

**PI: Neate, Stephen M.**

**PI's E-mail: [stephen.neate@ndsu.edu](mailto:stephen.neate@ndsu.edu)**

**Project ID: FY08-ST-081**

**FY08 ARS Agreement #: 59-0790-8-071**

**Research Category: BAR-CP/MGMT**

**Duration of Award: 1 Year**

**Project Title: Development and Validation of FHB and DON Prediction Models for Barley.**

## PROJECT 2 ABSTRACT

Fusarium head blight (FHB) continues to be a serious problem for malting barley growers in the U.S. and Canada. The most effective management of this disease occurs when an integrated approach is taken that combines a resistant variety, appropriately timed fungicide application, and the management of in-field inoculum. However, the currently available tools are not feasible in all situations, nor completely effective at limiting disease or mycotoxin accumulation in grain; therefore, additional strategies need to be investigated in order to reduce the impacts of this disease on wheat and barley production.

Currently, no predictive systems are in place for barley and the need exists in many locations in the U.S. With the limited options available for chemical control of FHB and the low level of resistance in adapted varieties, additional management tools are needed. We propose to develop predictive models specifically for barley that utilize weather in the forecasting of FHB disease severity and DON accumulation.

The ND component of this project conducts replicated field trials on commonly grown varieties of 2-rowed and 6-rowed barleys at several sites across the state and collects disease, DON, agronomic and climatic data for use in model development. Specific project objectives for the whole project are: 1) contribute to the development of an experimental database containing information on cultural practices, weather, and resulting field disease and mycotoxin levels for barley and 2) conduct variable exploration and model development for FHB and DON accumulation in barley.