USDA-ARS / USWBSI
FY04 Final Performance Report
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Cover Page

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Year:	**FY2004** (approx. May 04 – April 05)
FY04 ARS Agreement ID:	**59-0790-4-133**
FY04 ARS Agreement Title:	**Uniform Fungicide Trial for Scab on Wheat in Illinois.**
FY04 ARS Award Amount:	**$ 5,854**

USWBSI Individual Project(s)

USWBSI Research Area*	Project Title	ARS Adjusted Award Amount
CBC	Uniform Fungicide Trial for Scab on Wheat in Illinois.	$ 5,854
	Total ARS Award Amount	**$ 5,854**

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Principal Investigator Date

* BIO – Biotechnology
CBC – Chemical & Biological Control
EDM – Epidemiology & Disease Management
FSTU – Food Safety, Toxicology, & Utilization
GIE – Germplasm Introduction & Enhancement
VDUN – Variety Development & Uniform Nurseries

Project 1: ***Uniform Fungicide Trial for Scab on Wheat in Illinois.***

1. What major problem or issue is being resolved and how are you resolving it?

Head scab on wheat has caused severe losses in yield and grain quality in Illinois. Fungicides have offered the best option for control of scab, but many fungicides are not affective or are not labeled for application time necessary for control of scab. The goal of this study is to test the efficacy of new or recently labeled fungicides and biological control agents in controlling head scab on wheat and their resulting effect on yield and quality of wheat. A small reduction in the toxin level (DON) produced by the fungus means a great deal to the millers who process the grain. Conducting uniform fungicide trials will give Illinois' farmers valuable information for management of scab as well as contributing to data applicable across all the Midwestern wheat growing regions.

2. What were the most significant accomplishments?

Weather conditions were favorable for disease development to adequately test the effectiveness of the products. The percent incidence of FHB was 30 and 44 with no fungicides at the two locations the study was conducted. The incidence, severity, and FHB index were significantly lower (p=0.05) for all fungicide treatments than untreated checks. The treatments with JAU6476 480SC were the only treatments yielding significantly greater than the check. The level of DON was significantly lower in treatments containing JAU6476 480SC or V-10116 1.81 FL than the check. These results show there are experimental fungicides that have better efficacy against scab and can reduce the toxin level in the grain better than some of the fungicides typically applied to control foliar fungal diseases in wheat. These results have been presented through Extension activities and can aid companies in developing products and farmers in selecting fungicides that will be effective in controlling scab.

Fungicide Treatment[z]	FHB Incidence (%)[y]	FHB Severity (%)[x]	FHB Index[w]	Yield (bu/ac)	DON[v] (ppm)
Untreated check	37.4	34.9	14.0	71.3	6.3
Folicur 432SC 4.0 fl oz + 0.125% Induce/ac	28.7	16.6	5.2	74.8	6.0
Tilt 3.6 EC 4.0 fl oz/ac	22.6	18.4	4.8	73.2	6.0
JAU6476 480SC 5.0 fl +0.125% Induce/ac	19.4	15.7	4.4	79.9	3.6
JAU6476 480SC 2.85 fl oz + Folicur 3.17 fl oz + 0.125% Induce/ac	20.7	16.2	4.1	85.0	2.9
V-10116 1.81 FL 6.0 fl oz + 0.125% Induce/ac	20.5	16.8	4.2	77.0	4.1
V-10116 1.81 FL 4.0 fl oz + 0.125% Induce/ac	23.4	19.0	5.5	73.4	4.9
LSD (P=0.05)	5.5	5.5	3.0	8.5	1.2

[z]Fungicides were applied at the early flowering stage (Feekes 10.51.
[y]Incidence is the percent of heads with symptoms of FHB.
xSeverity is percent of florets with FHB in the infected heads.
[w]Disease index is FHB incidency x severity.
[v]Deoxynivalenol

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

Malvick, D., and Adee, E. 2005. Evaluation of fungicides for control of Fusarium head blight on wheat, 2004. Fungicide and Nematicide Tests. 60:CF012.
http://www.plantmanagementnetwork.org/pub/trial/fntests/vol60/

D. Malvick and F. Kolb. August 2004. Presentation: Is wheat scab an emerging threat or recurring villain? University of Illinois Agronomy Day. Urbana, IL.

Adee, E. and Ebelhar, S. 2005. Wheat Management for the 21st Century. 2005 Illinois Crop Protection Technology Conference Proceedings. pp 133, 134. University of Illinois Extension.