

Summary of Wheat Diagnostic Analysis

Funded by Michigan Wheat Program
 Jan Byrne, MSU Diagnostic Services
 Spring – Summer 2013

Twenty-six samples, from eleven counties, were submitted to the lab for diagnostic evaluation. These samples were submitted by MSUE extension educators, agribusiness professionals, and growers. Each sample was examined for signs of disease, nematodes, and abiotic issues. Many of the samples were also analyzed with ELISA tests for eleven viral and one bacterial pathogens of wheat (this testing was done by an outside laboratory).

Eight of the twenty-six samples submitted had symptoms that were attributed to nutritional deficiencies and/or high or low soil pH levels. Plant parasitic nematodes were detected in several of the samples; however based on the numbers recovered they were not the primary cause of the symptoms on the wheat samples. Two different viruses were detected. Barley yellow dwarf (species PAV) was confirmed in three samples from Sanilac and Ingham counties. Wheat streak mosaic was confirmed in one sample from Ingham County. Bacterial mosaic (*Clavibacter michiganensis* subsp. *tessellarius*) was confirmed in four samples; these samples were from Presque Isle and Sanilac counties. Tan spot (*Drechslera tritici-repentis*) was detected in one sample; this potentially serious disease of wheat had not been recently diagnosed in Michigan wheat. A list of diagnoses, and their incidence, is included below; note that some samples had multiple diagnoses. The distribution of the sample origins are also shown below.

Incidence of Diagnosis

Diagnosis	Number of Samples
Nutrient related issues	3
High or low pH	5
Cold/freeze damage	2
Chemical issue suspected	1
Cultivar trait	1
Rhizoctonia root rot	2
Take all	1
Pythium root rot	2
Stagnospora blotch	1
Tan spot	1
Powdery mildew	1
Bacterial mosaic	5
Barley yellow dwarf – PAV	3
Wheat streak mosaic	1

Geographic Distribution of Samples

