

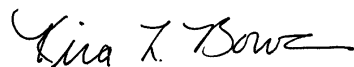
**USDA-ARS/
U.S. Wheat and Barley Scab Initiative
FY16 Final Performance Report
Due date: July 28, 2017**

Cover Page

Principle Investigator (PI):	Kira Bowen
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Fiscal Year:	2016
USDA-ARS Agreement ID:	59-0206-6-008
USDA-ARS Agreement Title:	Integrated Strategies for Improved Management of FHB and DON in Soft Red Winter Wheat in Alabama.
FY16 USDA-ARS Award Amount:	\$ 21,817
Recipient Organization:	Auburn University Contracts and Grants Accounting Department (CGA) 208 M. White Smith Hall Auburn, AL 36849
DUNS Number:	066470972
EIN:	63-6000724
Recipient Identifying Number or Account Number:	361848-304504-2002
Project/Grant Reporting Period:	5/23/16 - 5/22/17
Reporting Period End Date:	05/22/17

USWBSI Individual Project(s)

USWBSI Research Category*	Project Title	ARS Award Amount
MGMT	Integrated Strategies for Management of FHB and DON in SRW Wheat in AL.	\$ 21,817
	FY16 Total ARS Award Amount	\$ 21,817



27 July 2017

Principal Investigator

Date

* MGMT – FHB Management
 FST – Food Safety & Toxicology
 GDER – Gene Discovery & Engineering Resistance
 PBG – Pathogen Biology & Genetics
 EC-HQ – Executive Committee-Headquarters
 BAR-CP – Barley Coordinated Project
 DUR-CP – Durum Coordinated Project
 HWW-CP – Hard Winter Wheat Coordinated Project
 VDHR – Variety Development & Uniform Nurseries – Sub categories are below:
 SPR – Spring Wheat Region
 NWW – Northern Soft Winter Wheat Region
 SWW – Southern Soft Red Winter Wheat Region

Project 1: *Integrated Strategies for Management of FHB and DON in SRW Wheat in AL.*

1. What are the major goals and objectives of the project?

The objectives of this project were:

- i) To evaluate the integrated effects of fungicide and genetic resistance on FHB and DON in SRWW grown in AL;
- ii) to evaluate regionally adapted SRWW cultivars for which FHB reactions are lacking; and
- iii) to evaluate late and multiple tebuconazole applications for control of FHB.

2. What was accomplished under these goals? *Address items 1-4) below for each goal or objective.*

1) major activities

Replicated field plots were located at two sites in Alabama for the 2016 and 2017 harvests (south in Fairhope and central in Tallassee). The southern site had 2 varieties with delayed tebuconazole applications. The central site had 4 varieties with delayed tebuconazole applications, included inoculation, and was under mist irrigation to ensure FHB development. These field trials addressed the first two objectives of this project. Conflicting information has been distributed about one of the varieties at the central site; this trial addressed the third objective.

These studies were repeated for the 2016-17 wheat crop. Results of both 2017 trials are incomplete as of 22 July 2017; however, FHB occurrence was considerably lower than in preceding year and treatment differences may not be seen.

2) specific objectives

See above (#1)

3) significant results

- a. The variety “Pioneer 26R41” was shown to have lower resistance to FHB than noted by Georgia’s “Variety Recommendations.” This information and associated data were shared with appropriate persons for correction.
- b. Two fungicide applications (Prosaro® followed by Caramba®, Proline® followed by tebuconazole) during flowering reduced FHB, improved yield and test weight, and decreased DON compared to no treatment.

4) key outcomes or other achievements

The variety “Pioneer 26R41” was shown to have lower resistance to FHB than noted by Georgia’s “Variety Recommendations.” This information and associated data were shared with appropriate persons for correction.

AL Experiment Station Personnel involved with these trials become more familiar with FHB and its management.

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3. What opportunities for training and professional development has the project provided?

Graduate and undergraduate students were trained to use fungicide spray equipment and to help in wheat disease assessments; these students also aided in determining yield components of the harvested wheat. PI participated in the 2016 FHB Forum.

