

PI: Yuen, Gary Y.

PI's E-mail: GYUEN1@unl.edu

Project ID: FY07-YU-017

FY06 ARS Agreement #: 59-0790-6-072

Research Area: CBCC

Duration of Award: 1 Year

Project Title: Control of Fusarium Inoculum Production in Crop Residue.

PROJECT 1 ABSTRACT

(1 Page Limit)

Host resistance and fungicides can individually provide partial control of Fusarium head blight and DON formation. More complete control will require the integration of strategies to reduce inoculum production in residue from previous crops with host resistance, and fungicides applied to heads to prevent infection. The goal of this project is to test new strategies to reduce pathogen inoculum production in infested crop residue. The project objectives are: 1. to determine the effects of physical processing (chopping) of corn residues on saprophytic growth and sporulation of *Fusarium graminearum* in the residue and on development of Fusarium head blight in the following wheat crop; 2. to evaluate commercially available fungicides and biological control agents as spring applications to disrupt the sporulation process in *F. graminearum* and reduce the development of Fusarium head blight. Physical processing of residue will involve fine chopping in the fall, accomplished through mowing combine heads currently used by producers to manage residue levels. Select fungicides and biological agents will be evaluated in the field as spring treatments to target pathogen sporulation in infested residue. This project addresses the Biocontrol Advancement priority in the CBCC research area in that commercially available biological control agents registered for other crop uses will be evaluated for a novel application, namely the inhibition of inoculum production in residues. This project also addresses the Integrated Disease Management priority in that physical processing of residue will be evaluated in combination with commercial fungicides and biocontrol agents. This project was created in collaboration with scientists at two institutions. Field experiments were planned with similar designs, with some of the treatments being the same across all locations. Thus, the effectiveness of these treatments can be assessed across different wheat market classes and geographic environments. All of the procedures that will be tested are currently in use in cereal production or are available in other cropping systems. Thus, any strategy demonstrated in this project to be promising can be implemented by small grain producers immediately or after modification of labels.