

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

**Project duration:** September 2019 – August 2020

**Objectives:** To increase understanding of resulting Fusarium Head Blight (FHB) infection for spring and winter wheat, barley and durum based on the current model.

**Collaborators:** Manasah Mkhabela PhD., Research Associate University of Manitoba Soil Science

### 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 09.12.19; barley, spring wheat and durum seeded 05.15.20

**Harvest:** Aug 19, 2020

Table 1: Varieties in 2020 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 19

**Moisture:** Aug 19

**Agronomic info**

**Previous year's crop:** Barley Silage

Soil Type: Erickson Loam Clay  
 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	71 lb/ac	53 lb/ac	118 lb/ac	118 lb/ac
P	50 ppm	10 lb/ac	10 lb/ac	10 lb/ac
K	556 lb/ac	-	-	-

Table 3: Fertility Information for Winter Wheat

	Available	Added
N	39.1	96
P	75.5	15
K	132.0	-

*N side banded; P banded with seed*

Table 4: Herbicide Application

Crop stage	Date	Product	Rate
Pre-emerge	Sep 12	RoundUp	0.67 L/ac
	May 26	Axial	0.5 L/ac
		Prestige XC	0.18 L/ac
In-crop Spring Cereals	Jun 22	Prestige XC-A	0.17 L/ac