USDA-ARS/
U.S. Wheat and Barley Scab Initiative
FY07 Final Performance Report (approx. May 07 – April 08)
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Cover Page

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Fiscal Year:	2007
USDA-ARS Agreement ID:	59-0790-7-076
USDA-ARS Agreement Title:	Uniform Trial for Integrated Control in FHB: Kentucky.
FY07 ARS Award Amount:	$ 10,346

USWBSI Individual Project(s)

USWBSI Research Area*	Project Title	ARS Adjusted Award Amount
CBCC	Uniform Trial for Integrated Control in FHB.	$10,346
	Total Award Amount	**$ 10,346**

D. S. Hershman 06/24/08

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: *Uniform Trial for Integrated Control in FHB.*

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

Neither fungicide use nor genetic resistance to FHB can provide acceptable control of FHB symptom expression and DON accumulation when conditions favor disease development. However, when used together in an integrated program, applying fungicides to wheat varieties with FHB resistance may provide acceptable control. The work carried out in KY is being done as part of a National Uniform Integrated Control project. In Kentucky, two tests were conducted in Lexington, KY; one test was carried out in a field planted to corn the previous year and the other soybean. Both fields were planted following no-till methods. Treatments included three wheat varieties with differing levels of FHB resistance, and treated or not treated with the fungicide Prosaro at early anthesis. Plots were not inoculated or irrigated to simulate natural disease/production conditions. Disease ratings, yield, test weight, % visually scabby kernals and ppm DON data were collected.

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:

One test was successfully carried out and the other was accidently mowed down by the farm crew. However, this test was successfully carried out during 2008 (albeit not part of 2007-08 USWBSI funding). Data from the 2007 test was sent to Pierce Paul at The Ohio State University for inclusion in the Uniform Integrated Trials summary. The same will be done for the 2008 data. There was less than 1% FHB incidence in both years and very little DON accumulation (DON results from the 2008 test are pending). As a result of low disease pressure, no treatment differences were apparent for either FHB or DON.

Impact:

Due to low disease pressure, the Kentucky Integrated Trial reaffirmed the overwhelming importance of environmental conditions as the factor that overrides all others in determining whether or not FHB/DON will be significant.

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?:

Nothing new has been learned due to the lack of disease and no treatment effects.

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.

Paul, P., L Madden, M. McMullen, D. Hershman, L. Sweets, S. Wegulo, W. Bockus, S. Halley, and K. Ruden. 2007. An integrated approach to managing FHB and DON in wheat: Uniform Trials 2007. Pages 117-122 IN: Proceedings of the 2007 National Fusarium Head Blight Forum, Kansas City, MO; Dec 2-4, 2007.

Hershman, D. 2007. Uniform integrated FHB management trials. A presentation to stakeholders during the May 15, 2007 University of Kentucky Wheat Science Field Day, Princeton, KY.