**USDA-ARS/**
**U.S. Wheat and Barley Scab Initiative**
**FY07 Final Performance Report (approx. May 07 – April 08)**
**July 15, 2008**

# Cover Page

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| **Fiscal Year:** | 2007 |
| **USDA-ARS Agreement ID:** | 59-0790-6-062 |
| **USDA-ARS Agreement Title:** | Field Evaluations of Chemical Control for Fusarium Head Blight in Michigan. |
| **FY07 ARS Award Amount:** | $ 13,114 |

**USWBSI Individual Project(s)**

| USWBSI Research Area* | Project Title | ARS Adjusted Award Amount |
|---|---|---|
| CBCC | Field Evaluations of Chemical Control for Fusarium Head Blight in Michigan. | $13,114 |
| | **Total Award Amount** | **$ 13,114** |

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Principal Investigator Date

* CBCC – Chemical, Biological & Cultural Control
EEDF – Etiology, Epidemiology & Disease Forecasting
FSTU – Food Safety, Toxicology, & Utilization of Mycotoxin-contaminated Grain
GET – Genetic Engineering & Transformation
HGR – Host Genetics Resources
HGG – Host Genetics & Genomics
IIR – Integrated/Interdisciplinary Research
PGG – Pathogen Genetics & Genomics
VDUN – Variety Development & Uniform Nurseries

**Project 1:** *Field Evaluations of Chemical Control for Fusarium Head Blight in Michigan.*

**1. What major problem or issue is being resolved and how are you resolving it?**
Nationally, Michigan ranks 15th in production of wheat with 590,000 harvested acres with a crop value of $122.6 million. The majority of plantings are in soft white and soft red winter wheat cultivars. Fusarium head blight (FHB) epidemics continue to be responsible for enormous yield and quality losses of wheat and barley (McMullen, et al., 1997) resulting in financial damage to producers, and risk to the safety of food supplies as a result of the production of mycotoxins by the causal organism.

Severe widespread epidemics in the US in 1993, 1996, and 1997, and recent localized epidemics, have necessitated finding fungicides that are effective against FHB. The complex nature of the host/pathogen interaction has made control of head scab challenging and immediate options are needed to keep this disease from causing severe economic loss to farmers.

Much fungicide evaluation work for FHB remains to be accomplished in Michigan. Trial results for the past several years have been inconclusive. Folicur 3.6 had been registered under a section 18 emergency exemption in Michigan as a single application (4 fl oz./acre) applied up until flowering, and Tilt and Propimax EC (Propiconazole) are currently labeled under a section 24C special local needs exemption in Michigan for suppression of FHB, products that may prove more efficacious need to undergo successful evaluation under Michigan conditions to provide additional options for producers.

The research conducted in MI tested new products that have been and others that may be registered in the near future; provided supporting documentation for the continuation of Section 18 registration or for the registration of new products; and provided additional testing sites in important wheat producing areas in Michigan.

**2. List the most important accomplishment and its impact (how is it being used?). Complete all three sections (repeat sections for each major accomplishment):**

**Accomplishment:**
Trials on FHB and DON conducted in MI in 2006/07 indicated that effective fungicides were available for use. The data from these trials were used to support the registration of new fungicides such as Proline (prothioconazole) and Prosaro (tebuconazole + prothioconazole)
**Impact:**
Wheat growers have effective fungicides available under Section 3 registration for control of FHB and reduction of DON.
**As a result of that accomplishment, what does your particular clientele, the scientific community, and agriculture as a whole have now that they didn't have before?:**
Increased food and crop security.

**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.**

1. Brown-Rytlewski, D., W.W. Kirk, R.L. Schafer and D. Berry. 2007. Evaluation of fungicides for control of Fusarium head scab of winter wheat at Williamston, MI, 2006. 1:CF016.
2. Brown-Rytlewski, D., W.W. Kirk, R.L. Schafer and D. Berry. 2007. Evaluation of fungicides for control of Fusarium head scab of winter wheat at Sandusky, MI, 2006. 1:CF017.
3. Brown-Rytlewski, D., W.W. Kirk, R.L. Schafer and D. Berry. 2007. Evaluation of fungicides for control of Fusarium head scab of winter wheat at East Lansing, MI, 2006. 1:CF018.
4. Brown-Rytlewski, D., W.W. Kirk, R.L. Schafer and D. Berry. 2007. Evaluation of fungicides for control of Fusarium head scab of winter wheat at Saginaw, MI, 2006. 1:CF019.