

**USDA-ARS/  
U.S. Wheat and Barley Scab Initiative  
FY06 Preliminary Final Performance Report (approx. May 06 – April 07)  
July 16, 2007**

**Cover Page**

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<b>Fiscal Year:</b>	2006
<b>USDA-ARS Agreement ID:</b>	59-0790-4-105
<b>USDA-ARS Agreement Title:</b>	Regional Diagnostic Laboratory Providing DON Analytical Services for Regional FHB Research Projects.
<b>FY06 ARS Award Amount:</b>	\$ 81,851

**USWBSI Individual Project(s)**

<b>USWBSI Research Area*</b>	<b>Project Title</b>	<b>ARS Award Amount</b>
FSTU-S	Regional Diagnostic Laboratory Providing DON Analytical Services for Regional FHB Research Projects.	\$ 81,851
	<b>Total Award Amount</b>	<b>\$ 81,851</b>

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Principal Investigator

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Date

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\* 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  
PGG – Pathogen Genetics & Genomics  
VDUN – Variety Development & Uniform Nurseries

**Project 1:** *Regional Diagnostic Laboratory Providing DON Analytical Services for Regional FHB Research Projects.*

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

To provide consistent and unbiased testing of DON levels on barley, a centralized diagnostic laboratory at Michigan State University was established in 1999. Having a centralized laboratory and a uniform technique for DON levels allowed researchers to spend less time on DON testing and improved data comparison among researchers. With funds from this grant, the MSU-DON diagnostic laboratory provided free DON testing to the research community. In 2006, more than ten states submitted samples to the MSU-DON diagnostic laboratory including: Arkansas, Illinois, Kentucky, Louisiana, Maryland, Michigan, North Carolina, Ohio, Pennsylvania, and Virginia. In addition, two private companies provided samples for testing. A total of 9,537 samples were analyzed using standardized ELISA plates and the DON level for each sample was determined using a programmable ELISA reader.

**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:**

A total of 9, 537 wheat or barley samples were tested in our DON diagnostic laboratory, which represented a total of 17 organizations including universities, USDA-research facilities and private companies. We processed the wheat samples based upon the order of arrival to our laboratory, which resulted in prompt reports of the data sent to the researchers.

**Impact:**

Prompt reports of DON levels sent by electronic mailing system helped researchers and extension agents make appropriate decisions in a timely manner. Researchers could re-direct their efforts in testing breeding lines more resistant to FHB (Scab). Our analysis allowed at least one researcher to exploit the findings we provided and ask even more insightful questions regarding the role fungal growth plays in DON production. We continue to work with that researcher

**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?**

Our work allowed breeders to make prompt decisions about barley/wheat breeding lines and its potential DON levels, which will result in a more secure food supply for consumers.

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**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.**

To date, no written materials or presentations have resulted from this project.