PI: Erick DeWolf	**PI's E-mail:** dewolf1@ksu.edu
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PROJECT 1 ABSTRACT
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The disease forecasting models deployed via the Fusarium Head Blight Prediction Center help farm managers evaluate the risk of disease and the need for fungicide applications as part of the integrated management of Fusarium head blight (FHB) and deoxynivalenol (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 tools for FHB management. This project addresses the FY20-21 MGMT Research Priorities No. 2 & 4: "Help develop and validate the next generation of management and mitigation tools for FHB and mycotoxin control"; and "Enhanced communication and end user education/outreach". Our specific objectives for FY20-21 include: 1. 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. Refine and maintain web based tools to ensure they are compatible with the latest web browsers and mobile technologies (cellular-based mobile/"smart" phones and tablets); 3. Estimating historical risk of FHB epidemics throughout the US; 4. Modifying the expert tools used to test experimental models before public deployment; 5. Implement a user survey to document value of the prediction system and its impact for stakeholders. 6. Model verification and testing in MT, and ID. 7. Testing of the model for malting barley in Eastern US. 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. 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 can be used to verify current models and test the next generation of 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.