

# Factsheet: Managing Fusarium Head Blight in CWRS Wheat



## Objective:

The project objectives were 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.

## Methodology:

The study was conducted at Scott, Yorkton and Melfort. The first factor compared Prosaro at 50% anthesis vs no fungicide applied. The subplot factor compared the awnless CWRS varieties of CDC Utmost VB and 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/m<sup>2</sup>. This produced 12 treatments for this analysis. An additional 2 treatments which are not part of the statistical analysis were added to determine if there is reduced fungicidal efficacy on awned varieties (treatments 7 and 14).

#	Fungicide	Variety	Beard type	Fusarium resistance	Seeds/m <sup>2</sup>
1	none	CDC Utmost VB	awnless	MS	150
2	none	CDC Utmost VB	awnless	MS	300
3	none	CDC Utmost VB	awnless	MS	450
4	none	CDC Plentiful	awnless	MR	150
5	none	CDC Plentiful	awnless	MR	300
6	none	CDC Plentiful	awnless	MR	450
7	none	AAC Brandon	awned	MR	300
8	Prosaro	CDC Utmost VB	awnless	MS	150
9	Prosaro	CDC Utmost VB	awnless	MS	300
10	Prosaro	CDC Utmost VB	awnless	MS	450
11	Prosaro	CDC Plentiful	awnless	MR	150
12	Prosaro	CDC Plentiful	awnless	MR	300
13	Prosaro	CDC Plentiful	awnless	MR	450
14	Prosaro	AAC Brandon	awned	MR	300

## Key Findings:

- As a result of good starter soil conditions emergence did not significantly differ between varieties. Seeding rates of 150, 300 and 450 seeds/m<sup>2</sup> produced plant populations per m<sup>2</sup> 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.
- The low levels of infection also made it impossible to determine if awns on a bearded wheat interfered with the efficacy of Prosaro.
- 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 full report is available at [www.warc.ca](http://www.warc.ca). Project was supported by the Agricultural Demonstration of Practices and Technologies (ADOPT) initiative under the Canada-Saskatchewan Growing Forward 2 bi-lateral agreement AP-2003a-IHARF

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- 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 2. Main Effects of Emergence, Yield, FDK and Protein of Wheat at Scott <sup>a</sup>				
Main Effects	Emergence (plants/m <sup>2</sup> )	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 <sub>0.05</sub>	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 <sub>0.05</sub>	NS	NS	NA	NS
Seeding rate (C)				
150 seeds/m <sup>2</sup>	121 a	5320 a	0.08	11.7 a
300 seeds/m <sup>2</sup>	203 b	5693 b	0.26	11.4 b
450 seeds/m <sup>2</sup>	282 c	5689 b	0.05	11.1 b
Lsd <sub>0.05</sub>	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 <sup>2</sup>	196	5799	0	11.1
14. Prosaro; AC AAC Brandon (awned MR to FHB); 300 seeds/m <sup>2</sup>	180	6063	0	11.8
<sup>a</sup> Means within a main effect followed by the same letter are not significantly different p=0.05				