

**USDA-ARS/
U.S. Wheat and Barley Scab Initiative
FY09 Final Performance Report
July 15, 2010**

Cover Page

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Fiscal Year:	2009
USDA-ARS Agreement ID:	59-0206-9-090
USDA-ARS Agreement Title:	Integrated Management of Fusarium Head Blight in Indiana
FY09- USDA-ARS Award Amount:	\$ 5,373

USWBSI Individual Project(s)

USWBSI Research Category*	Project Title	ARS Adjusted Award Amount
MGMT	Integrated Management of Fusarium Head Blight and Deoxynivalenol in Indiana.	\$ 5,373
	Total Award Amount	\$ 5,373



Principal Investigator

7-14-10

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 Winter Wheat Region

SWW – Southern Sinter Wheat Region

Project 1: *Integrated Management of Fusarium Head Blight and Deoxynivalenol in Indiana.*

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

Fusarium Head Blight (FHB) levels on wheat vary each year in Indiana but the disease is consistently present and of concern to growers, and there is a need for effective FHB and deoxynivalenol (DON) management programs. Varieties with moderate resistance to FHB do not always provide desirable levels of disease control in certain environments, and fungicides have become an important component in FHB and DON management plans in the region. A research study was established in Indiana to determine how these tactics can be combined to provide improved control of FHB.

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 research trial was conducted in West Lafayette, IN to evaluate the effect of genetic resistance and fungicide application to achieve optimal management of FHB. The fungicide Prostaro® was applied to experimental plots of six varieties of varying susceptibility to FHB. Non-treated plots of each of the varieties were included in the experiment to test the effects of a foliar fungicide application at Feekes 10.5.1, and variety susceptibility for improved FHB management. In comparisons between fungicide-treated and untreated plots of the same variety, fungicide-treated plots had lower disease levels and higher yields in all varieties except one.

Impact:

The results of this research project indicate that a well-timed fungicide application can significantly reduce the impact of FHB and DON in wheat varieties, and increase yields in most varieties. This information is of primary importance to growers and is presented in Extension programs and summarized in Extension articles to aid growers in managing FHB and DON in wheat. Additional research is needed to more thoroughly investigate the interaction between fungicide and variety susceptibility under Indiana conditions.

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.

Wise, K.A., and Woloshuk, C. 2010. Diseases of wheat: Fusarium head blight (Head scab). Purdue Extension Bulletin BP-33-W. <http://www.extension.purdue.edu/extmedia/BP/BP-33-W.pdf>.

Wise, K.A., and Buechley, G. 2009. Evaluation of foliar fungicides for management of wheat diseases in Indiana, 2008. Plant Disease Management Reports Vol 3:CF035.

Wise, K. 2009. Predicting risk of Fusarium head blight (scab) in wheat. Purdue Pest & Crop Extension Newsletter. Issue 5.

Wise, K. 2009. Fusarium head blight update. Purdue Pest & Crop Extension Newsletter. Issue 6.

Wise, K. 2009. Wheat disease update. Purdue Pest & Crop Extension Newsletter. Issue 9.

Wise, K. 2009. Wheat diseases present throughout Indiana. Purdue Pest & Crop Extension Newsletter. Issue 11.

Wise, K., and Woloshuk, C. 2009. Dealing with DON in wheat. Purdue Pest & Crop Extension Newsletter. Issue 12.