

ADOPT

Agricultural Demonstration of Practices and Technologies

Final Report – November 13, 2012

ADOPT Project #20110367

Agronomics of New Varieties of Midge Resistant Wheat

Contact Person: Curtis Braaten, Conservation Learning Centre

Phone: 960-1834

Email: curtis@conservationlearningcentre.com

Objectives:

To demonstrate the economic advantage of growing midge resistant wheat vs. conventional varieties. Wheat midge has caused producers significant losses in the past and these resistant varieties could replace the conventional cultivar and to increase production and protect the producer's bottom line.

Rationale:

Wheat midge has caused producers significant losses in the past and these resistant varieties could replace the conventional cultivar and to increase production and protect the producer's bottom line.

Materials and Methods:

On May 21, 2012, ten demonstration plots were seeded into oat stubble with four new midge tolerant varieties of Utmost, Vespar, Unity and Shaw, with the check of CDC Stanley. Seeding rate was 109lbs/acre with 80 lbs/acre of 60-20-0-15 placed with the seed treated with Vitaflow 280. MCPA was sprayed to control the weeds in the field at a recommended rate on June 15. The crop emerged on May 28th, eight days after seeding and was quite even. The plots showed excellent response to the increase in soil temperature and created a canopy very early. Our 2012 season was very humid during the development stages of this crop. Leaf diseases were minimal but to ensure some control, 135gram/acre of Proline was applied on July 6th. Field observations concluded that adequate control was achieved with the fungicide application. 21' x 76' test strips were harvested on Sept 21. Shaw showed the best yield with over 32% increase over the check variety CDC Stanley. All four varieties of midge tolerant wheat had significant increases in yield over the check. Our best samples were #2, with no samples reaching a #1 grade.



Results:

On Sept 15, samples were harvested with a 4ft Wintersteiger plot combine. Overall quality of samples was lower than expected, but appear to be consistent with the region average. None of our samples were graded #1. Overall results are shown below.

Shaw showed the best yield with a 32.5% increase over the check variety CDC Stanley.

Variety	Rep 1	Rep 2	Average Yield	% Increase over check
Stanley	23.6 bu/ac	27.6 bu/ac	25.6 bu/ac	check
Utmost	28.3 bu/ac	29.4 bu/ac	28.9 bu/ac	11.4 %
Unity	39.9 bu/ac	34.6 bu/ac	37.3 bu/ac	31.4 %
Vespar	31 bu/ac	31.9 bu/ac	31.5 bu/ac	18.73%
Shaw	38 bu/ac	37.8 bu/ac	37.9 bu/ac	32.45%

New variety trials are very popular with producers as their interest for the latest cropping variety options is steadily increasing. With crop rotations becoming more restricted as a result of increased canola acres, the producer is looking for other options that may be profitable enough to expand their rotations. The increase of sprayer applications has the producer looking for tools that may allow him to reduce the risk of applying insecticides with the use of a protected variety such as these. More producers are adopting these new and tolerant varieties, as they believe the added insurance and strong yields are justified. The CLC will continue to demonstrate this initiative with inclusion of even newer varieties as available. During our annual field day this year, midge tolerant wheat was one of the major highlights with producers, causing lots of discussion at the demo during the tour with even a couple of return visits from producers after the tour..

Supporting Information**Acknowledgements:**

We would like to express our gratitude to the Ministry of Agriculture for the funding support and in-kind support with this project. To recognize the ADOPT program and the Ministry we had signage at the sites.



Field Days:

- Conservation Learning Centre – Annual Field Day – July 17th - 45 people
- Conservation Learning Centre – Combine Clinic – Aug 9th – 55 produce
- Report on the project to be posted on our website
www.conservationlearningcentre.com

Abstract:

With wheat midge causing producers significant losses, this project was designed to show the advantages of growing midge tolerant varieties vs non tolerant varieties. May 21, 2012 saw us seed 10 demonstration plots into the black soil zone in the Prince Albert region. Utmost, Vespar, Unity and Shaw were tolerant varieties compared to CDC Stanley as the check. The crop emerged 8 days after seeding with excellent vigour. This last season was very humid with leaf disease being quite likely so an application of Proline was applied July 6th with adequate results. Field scouting determined economic thresholds were not achieved to justify spraying insecticides for control.

These plots were harvested Sept 15 with quality being lower than expected. No samples achieved a #1 grade which we feel is a cause of our growing conditions in 2012. All tolerant varieties of wheat showed an increase in yield over the check. Yields were from over 11% to a 32 % increase in yield with the tolerant varieties. Shaw was the variety that experienced a 32.5% increase in yield vs. CDC Stanley.

With these significant yield increases achieved with tolerant varieties, producers now have an opportunity to be more productive on the same acre base, while being provided with an added tool which may allow for less insecticide applications to control wheat midge.



Finances:*Budget reporting categories:*

	Year 1 (\$)	Total (\$)
Salaries and Benefits		
• Students/contracts	500	500
• Postdoctoral / Research Associates	350	300
• Technical / Professional Assistants		
Consultant Fees & Contractual Services	2000	2000
Rental Costs		
• Rentals		
Materials / Supplies	650	650
Project Travel		
• Field Work	200	200
• Collaborations/consultations		
Other		
• Field Day	100	100
• Administration	150	150
• Miscellaneous		
Total	3600	3600

