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Project Title: Uniform Fungicide Biocontrol Tests for Fusarium Head Blight Management Proposal.

PROJECT 5 ABSTRACT

(1 Page Limit)

Biological control methods are needed to augment cultivar resistance and fungicide strategies for management of Fusarium head blight (FHB) and deoxynivalenol (DON). A number of experimental biological control agents have been found to have promise against FHB in individual field tests and new commercial biocontrol products are becoming increasingly available for other diseases. Efficacy of these organisms must be demonstrated across a range of classes and cultivars of wheat and barley and under different environmental conditions in order to identify the best organisms for commercial development and deployment. This is a multi-PI, multi-state collaborative project that addresses the FY09 MGMT research priority: "Develop the next generation of management tools for FHB/DON control". The objective is to provide field evaluations of biological control agents or biologically-based products for control of FHB and DON on different market classes of wheat and barley in different environments using standardized methods. Tests will be conducted in four states: Nebraska, North Dakota, South Dakota, and Missouri (funding for Missouri trials are being requested in a separate preproposal). Pathogen inoculum will be provided in the form of natural corn residue or infested corn kernels and mist irrigation will provide high moisture levels to favor disease development. Standardized methods for applying each treatment and for determining disease and DON control efficacy will be employed. Data will be compiled from all test sites and collective results reported. Treatments will be selected through a meeting of project participants with biocontrol researchers and industry representatives. It is expected that some of the treatments will include experimental agents (along with associated application and formulation systems) applied alone and in combination with the new fungicide Prosaro. Newly available commercial biocontrol agents also will be tested. Project researchers have conducted experiments as part of the Uniform Biological Control Tests since 2004 or have actively participated in the testing of fungicides for FHB and DON control. Therefore, this assembled team is well situated to provide continuing contributions to the identification of effective biological control agents for FHB.