USDA-ARS/
U.S. Wheat and Barley Scab Initiative
FY11 Final Performance Report
July 13, 2012

Cover Page

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Fiscal Year:	FY11
USDA-ARS Agreement ID:	59-0790-7-077
USDA-ARS Agreement Title:	Enhanced Tools for the Deployment of Fusarium Head Blight Prediction Models.
FY11 USDA-ARS Award Amount:	$ 36,350

USWBSI Individual Project(s)

USWBSI Research Category*	Project Title	ARS Award Amount
MGMT	Continued Deployment of Models Predicting the Risk of Severe FHB and DON.	$ 36,350
	Total ARS Award Amount	**$ 36,350**

Paul G Knight 7/1/12

Principal Investigator Date

* MGMT – FHB Management
FSTU – Food Safety, Toxicology, & Utilization of Mycotoxin-contaminated Grain
GDER – Gene Discovery & Engineering Resistance
PBG – Pathogen Biology & Genetics
BAR-CP – Barley Coordinated Project
DUR-CP – Durum Coordinated Project
HWW-CP – Hard Winter Wheat Coordinated Project
VDHR – Variety Development & Uniform Nurseries – Sub categories are below:
SPR – Spring Wheat Region
NWW – Northern Soft Winter Wheat Region
SWW – Southern Soft Red Winter Wheat Region

Project 1: *Continued Deployment of Models Predicting the Risk of Severe FHB and DON.*

1. What major problem or issue is being resolved relevant to Fusarium head blight (scab) and how are you resolving it?

We are addressing the risk of scab development during the critical flowering stage when the growers can ameliorate the risk with treatment. This project leverages various atmospheric data networks, gridded model data and a host of regression based epidemiological models on a user-friendly graphic interface to assist growers in decision making in protecting their fields from scab. Using hourly reports of temperature and moisture, each day the risk is assessed anew with the most recent observations and is available by mid-morning.

2. List the most important accomplishment and its impact (i.e. how is it being used) to minimize the threat of Fusarium head blight or to reduce mycotoxins. Complete both sections (repeat sections for each major accomplishment):

Accomplishment:
A successful daily prediction using various scab risk models have been run throughout the wheat growing season; from winter wheat in the southern Plains to late spring wheat in the Dakotas. Additional expert commentary is included from plant pathologists in most states to augment the utility of the interface.

Impact:
Growers are using the interface and models to assist in crucial decisions about the risk of scab in their region. When there are any breaks in the data stream that produces the risk assessment tool, we receive immediate response. In the off-season of 2011-2012, we have developed a virtual back-up system to reduce the occurrences of outages on the web interface. (This new system has already been used nearly a half dozen times in 2012).

Include below a list of the publications, presentations, peer-reviewed articles, and non-peer reviewed articles written about your work that resulted from all of the projects included in the grant. Please reference each item using an accepted journal format. If you need more space, continue the list on the next page.

De Wolf, E., Paul, P., Hane, D., Canty, S., Van Sanford, D., Knight, P. and Miller, D. 2011. Evaluating the impact of the FHB prediction models and FHB alerts, 2009-2011. In S. Canty, A. Clark, A. Anderson-Scully, D. Ellis, and D. Van Sanford (Eds.), Proceedings of the 2011 National Fusarium Head Blight Forum (pp. 134). East Lansing, MI/Lexington, KY: U.S. Wheat and Barley Scab Initiative.

Innovative Research including Fusarium Head Blight - webinar to NART (North Atlantic Regional Climate Team) of NOAA on Tuesday, May 8, 2012 from 3-3:40pm EDT to a dozen NOAA scientists representing the Northeast and Middle Atlantic region.