

Demonstrating Wheat Varieties and Blends Against Wheat Stem Sawfly Damage



Objective:

To evaluate the effectiveness of different wheat varieties and blends of those varieties on wheat stem sawfly damage.

Trial Design:

- This trial was conducted at Scott, SK in 2023.
- The treatments consisted of four different wheat varieties of varying stem solidness and two wheat variety blends (Table 1).

Table 1. Treatment list for "Demonstrating Wheat Varieties and Blends Against Wheat Stem Sawfly" in Scott, SK 2023.

TRT	Wheat Variety	Stem Solidness*
1	AAC Viewfield	Hollow
2	CDC SKRush	Hollow
3	CDC Landmark VB	Semi – solid
4	CDC Adamant VB	Solid
5	CDC Landmark VB & CDC Adamant VB & CDC SKRush	Blend 1:1:1
6	CDC Landmark VB & CDC Adamant VB & AAC Viewfield	Blend 1:1:1

*Stem solidness as classified in the 2022 Saskatchewan Seed Guide

Results:

- Wheat stem sawfly incidence ranged from 35-70% and followed the order of CDC SKRush > CDC Adamant VB > CDC Landmark VB & CDC Adamant VB & CDC SKRush > CDC Landmark VB > CDC Landmark VB & CDC Adamant VB & AAC Viewfield > AAC Viewfield (p=0.056).
- Wheat stem sawfly damage ranged from 11-24% and followed the order of CDC SKRush > CDC Landmark VB & CDC Adamant VB & CDC SKRush > CDC Landmark VB & CDC Adamant VB & AAC Viewfield > CDC Adamant VB > CDC Landmark VB > AAC Viewfield (p=0.007).
- Despite differences in wheat stem sawfly incidence, the mean yield of wheat varieties and blends did not significantly differ (p=0.086).
- All treatments in this study resulted in test weight for No.1 grade CWRS; however, significant differences were observed between varieties and blends

(p<0.001). The greatest test weight was recorded for AAC Viewfield at 81.8 kg/hL, and the lowest was recorded for CDC SKRush at 79.6 kg/hL.

- There was a significant negative correlation (r=-0.47; p=0.020) between wheat stem sawfly incidence and test weight, which indicates that increasing levels of wheat stem sawfly incidence results in decreasing test weights.
- All treatments in this study resulted in protein for No.1 grade CWRS. Minimal differences in protein were observed between varieties and blends (p=0.285), with protein levels ranging from 14.0-14.8%.

Conclusions:

Overall, significant differences were observed for wheat stem sawfly incidence (35-70%) and damage (11-24%). The level of wheat stem sawfly damage in this study was sufficient enough to cause reductions in test weight, but reductions in yield were minimal. Despite reductions in test weight, all treatments were considered No. 1 CWRS (> 75 kg/hL). Therefore, wheat stem sawfly damage less than 25% is not significant enough to cause yield or grade losses. However, the incidence levels observed in this study would cause concern for increased damage in the following year. Therefore, further investigations to determine the level of damage that would cause significant yield and grade reductions and understanding wheat stem sawfly population cycles would be beneficial for developing an economic threshold for producers.

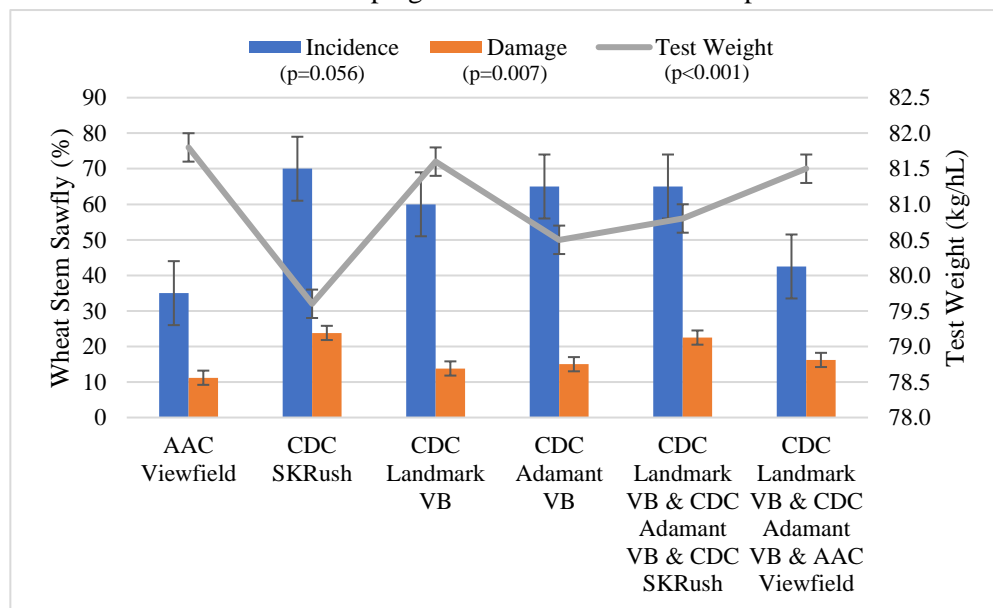


Figure 1. Wheat stem sawfly incidence (%) and damage (%), and test weights (kg/hL) for wheat varieties and blends at Scott, SK, 2023.

The full report is available at www.warc.ca. This project was supported by the Saskatchewan Wheat Development Commission (SaskWheat). WARC Project # 14-23
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