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**Project Title:** Integrated Disease Management for FHB and DON in Missouri

### PROJECT 1 ABSTRACT

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Substantial yield losses are often attributed to Fusarium head blight (FHB) in Missouri wheat producing regions when conditions are favorable. To reduce losses from FHB, an integrated disease management program which utilizes both genetic resistance and a well-timed fungicide application is recommended, though fungicide options have generally been limited until recently.

The primary goal of this research is to gain a better understanding of the performance of the new fungicide Miravis<sup>®</sup> Ace on FHB development and deoxynivalenol content as part of an integrated FHB management program in Missouri. The two objectives that will be primarily addressed by these experiments are: 1) validation that, like has previously been reported for Prosaro<sup>®</sup> and Caramba<sup>®</sup>, the greatest reductions in DON and FHB index are observed when an application of Miravis Ace is coupled with a moderately resistant cultivar and 2) an evaluation of an early application time (Feekes 10.3) of Miravis Ace and the impacts on FHB index and DON content as compared to the industry standards Prosaro and Caramba. FHB index, DON, FDK, foliar disease severity, yield, and test weight will be collected for all experiments within season or shortly following harvest each year.

To accomplish these goals, field experiments will be established in the fall of each year at each of two locations in Missouri. Through utilizing multiple environments and multiple FHB-resistant varieties in these studies, it is expected that differing FHB and DON levels will be achieved. Data generated by these experiments will be used to improve recommendations and will aid in the development of relevant, timely integrated FHB management information for Missouri producers. In addition, results of these trials will be used to contribute to a national dataset used to improve our understanding of integrated FHB management strategies across environments and for the improvement and validation of the FHB risk assessment tool.