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**Project ID: FY12-HW-001**

**ARS Agreement #: 59-0206-1-116**

**Research Category: HWW-CP**

**Duration of Award: 1 Year**

**Project Title: Verification of the Value of Genetic Resistance and Fungicides on the Control of FHB in Winter Wheat.**

### **PROJECT 1 ABSTRACT**

(1 Page Limit)

FHB control requires an integrated approach. The integration of resistant varieties and fungicides may provide the desired level of FHB control, particularly in years of high disease pressure. Experiments will be conducted at the Carrington Research Extension Center in central North Dakota under a mist system that was developed in 2011. These experiments will be planted after barley which will increase the likelihood of FHB development. The varieties to be planted will include the most FHB resistant released winter wheat varieties (Everest, Lyman and Overland), the susceptible check Jerry (most commonly grown variety in ND), and three advanced lines that have been specifically developed for scab tolerance that are approaching release. In 2012/13 this will include Wesley backcrosses with Sumai 3 resistance and MSWW-13-001. These materials will be grown in a split-plot arrangement where fungicide for FHB control will be the main plot and variety the subplot. Corn spawn inoculum will be applied prior to flowering. The fungicide factor will consist of no fungicide and Prosaro applied at Feekes 10.5.1. Plots will be 5 ft wide by 10 feet in length (yield plot size). Main plots will be separated by a 5 foot alley to avoid spray drift into the non-fungicide plots. A non-strobilurin fungicide will be applied at Feekes growth stage 8 to control other foliar diseases to reduce potential confounding of yield loss associated with other diseases and that of FHB. Notes will be taken on FHB incidence and severity. Yield, test weight, protein, and DON levels will be quantified after harvest. Data will be presented at regular extension meetings where FHB is discussed and shared with collaborating scientist in the hard winter wheat region. The results minus the experimental lines will be posted on the web with other yield trials. These data will also be used to determine the level of resistance of varieties that are listed on ScabSmart.