0203-FR-053 Pathogen Population Dynamics, Inoculation, and Temporal Progress of FHB.

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PROJECT ABSTRACT
(1 Page Limit)

Current disease management for Fusarium head blight (FHB) is limited primarily to a small number of moderately resistant cultivars and fungicide application. This lack of resistance in certain classes of wheat and barley has resulted in the industry becoming displaced from traditional areas of production. Clearly, FHB management practices need to be augmented by disease advisories. However, predictive models are not yet proven for deployment and further research is needed to provide producers and their advisors with timely recommendations of potential disease development. The proposed research would gather field data on inoculation events, infection, and disease development as well as environment so that disease phenomena can be correlated with environmental patterns. Information from the North Dakota site will complement data from Manitoba, South Dakota, Indiana, Pennsylvania, and Ohio scientists, who are conducting experiments with an identical protocol. This approach should speed development efforts. The robustness of the forecasting model will also be addressed by investigation of the effect on FHB of other fungal wheat pathogens commonly found on wheat spikes. Finally, field research will be conducted on the population dynamics of *Gibberella zeae*, in particular inoculation event timing, primary inoculum composition (ascospores vs. conidia), and the role of crop foliage in sustaining sporulating fungal colonies. This research will be used to develop quantitative FHB forecasting model and permit incorporation into one or more existing small grain disease forecasting systems.