

**USDA-ARS / USWBSI
FY04 Final Performance Report
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Cover Page

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FY04 ARS Agreement ID:	59-0790-4-135
FY04 ARS Agreement Title:	Fungicide Efficacy Evaluations for Managing Scab in Louisiana Wheat.
FY04 ARS Award Amount:	\$ 9,336

USWBSI Individual Project(s)

USWBSI Research Area*	Project Title	ARS Adjusted Award Amount
CBC	Fungicide Efficacy Evaluations for Managing Scab in Louisiana Wheat.	\$ 9,336
	Total ARS Award Amount	\$ 9,336

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: *Fungicide Efficacy Evaluations for Managing Scab in Louisiana Wheat.*

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

Fusarium Head Blight (FHB), *Fusarium graminearum*, is a major concern for wheat producers in the United States. Periods of high humidity and moderate temperatures during flowering are common along the Louisiana Gulf Coast which provides favorable conditions for FHB development. Furthermore, increased use of minimum tillage practices in corn and wheat production systems have the potential to increase the threat of this disease in the state. This disease is managed in part using genetic resistance and fungicides. However, no commercially available fungicides are highly effective against *F. graminearum*; therefore, a multi-state screening effort is ongoing to identify viable chemistries efficacious against this pathogen.

The objective of this project is to evaluate fungicides for the management of FHB in Louisiana. Fungicides were evaluated in LSU AgCenter small field plot tests at the Macon Ridge (northeast) and Ben Hur (south central) Research Station in 2004. Another location at the Rice Research Station (southwest) was added in 2005. Each location represents a unique environment (e.g. weather, soil type). Disease pressure was enhanced by distributing *F. graminearum* colonized corn (0.5 gm/0.09 m²) into plots prior to flowering. A misting system was also utilized to provide conditions favorable for disease development. Seven treatments were evaluated in 2004: 1. Nontreated, 2. Folicur 432SC 4 fl. oz + 0.125% Induce, 3. Tilt 3.6EC 4.0 fl oz, 4. JAU6476 480SC 5.0 fl oz + 0.125% Induce, 5. JAU6476 480SC 2.85 fl oz + Folicur 3.17 fl. oz. + 0.125% Induce, 6. V-10116 1.81 FL @ 6 fl. oz./A + 0.125% Induce, and 7. V-10116 1.81 FL @ 4 fl. oz./A + 0.125% Induce in multi-state uniform fungicide test supported by the USWBSI. Treatments were applied at flowering using a handheld CO₂ charged spray boom. Disease incidence and severity was assessed, as well as scabby kernels in accordance with the USWBSI Uniform Fungicide Test materials and methods. Disease assessment data and grain quality measurements were compared using appropriate statistical procedures.

In 2005 materials and methods were the same as those described in 2004. Treatments evaluated were: 1. Nontreated, 2. Folicur 432SC 4 fl oz/a + 0.125% Induce, 3. Prosaro (1:1 ratio of prothioconazole:tebuconazole) 6.5 fl oz/a + 0.125% Induce, 4. BAS555 01/F 13.5 fl oz/a + 0.125% Induce, 5. BAS555 01F 10 fl oz/a + 0.125% Induce, 6. Punch 6 fl oz/a (no surfactant) 7. Punch 8 fl oz/a (no surfactant).

2. What were the most significant accomplishments?

In 2004 scab severity was low at the Macon Ridge and Ben Hur locations. Severity was 0.72% or less at the Macon Ridge location and ranged from 0 (JAU6476 480SC 5.0 fl oz + 0.125% induce) to 13.8% (non-treated) at Ben Hur. Rainfall during harvest prevented harvest and seed collections for DON analysis. Folicur did not significantly reduce scab severity relative to the non-treated.

In 2005 scab epidemics developed at the Macon Ridge location, but not at Ben Hur or at the Rice Research Station due to dry weather. Severity ranged from 3.15% (Caramba 13.5 fl oz/a + Induce 0.125% v/v) to 22.2% (Folicur 4.0 fl oz/a + Induce 0.125% v/v). Severity in the non-treated was 15.9%. Yields did not differ among treatments.

Even though scab severity was low in both years, there were trends toward less scab in wheat treated with the newer chemistries when compared to the non-treated.

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.

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