Summary of Wheat Diagnostic Analysis, 2019-20

Funded by Michigan Wheat Program

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Eighteen samples, from seven 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. I created a chart with various images and morphological traits needed to identify these. This information was shared with my colleagues at MDARD, MSU and the North Central Region of the National Plant Diagnostic Network (NCPDN). Symptoms similar to those caused by bacterial mosaic were further investigated by Dr. Marty Chilver's research program.

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

Diagnosis
Dwarf bunt
Stinking smut
Rhizoctonia crown and stem rot
Take all
Environmental/cultural factors
Cephalosporium stripe
Bacterial mosaic
High pH
Pythium root and crown rot
Low pH

Counties of Sample Origin

Fulton	Grand Traverse	Huron
Ingham	Lenawee	Monroe
Saint Clair	Saint Joseph	Sanilac