

Summary of Wheat Diagnostic Analysis, 2021-22

Funded by Michigan Wheat Program

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Twenty-nine wheat samples, from thirteen counties, were submitted to the lab for diagnostic evaluation. These samples were submitted by MSUE educators, agribusiness professionals, and growers. Each sample was examined for signs of disease and abiotic issues. Three samples were tested with ELISA tests for four specific pathogens. A list of diagnoses, and the incidence, is included below; note that some samples had multiple diagnoses. The distribution of the sample origins is also shown below.

Several samples submitted in the fall had bunt. There are several different bunt fungi associated with wheat, some of which are difficult to distinguish. A significant amount of time and consultation with Dr. Marty Chilvers and others was invested to identify the pathogens involved.

Several samples with viral symptoms were submitted. Wheat spindle streak, wheat streak mosaic, and barley yellow dwarf were detected in wheat samples. Viral pathogens of wheat require different management strategies than fungal or bacterial pathogens.

Again this year, several of the wheat samples submitted had symptoms caused by nutritional deficiencies and/or high or low soil pH levels. When wheat samples were submitted with symptoms suggestive of a nutrient deficiency a subset of the samples was forwarded for nutrient testing. Where possible soil and/or tissue from both “good” and “bad” areas of the field were submitted. This greatly enhanced diagnostic testing and the value of the results.

Wheat Diagnoses

Stagonospora	Environmental/cultural factors
Powdery mildew	High pH
Dwarf bunt	Low pH
Loose smut	Phytotoxicity
Wheat streak mosaic virus	Nutrient imbalance
Wheat spindle streak	
Barley yellow dwarf – pav	

Counties of Sample Origin

Allegan	Barry	Branch
Charlevoix	Gladwin	Grand Traverse
Huron	Ingham	Ionia
Montcalm	St. Joseph	Sanilac
Van Buren		