Cover Page

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Fiscal Year:	FY14
USDA-ARS Agreement ID:	59-0206-2-086
USDA-ARS Agreement Title:	Continued Deployment of Prediction Models for Fusarium Head Blight.
FY14 USDA-ARS Award Amount:	$ 30,263

USWBSI Individual Project(s)

USWBSI Research Category*	Project Title	ARS Award Amount
MGMT	Continued Deployment of Prediction Models for Fusarium Head Blight.	$ 30,263
	FY14 Total ARS Award Amount	**$ 30,263**

(signature) Kyle Imhoff

_____   7/7/15
Principal Investigator   Date

PI: Imhoff, Kyle
USDA-ARS Agreement #: 59-0206-2-086

Project 1: *Continued Deployment of Prediction Models for Fusarium Head Blight.*

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, including the finest scale and most accurate gridded data set (RTMA), 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 from standard networks, agricultural networks, proxy agricultural networks (CWOP) and finely gridded data, each day the risk is assessed anew with the most recent observations and is available by mid-morning.

2. **List the most important accomplishments and their impact (i.e. how are they being used) to minimize the threat of Fusarium Head Blight or to reduce mycotoxins. Complete both sections; repeat sections for each major accomplishment:**

    <u>Accomplishment:</u>

    A successful daily prediction using various scab risk models have been run throughout the wheat growing season (Mar-Aug, 2014) 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. The tools are also available on mobile apps and risk in non-growing regions is being masked to prevent misinterpretation of the risk tool.

    <u>Impact:</u>
    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. New proxy agricultural networks, through the use of CWOP stations, were created prior to the 2014 wheat growing season for Virginia and Tennessee to provide additional data to growers. Thus, we have now expanded our tool to include 15 independent agricultural (or proxy agricultural) networks, covering 25 states, in addition to FAA sites and the background gridded RTMA weather datasets.

(Form – FPR14)

Training of Next Generation Scientists

Instructions: Please answer the following questions as it pertains to the FY14 award period. The term "support" below includes any level of benefit to the student, ranging from full stipend plus tuition to the situation where the student's stipend was paid from other funds, but who learned how to rate scab in a misted nursery paid for by the USWBSI, and anything in between.

1. **Did any graduate students in your research program supported by funding from your USWBSI grant earn their MS degree during the FY14 award period?**   Yes

    If yes, how many? One

2. **Did any graduate students in your research program supported by funding from your USWBSI grant earn their Ph.D. degree during the FY14 award period?**   No

    If yes, how many?

3. **Have any post docs who worked for you during the FY14 award period and were supported by funding from your USWBSI grant taken faculty positions with universities?** None

    If yes, how many?

4. **Have any post docs who worked for you during the FY14 award period and were supported by funding from your USWBSI grant gone on to take positions with private ag-related companies or federal agencies?** None

    If yes, how many?

Include below a list of all germplasm or cultivars released with full or partial support of the USWBSI during the FY14 award period. List the release notice or publication. Briefly describe the level of FHB resistance. *If not applicable because your grant did NOT include any VDHR-related projects, enter N/A below.*

N/A

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 FY14 grant. Please reference each item using an accepted journal format. If you need more space, continue the list on the next page.

None

(Form – FPR14)