Project Abstract

Project Title:	**Assessment of Fungicide Sensitivity in Field Populations of Fusarium Causing FHB**	
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Co-Investigator:	**Martin Chilvers**	**Michigan State University**

Control of FHB primarily relies upon the application of a demethylation inhibitor (DMI) fungicide at 50% flowering and the utilization of a FHB-resistant cultivar. Recently, fungicides labelled for control of FHB also contain fungicides in the succinate dehydrogenase (SDHI) class. Studies on the baseline sensitivity of *Fusarium* species causing FHB across the UnitedStates to SDHI fungicides and the DMI fungicides have not been conducted, though some research localized to particular geographies has been completed. *A national effort is needed to evaluate* Fusarium *species for resistance to SDHI and DMI fungicides to minimize risk and reduce losses resulting from fungicide resistance development.* The goals of this research areto identify differences in sensitivity to SDHI and DMI fungicides present between historical Fusarium isolates and those thathave been exposed to new chemistries (e.g., Miravis Ace, Prosaro Pro) as well as geographical differences in resistance that may exist.

The objectives of this research are:

Objective 1. Establish centralized testing locations and protocols for fungicide sensitivity testing for Fusarium isolates as part of the USWBSI

Objective 2. Develop baseline sensitivity and associated virulence of current and historic isolates of Fusarium toSDHI and DMI fungicides collected from FHB symptomatic wheat in US wheat production areas

Objective 3. Place unique and/or valuable isolates into a national storage facility to facilitate collaborationbetween MGMT and PBG RACs

The research approaches to be utilized to accomplish the project goals within the period of proposed work include theestablishment of two core fungicide resistance testing facilities (one at Michigan State University, one at University of Delaware) with standardized protocols where isolates will be collected, identified, mycelial plate assays and conidial germination assays will be conducted, and a greenhouse virulence assay will be completed. These methods will be based onpreviously published research methodologies and will be standardized across sites.

End-user benefits of this research include: facilitate interdisciplinary collaborations with members of the PBG group of theUSWBSI and result in the development of centralized testing facilities for fungicide resistance. Additionally, geographical distribution of fungicide resistant isolates will be utilized as tool to improve the FHB risk model. Summary results of these studies will be published on the USWBSI website, at the FHB forum, in Extension publications and published in peer-reviewed journals.