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Project Title: Establishing Sensitivity of *Fusarium graminearum* Isolates to Fungicides.

PROJECT 2 ABSTRACT

(1 Page Limit)

Fusarium graminearum, causal agent of Fusarium Head Blight (FHB) continues to be an important disease of wheat and barley production in the United States. Current management recommendations for producers incorporate cultural methods, moderately resistant varieties, and fungicide applications. The DMI triazole group of fungicides is most efficacious at reducing the impact of FHB and DON, and used in combination with a moderately resistant variety to reduce the levels of FHB and DON in production settings. The widespread use of triazole fungicides for FHB management could potentially impact the pathogen biology of *F. graminearum* by selecting for less sensitive isolates already present in the pathogen population. The goal of the proposed research is to characterize the current sensitivity of *Fusarium graminearum* populations on wheat across the Midwest. The specific objectives for this work are to: 1) establish current sensitivity of *F. graminearum* isolates to the triazole fungicides metconazole, prothioconazole, and tebuconazole; 2) compare current sensitivity distributions of *F. graminearum* isolate sensitivity to fungicide sensitivity profiles of historic isolates. In vitro laboratory assays will be conducted to determine isolate sensitivity of *F. graminearum* for metconazole, prothioconazole, and tebuconazole. Isolates will be screened on fungicide-amended media and percent inhibition of isolate growth by each fungicide will be used to calculate individual EC₅₀ values for each *F. graminearum* isolate tested. EC₅₀ values will be used to examine isolate sensitivity across locations and years. It is expected that in vitro isolate sensitivity of *F. graminearum* to triazole fungicides will vary by location and year of collection. These results will help us understand in what regions we may see differences in levels of fungicide efficacy, and determine if there are certain locations or where the *F. graminearum* population is changing in response to recommended management practices that include fungicide applications.