4. How have the results been disseminated to communities of interest?

PI had abstracts published in the 2016 FHB Forum Proceedings in which results of both 2016 field trials were described. PI published results from 2016 southern trials in *Plant Disease Management Reports*. PI also presented results to the AL Wheat and Feed Grain Committee and talked about scab at the “Alabama Malting Barley Program.”

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Training of Next Generation Scientists

Instructions: Please answer the following questions as it pertains to the FY16 award period. The term “support” below includes any level of benefit to the student, ranging from full stipend plus tuition to the situation where the student’s stipend was paid from other funds, but who learned how to rate scab in a misted nursery paid for by the USWBSI, and anything in between.

1. **Did any graduate students in your research program supported by funding from your USWBSI grant earn their MS degree during the FY16 award period? No.**

If yes, how many?

2. **Did any graduate students in your research program supported by funding from your USWBSI grant earn their Ph.D. degree during the FY16 award period? No.**

If yes, how many?

3. **Have any post docs who worked for you during the FY16 award period and were supported by funding from your USWBSI grant taken faculty positions with universities? No**

If yes, how many?

4. **Have any post docs who worked for you during the FY16 award period and were supported by funding from your USWBSI grant gone on to take positions with private ag-related companies or federal agencies? No**

If yes, how many?

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Release of Germplasm/Cultivars

Instructions: In the table below, list all germplasm and/or cultivars released with full or partial support through the USWBSI during the FY16 award period. All columns must be completed for each listed germplasm/cultivar. Use the key below the table for Grain Class abbreviations. *Leave blank if you have nothing to report or if your grant did NOT include any VDHR-related projects.*

Name of Germplasm/Cultivar	Grain Class	FHB Resistance (S, MS, MR, R, where R represents your most resistant check)	FHB Rating (0-9)	Year Released

Add rows if needed.

NOTE: List the associated release notice or publication under the appropriate sub-section in the ‘Publications’ section of the FPR.

Abbreviations for Grain Classes

- Barley - BAR
- Durum - DUR
- Hard Red Winter - HRW
- Hard White Winter - HWW
- Hard Red Spring - HRS
- Soft Red Winter - SRW
- Soft White Winter - SWW

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Publications, Conference Papers, and Presentations

Instructions: Refer to the FY16-FPR_Instructions for detailed instructions for listing publications/presentations about your work that resulted from all of the projects included in the FY16 grant. Only include citations for publications submitted or presentations given during your award period (5/23/16 - 5/22/17). If you did not have any publications or presentations, state 'Nothing to Report' directly above the Journal publications section.

Journal publications.

n/a

Books or other non-periodical, one-time publications.

n/a

Other publications, conference papers and presentations.

Bowen, K.L., H.D. Harkins, and B.E. Norris. 2017. Evaluation of fungicide treatments for control of foliar diseases of wheat in north Alabama, 2016. PDMR 11:CF007.

Status: published.

Acknowledgement of Federal Support: Not possible in publication.

Presentation "Fusarium Head Scab Control in Small Grains" at AL Malting Barley Program, 12 May 2016, Gadsden, AL.

Status: presentation only.

Acknowledgement of Federal Support: No.

Bowen, K.L. 2016. Integrated Management of Fusarium Head Blight of Wheat in Central Alabama. Proc. 2016 Nat. Fusarium Head Blight Forum: 13.

Status: published.

Acknowledgement of Federal Support: YES (both abstract and poster).

Bowen, K.L. 2016. Integrated Management of Fusarium Head Blight of Wheat in South Alabama. Proc. 2016 Nat. Fusarium Head Blight Forum: 15.

Status: published.

Acknowledgement of Federal Support: YES (both abstract and poster).

Bowen, K.L. 2017. Evaluation of effects of foliar fungicides applications on diseases of wheat. Presentation at AL Wheat Feed and Grain Committee, 13 Jan. 2017, Montgomery, AL

Status: presentation only.

Acknowledgement of Federal Support: Yes.