FHB Risk Model University of Manitoba – Barley, Durum, Spring Wheat, Winter Wheat

Project duration: September 2019 – August 2021
Objectives: To increase understanding of resulting Fusarium Head Blight (FHB) infection for spring and winter wheat, barley and durum based on the current model.
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Background
Farmers need improved decision-making tools in order to assess the local risk of Fusarium Head Blight (FHB). Better tools would improve judgement on whether or not to use fungicide and how to time application. The project recognizes that the current model for predicting the presence of FHB is insufficient and is gathering data across the province for different treatment plans using both known fusarium resistant and fusarium susceptible varieties.

This project design centred on learning more about how spore density in the air at specific times of plant maturation affected FHB infection. The specific window of interest is during flowering and up to five days before flowering.

Results
Grain samples sent away to analyze for grading, fusarium species assessment, and mycotoxin analysis. PCDF will post a link when this report is available.

Materials and methods
Entries: 3 varieties for each winter wheat, spring wheat and barley; 1 variety for durum
Seeding: Winter wheat seeded 09.18.20; barley, spring wheat and durum seeded 05.13.21
Harvest: 08.25.21

Table 1: Varieties in 2021 FHB Trial

Winter Wheat	Spring Wheat	Barley	Durum
Moats	AAC Elie	CDC Copeland	Strongfield
AAC Gateway	AAC Brandon	AAC Connect	
Emerson	Muchmore	AAC Synergy	

Data collected Date collected
Plant Counts: Three leaf stage (and spring emergence for winter wheat)
Plant Staging: Weekly staging beginning at late booting through late flowering
Spore Traps: Beginning just before winter wheat flowering spanning five weeks and covering all cereals flowering
FHB sampling: 18-21 days after flowering – Enumeration of FHB afflicted kernels per head in a given sample size of fifty heads per plot
Heights: Aug 5
Yield: Aug 31
Moisture: Aug 31

Agronomic info
Previous year's crop: Oat Silage

Soil Type: Erickson Clay Loam
Landscape: Rolling with trees to the east
Seedbed preparation: Tilled once and then harrowed

Table 2: Fertility Information for Barley, Wheat, and Durum

	Available	Added for Barley	Added for Wheat	Added for Durum
N	93 lb/ac	83 lb/ac	96 lb/ac	96 lb/ac
P	46 ppm	10 lb/ac	10 lb/ac	10 lb/ac
K	709 lb/ac	-	-	-

Table 3: Fertility Information for Winter Wheat

	Available	Added
N	52.7	105
P	70.5	20
K	410.0	-

N side banded; P banded with seed

Table 4: Herbicide Application

Crop stage	Date	Product	Rate	
Pre-emerge	Sep 12	Glyphosate	640	ml/ac
		Heat	28	g/ac
In-crop	Jun 14	Curtail M	810	ml/ac
		Puma	271	ml/ac