Diagnostics of Wheat Samples

Jan Byrne

MSU Plant & Pest Diagnostics
Review of the last year

- Approximately 25 samples
- Increase in a few diseases
- Continue to see nutrient related factors
Diseases

• *Tilletia sp.*
  – Common bunt
  – Dwarf bunt

• Impacts
  – Regulatory
  – Management
  – Microbrewery
Tilletia diagnostics

- Morphology
- PCR
Diseases

• Wheat Spindle Streak

• Wheat Streak Mosaic

Viruses detected in Michigan wheat

Jan Byrge, Michigan State University Plant & Pest Diagnostics, and Martin Chilvers, Michigan State University Department of Plant, Soil and Microbial Sciences - June 21, 2021

Act now for diagnosis of wheat streak mosaic virus and wheat spindle streak mosaic virus.

Symptoms of wheat streak mosaic virus. Photo by MSU Plant & Pest Diagnostics.
Nutritional

- Many of the samples submitted
- Low pH related
- High pH
Funding proposed to continue to program

- Maximum 45 diagnostic samples
  - 5 samples for nematode analysis
- In-house ELISA testing for 4 pathogens
  - based on diseases found in previous years
    - BYD – pav
    - BYD – mav
    - WSM
    - WSSM
- 5 samples Agdia wheat screen
Funding proposed to continue the program

• Nutrient Testing
  – Testing to be done by A&L Great Lakes labs
    • Facilitate sample handling and rapid turn around
    • Manganese, sulfur, zinc
  – 10 samples
    • Soil nutrient analysis
    • Tissue nutrient analysis

  – Shipping costs from field and lab

  – Nutrient testing for samples collected by Dennis
• MSU Plant & Pest Diagnostics bills the MI Wheat Program for work done annually