

0203-DE-024 Fusarium head blight prediction models and *Gibberella zeae* perithecia development.

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PROJECT ABSTRACT

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Fusarium head blight has been an important disease in many wheat production regions of the United States including Pennsylvania. Epidemiological factors critical to the development of new management options and a more precise disease forecasting system are currently unavailable. Development of a disease forecasting system that could provide producers with a reliable prognosis of disease and timely management recommendations is desirable. Replicated plots of wheat and barley have been established in Pennsylvania to monitor environmental conditions and daily inoculum levels associated with disease. This quantitative information will be used to develop and deliver risk assessment models and other forecasting systems for Fusarium head blight. Sensor technology that will allow continuous evaluation of crop residue moisture status will be used to examine the influence of temperature and residue moisture on the development of *Gibberella zeae* perithecia in both controlled and field environments, and ultimately predict major inoculum release events. Pennsylvania State University will serve as the center for organization of the cooperative forecasting effort including Ohio, Indiana, North Dakota and South Dakota, and will summarize, compile and analyze weather, and inoculum monitoring information from each location. Information from the proposed research will be used to develop, validate and deploy disease-forecasting systems for multiple wheat production regions.