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Research Category: MGMT

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Project Title: Evaluation of Biological Agents for FHB Control.

PROJECT 1 ABSTRACT

(1 Page Limit)

This coordinated project addresses goals 2 and 4 of the Fusarium Head Blight (FHB) Management Action Plan: 2) develop the next generation of management tools for FHB/DON control; and 4) enhance communication and end user education/outreach. Within the coordinated project, there are two sub-projects: i) Uniform Fungicide Tests; and ii) Uniform Biocontrol Agent Tests. The overall objective of the whole project is to identify the most efficacious fungicide and biological materials for use across all barley and wheat market classes and growing environments. One of the key strengths of the whole project is the wide geographical distribution of research sites and number of different small grain classes in which these trials will be conducted. Certainly, there is “strength in numbers”, and when FHB management recommendations are developed, it is important that data collected across multiple environments can be used to help make those recommendations. Data collected from uniform trials conducted in previous years that were supported by the USWBSI have been used to help support many new fungicide registrations. In fact, in the 2009 season, small grain producers in several states will have access to multiple fungicide products with good efficacy against FHB. Under moderate to severe FHB pressure, however, the current fungicides available still do not give 100% control of FHB or DON. Evaluating new chemistries and mixtures of chemistries along with biological agents will provide new information that can be used to “develop the next generation of management tools for FHB/DON control”.

Gary Yuen and associates at the University of Nebraska-Lincoln will collaborate in the Uniform Biocontrol Agent Tests. Standard procedures as described for the coordinated project will be followed with these exceptions and additions:

1. There will be two experiment sites (experiments) – Agronomy research facility in Lincoln, NE; UNL Agricultural Research and Development Center (ARDC) near Mead, NE. ARDC is located approx. 40 miles north of Lincoln, and is distinguished from the Lincoln site by its soil type and by weather patterns (typically windier and greater precipitation in the summer than Lincoln). Misting systems will be set up in both sites to provide a minimum of 12 hours of wetness each night for 2 weeks following the initiation of anthesis. Scab susceptible hard red winter wheat ‘2137’ will be planted in both sites. Pathogen inoculum will be provided in the form of Fusarium colonized corn kernels.
2. The Yuen laboratory will be responsible for assaying population levels of the biocontrol control agents in spray liquids and treated head samples submitted by every participant. These efforts will entail a) development of a selective medium for each biocontrol agent if none is available; b) distribution of sampling and shipment instructions to each participant; c) analysis of samples by dilution plating onto biocontrol agent selective media; d) statistical analysis of data and reporting results to project coordinator.