

**PI: Erick De Wolf**

**PI's E-mail: dewolf1@ksu.edu**

**Project ID: FY16-DE-023**

**ARS Agreement #: 59-0206-6-015**

**Research Category: MGMT**

**Duration of Award: 1 Year**

**Project Title: Continued Deployment of Prediction Models for Fusarium Head Blight.**

## **PROJECT 2 ABSTRACT**

(1 Page Limit)

The disease forecasting models deployed via the Fusarium Head Blight (FHB) Prediction Center help farm managers evaluate the risk of disease and the need for fungicide applications as part of the integrated management of FHB and DON. While we have already made considerable progress in model deployment, additional projects are needed to ensure the continued delivery of these decision tools, further improve the utility, and adoption of these important tools for FHB management. Our specific objectives for FY16-FY17 include: Continued deployment of the disease prediction models in 30 states including the support of the state commentary tools, FHB Alerts and the web-page information explaining the models. 2. Continued support of the back-up system for improved system stability. 3. Refine a version of the FHB Prediction Center for use with mobile devices (cellular-based mobile/"smart" phones and tablets). 4. Redesign of the expert tools to allow disease specialists to record and display disease observations – for refinement in the delivery of the current and experimental models. 5. Modification of the public web-based tools to improve functionality and compatibility of the Prediction Center. 6. Verify model inputs and improved capacity for site-specific predictions. 7. Implement a user survey to document value of the prediction system and its impact on stakeholders. To accomplish these objectives we propose to use the Real Time Mesoscale Analysis, supplemented with the improved observational dataset known as the Un-Restricted Mesoscale Analysis provided by NOAA's National Weather Service, to produce the daily maps of disease risk at a 2.5 km spatial resolution in the 30 states. The system will also use hourly reporting weather stations maintained by the NWS, and independent networks of weather stations from Agricultural Weather Networks. A state commentary feature will be available for all states covered by the disease prediction effort. The commentaries will be displayed along with maps of the disease risk and distributed through the FHB Alert System. We propose to add new features to the expert tools that will enable disease specialists to develop maps of disease levels throughout the US that can be used to verify current models and test the next generation of prediction models. We propose to organize training sessions that will help specialists gain experience with the prediction models. At the close of each season, a user survey will be implemented to assess the value of the prediction system and its impact on stakeholders of the USWBSI.