

A popular fungicide product used for the suppression of fusarium head blight (FHB) in Saskatchewan is Prosaro. The optimum timing of this product is at early anthesis and applications past this stage are ineffective. Proper timing to protect all heads is impossible if the timing of head emergence within the crop is highly variable. Increasing seeding rates of wheat is commonly recommended to increase the uniformity of heading and facilitate proper fungicide timing. Uniformity of heading is achieved by reducing the number of tillers which produce heads less mature than main stem heads. While no CWRS wheat varieties are truly resistant to FHB there are differences in susceptibility between varieties.

The objective is to demonstrate the level of fusarium head blight suppression possible through increasing seeding rate, proper varietal selection and proper timing of fungicide. Varieties differ in susceptibility to fusarium head blight and timing of fungicide to suppress FHB can be improved with higher seeding rates. This trail was conducted at Scott, SK in 2017 and was setup as a split-split plot with 4 replications. The first factor compared Prosaro at 50% anthesis vs no applied fungicide. The subplot factor compared the awnless CWRS varieties CDC Utmost VB with CDC Plentiful. CDC Utmost VB is rated moderately susceptible (MS) to fusarium head blight (FHB) whereas, CDC Plentiful is rated moderately resistant (MR). The sub-subplot factor contrasted seeding rates of 150, 300 and 450 seeds/m².

As a result of good starter soil conditions emergence did not significantly differ between varieties (table 1). Seeding rates of 150, 300 and 450 seeds/m² produced plant populations per m² of 121, 203 and 282. Unfortunately for this study, infection by fusarium head blight (FHB) was very low as a result of low precipitation. Fusarium damaged kernels (FDK) were usually well below the level of 0.25% which must not be exceeded to maintain a number 1 CWRS grade. As a result, no substantial differences were observed between treatments.

Though not statistically significant, yield was consistently higher where Prosaro had been sprayed. On average, yield increased from spraying fungicide was 2.3 percent. The yield increase is likely the result of suppressing leaf disease and not FHB. Increasing seeding rate also consistently increased yield with the effect being statistically significant. In turn, increasing seeding rate decreased protein levels due to dilution from increasing yield. The effect was found to be statistically significant. Lodging was not an issue this year due to midseason dryness.

Table 1. Main Effects of Emergence, Yield, FDK and Protein of Wheat at Scott^a

Main Effects	Emergence (plants/m ²)	Yield (kg/ha)	FDK (%)	Protein (%)
Fungicide (A)				
None	204 a	5503 a	0.04	11.4 a
Prosaro @ 50% anthesis	201 a	5631 a	0.21	11.4 a
Lsd _{0,05}	NS	NS	NA	NS
Variety (B)				
CDC Utmost VB (awnless; MS to FHB)	195 a	5477 a	0.21	11.7 a
CDC Plentiful (awnless MR to FHB)	209 a	5658 a	0.05	11.1 a
Lsd _{0,05}	NS	NS	NA	NS
Seeding rate (C)				
150 seeds/m ²	121 a	5320 a	0.08	11.7 a
300 seeds/m ²	203 b	5693 b	0.26	11.4 b
450 seeds/m ²	282 c	5689 b	0.05	11.1 b
Lsd _{0,05}	14.5	283	NA	0.31
Significant Interactions between main effects				
	NS	NS	NA	NA
7. No fungicide; AC AAC Brandon (awned MR to FHB); 300 seeds/m ²	196	5799	0	11.1
14. Prosaro; AC AAC Brandon (awned MR to FHB); 300 seeds/m ²	180	6063	0	11.8
^a Means within a main effect followed by the same letter are not significantly different p=0.05				

Full report at:

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