genetics to optimize protein in CWRS wheat without compromising yield, 4R principles, and environmental health	Wheat
Agronomic and Economic Response of Lentil to Seed Rate & Fungicides	Lentil
Lentil Response to Fertilizer Applications and Rhizobial Inoculation	Lentil
Critical period of weed control in fababean	Fababean
Timing of desiccation in fababean	Fababean
Barley production to the MAX	Barley

Herbicide Management Strategies for Weed Control in Lentils

Funding: Saskatchewan Pulse Growers and the Agricultural Demonstration of Practices and Technologies (ADOPT)

Objectives:

The objective of this study was to demonstrate herbicide weed control options for kochia, wild mustard and volunteer canola in lentil. As well as, to demonstrate herbicide layering techniques and provide a platform to discuss herbicide resistance management strategies.

Methodology:

Field experiments were conducted in 2020 at four locations in Saskatchewan: Saskatoon, Scott, Swift Current, and Redvers. The study consisted of 16 herbicide treatments with different herbicide application timings. Fall application of herbicides was applied from mid to end of October on canola stubble in 2019 and spring application (Pre-plant) in 2020. Herbicides used in fall application were; Edge (ethafluraflin), Fierce (flumioxazin + pyroxasulfone), Valtera EZ (flumioxazin), Express SG (tribenuron), and Focus (pyroxasulfone + carfentrazone). Herbicides used in spring pre-plant application were Focus (pyroxasulfone + carfentrazone), Goldwing (pyraflufen-ethyl + MCPA), Zidua (pyroxasulfone), and Heat LQ (saflufenacil). All spring application treatments were tank-mixed with glyphosate. In-crop herbicide Solo (imazamox) was considered as the control.

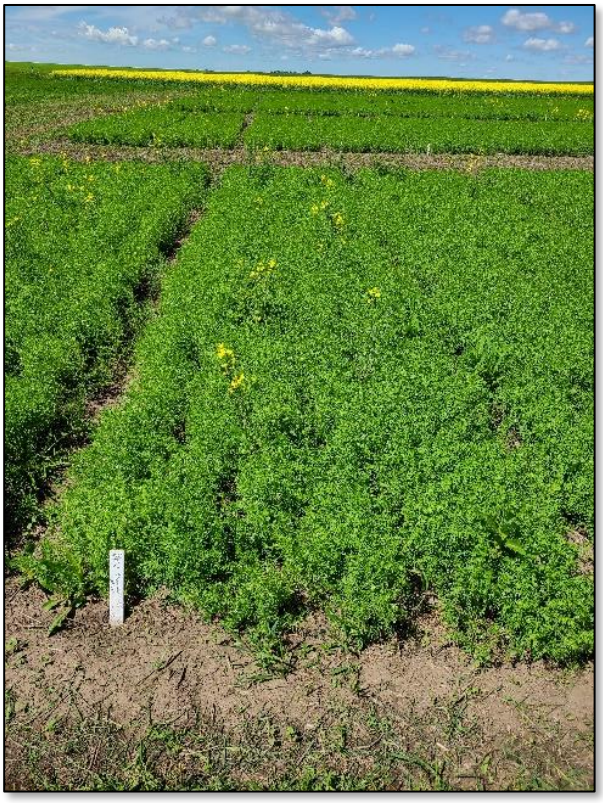
Results:

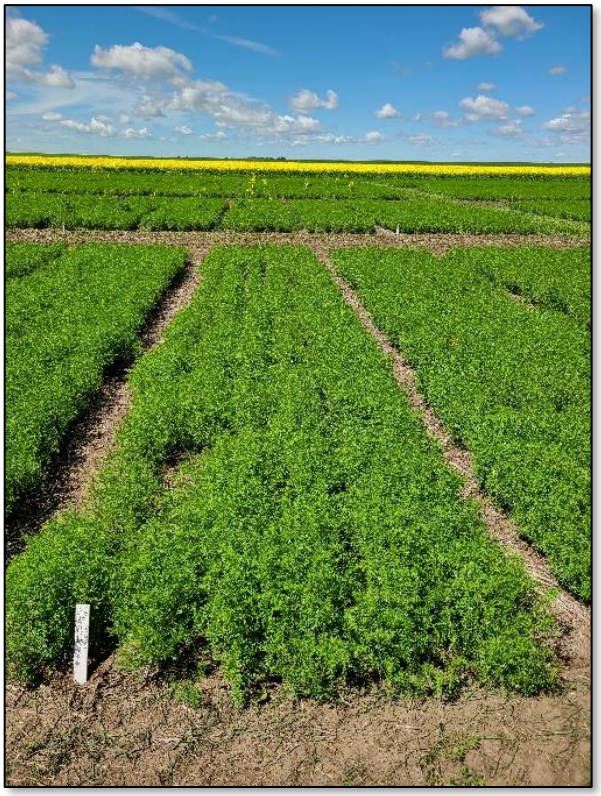
The control (Solo) and the spring-applied herbicide treatments Glyphosate, Glyphosate + Heat and Glyphosate + Goldwing were the least effective and inconsistent in controlling the three weed species in this study. Fall application of Focus followed by spring application of Heat + Glyphosate and fall application of Fierce followed by spring application of Goldwing + Glyphosate were found to be effective in controlling wild mustard. Herbicide treatments fall application of Valtera followed by spring application of Glyphosate, fall application of Fierce followed by spring application of Glyphosate, and fall application of Fierce followed by spring application of Goldwing + Glyphosate were found to be most consistent in controlling kochia. Canola was mainly controlled by fall application of Valtera followed by spring application of Glyphosate, fall application of Valtera followed by spring application of Glyphosate + Goldwing, and fall application of Fierce followed by spring application of Goldwing + Glyphosate. Fall application of Fierce followed by spring application of Goldwing + Glyphosate was found to be the most effective in controlling all three species. This herbicide combination showed greater residual activity as it was effective at all three weed growth stages assessed. Since this most effective treatment combination identified to control all three species and consists of multiple herbicide groups [Goldwing (group 4, group 14), Fierce (group 14, group 15), and Glyphosate (group 9)] it will help to slow down the resistance build-up to any particular herbicide mode of action. Further, this combination had 12% greater crop yields compared to the control treatment (Solo application).

Overall, this study confirmed herbicide application only in the spring was less effective than herbicide application both in the fall and spring, indicating herbicide layering can be an essential strategy to control these species. Further, this approach allows using of multiple modes of action resulting in slowing down the evolution of herbicide resistance. Therefore, based on the results of this study, we can recommend using herbicide layering of fall application followed by spring application of herbicides for better weed management and greater crop yields in lentils.

Spring Glyphosate

Fall Fierce; Spring Glyphosate & Goldwing





Visit our website for full reports on this project and many more!

PRODUCT DONATIONS

We would like to take the time to thank all of our product donors for the 2021 season. Without their generous donation of products, we would not be able to conduct the research that we do!

- Herle Seed Farm
- BASF
- Syngenta
- Nakonechny Seeds
- Smith Seeds
- DR Huber Farms
- Dutton Farms
- Gregoire Seed Farm
- Hyland Seed Farm
- Brad & Curtis Sander
- Bayer
- Nutrien Ag Solutions
- Novozymes
- Alpine
- Charabin Seed Farm
- Griffiths Farm
- Trent Zbeeshko

For more information about WARC, visit our website or follow us on social media!

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