Government of Saskatchewan

Agricultural Demonstration of Practices and Technologies (ADOPT)

FINAL REPORT

20150457

FLAX FUNGICIDE DEMONSTRATION

Funded by: The Saskatchewan Ministry of Agriculture under the Canada-Saskatchewan Growing Forward bi-lateral agreement

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Prepared by: Irrigation Crop Diversification Corporation (ICDC)

1. Project Title: Flax Fungicide Demonstration

2. Project Number: 20150457

3. Producer Group Sponsoring the Project: Irrigation Crop Diversification Corporation (ICDC)

4. Project Location(s):
SW36-27-7 W3M, South Saskatchewan River Irrigation District, SK.

5. Project start and end dates (month & year): Start: May 2016, End: December 2016

6. Project contact person & contact details: Joel Peru PAg; ICDC Irrigation Agrologist 306-867-5528.

Objectives and Rationale

7. Project objectives:

The objective of this project will be to demonstrate the yield benefit of applying foliar fungicide on flax to control pasmo on an irrigated field. This project will evaluate two different fungicide product's performance on flax in the Lake Diefenbaker Development Area and compare them to an untreated control.

8. Project Rationale:

Flax is a major irrigated crop in Saskatchewan, taking up 10% of the irrigated acres in the Lake Diefenbaker Development Area in 2015. Pasmo is a major disease in flax that can reduce yield by up to 30% in severely infected fields according to the Flax Council of Canada. The Flax Council has also stated that all surveyed flax fields in Western Canada have had traces of Pasmo. Enhancing returns from existing irrigation is a part of Saskatchewan irrigation strategy and effective disease management is a proven way to flax increase yield.

This project compared the benefits of two different fungicides, Headline (group 7) and Priaxor (group 7, 11). This will help give producers a comparison of these two products in order to help them choose which would fit best on their operation.

Under irrigated conditions, crops are more susceptible to disease due to higher amounts of moisture compared to dryland. The benefit of this project will be to promote the efficacy of foliar fungicide application to control disease and promote health in high yielding flax under irrigation. This project will demonstrate the economic and yield benefits of this practice.

Methodology and Results

9. Methodology:

Project Plan

Two fungicides, Headline and Priaxor, were applies on an irrigated flax field in the South Saskatchewan River Irrigation District. The producer applied the fungicide on two portions of the field and left a strip as an untreated control. The crop was monitored for disease development throughout the season. The yield was taking at harvest from the treatments and the control to determine the results of this project.

Bethune Flax was seeded on May 22nd on SW36-27-7 W3M. This site is has a Weyburn soil association and is a loam. The quarter section is irrigated with a low pressure pivot system. See table 1 for the agronomic and irrigation management for this site.

Table 1. Agronomic Management of Flax Fungicide Demonstration

Fertilizer	N	P
Banded	70lbs/ac	40 lb/ac
Fertigated	60 lbs/ac	
Seeding Rate	42lbs/ac	
Fungicide Application	July 20th (beginning of flowering)	
Priaxor Rate	160 ml/acre	
Headline Rate	180 ml/acre	
Rainfall	421 mm (16.5 inch)	
Irrigation	25 mm (1 inch)	
Harvest Date	November 9th	

10. Results

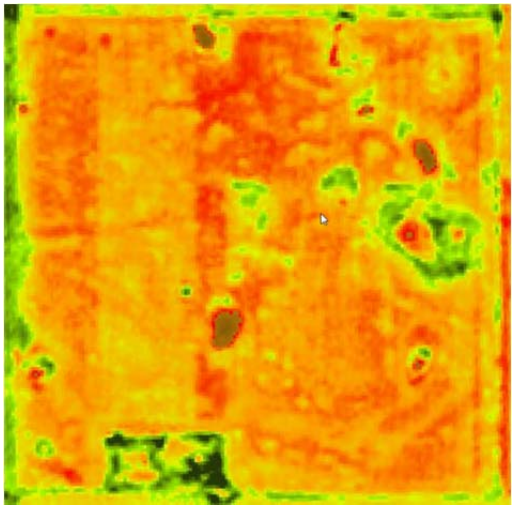
Yield was measured with a weigh wagon on November 9th. The results of this demonstration showed a large response to the fungicide application. The yield results are shown in Table 1 and show a 16.6 bu/acre response to Priaxor and an 18.9 bu/acre response to Headline. Figure 1 shows a significant difference in disease on August 25th when comparing the treated flax to the untreated. Figure 2 is a NDVI map provided by Farmers Edge which clearly shows the untreated control strip down the left side of the photo.

Table 2. Yield Results of Flax Fungicide Demonstration

Treatment	Sample Size (ac)	Yield (lb/ac)	Yield (bu/ac)
Control	0.266	901	22.5
Priaxor	0.317	1562	39.1
Headline	0.211	1656	41.4

Figure 1. Visual results of control (left) and treated (right) on August 25th

Figure 2. NDVI Map of Flax Fungicide Trial on September 3rd



Extension activities:

SIPA/ICDC 21st annual Irrigation Conference, December 6th-7th Location: Moose Jaw, SK. Estimated attendance: 50-70. Joel Peru will be going over this trial during the ICDC research and demonstration update at this conference.

Advertisement posters for the extension events noted above were created. A final report for this demonstration was created for the 2016 ICDC Research and Demonstration Program Report. Around 200 copies of this report will be printed and circulated to producers. This report is also available digitally on ICDC's website.

11. Conclusions and Recommendations

This project was designed based on Rory Cranston's work with ICDC in 2012 and 2013 which evaluated Proline and Headline on flax. This project was conducted during a very wet year with over 16 inches of rainfall during the growing season. This caused lodging in the field, especially on the control and a very late harvest date. The fungicide helped prevent disease incidence and lodging significantly which is what caused the high response in yield. The fungicide did delay harvest for this crop which contributed to the later harvest date. This project demonstrated that applying fungicide on flax under irrigation in Saskatchewan has the potential to give a very high yield response.

The small sample size and the abnormal moisture conditions for 2016 may have influenced the results of this trial. This project will be conducted again in 2017 to see if similar results can be obtained.

Supporting Information

12. Acknowledgements

The project lead would like to acknowledge the following contributors:

- Jay Anderson (Cooperator), Producer, ICDC Chair
- Glen Forser, BASF, for providing fungicide for this project.
- Kris Ewen, Farmers Edge, for providing NDVI mapping for this project.

Abstract

14. Abstract/Summary

This demonstration demonstrated the benefits of applying foliar fungicide on irrigated flax in Saskatchewan. It compared to different products, Headline and Priaxor to a untreated control. Pasmo is a very common disease that affects flax in our province and under irrigated conditions this disease can cause large yield loss. This project was conducted during a very wet year with over 16 inches of rainfall during the growing season. This caused lodging in the field, especially on the control and a very late harvest date. The fungicide helped prevent disease incidence and lodging significantly which is what caused the high response in yield. The fungicide did delay harvest for this crop which contributed to the later harvest date. This project demonstrated that applying fungicide on flax under irrigation in Saskatchewan has the potential to give a very high yield response.

This project was discussed at the 2016 SIPA/ICDC conference where all Saskatchewan irrigators are invited to attend. The results can also be viewed in the 2016 ICDC Research and Demonstration final report which will be available online.
