

PI: Eugene Milus

PI's E-mail: gmilus@uark.edu

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Research Category: MGMT

Duration of Award: 1 Year

Project Title: Efficacy of Fungicides against NIV Chemotypes of *Fusarium graminearum*.

PROJECT 2 ABSTRACT

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Fungicide application can reduce FHB severity and mycotoxin levels in grain if highly effective fungicides are applied at the optimal time. NIV chemotype isolates of *Fusarium graminearum* are prevalent in south-central United States, but nearly all fungicide evaluations for Fusarium head blight (FHB) have been conducted using DON chemotype isolates. The effect of fungicides on FHB and nivalenol (NIV) levels will be evaluated on a susceptible wheat cultivar in a field inoculated with NIV chemotype isolates that is isolated from other sources of inoculum. The field will be inoculated using infested corn kernels and mist-irrigated to promote ascospore development, floret infection, and disease development. The experimental design will be a randomized complete block with a minimum of 4 replications. Plot size will be 5 ft wide × 12 ft long. Fungicide treatments selected by the committee will be applied at 20 gallons per acre using a spray boom equipped with forward- and backward-facing nozzles (30° from the horizontal).

At soft dough (Feekes 11.2), FHB incidence and severity will be assessed for each plot by examining 50 heads per plot, and FHB index will be calculated. Additionally, incidence and severity of foliar diseases will be assessed on the flag leaves at the same time. Plots will be harvested to determine yield, and grain samples from each plot will be evaluated for percentage Fusarium-damaged kernels. Grain samples from each plot will be sent to the USWBSI-funded mycotoxin laboratory in Minnesota for DON and NIV analyses. Data will be analyzed, and the results sent to the coordinator of the CP. The outcome of this research will provide data for choosing fungicides and application timings to maximize efficacy against FHB and mycotoxins in grain.