

**USDA-ARS/  
U.S. Wheat and Barley Scab Initiative  
FY15 Final Performance Report  
Due date: July 15, 2016**

**Cover Page**

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<b>Fiscal Year:</b>	2015
<b>USDA-ARS Agreement ID:</b>	N/A
<b>USDA-ARS Agreement Title:</b>	Maintain and Improve the U.S. Wheat & Barley Scab Initiative's Website.
<b>FY15 USDA-ARS Award Amount:</b>	\$ 46,500

**USWBSI Individual Project(s)**

<b>USWBSI Research Category*</b>	<b>Project Title</b>	<b>ARS Award Amount</b>
EC-HQ	US Wheat & Barley Scab Initiative's Networking & Facilitation Office and Website.	\$ 46,500
	<b>FY15 Total ARS Award Amount</b>	<b>\$ 46,500</b>

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Principal Investigator

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Date

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\* 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:** *US Wheat & Barley Scab Initiative's Networking & Facilitation Office and Website.*

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

The goal of this project is to manage the U.S. Wheat & Barley Scab Initiative's (USWBSI) server which hosts the Scab Website, and improve USWBSI's Web presence. The funds received for this project support 50% of a full-time position (i.e. systems administrator/programmer).

**2. What was accomplished under these goals?**

1) Major activities: USWBSI's main web server was moved to a cloud based system from the vendor DreamHost.com. Most of the scripts used to run the website and its related services have been rewritten to conform to the latest security standards. The funding database scripts were rewritten to use a new searching and viewing codebase called DataTables for improved functionality and to ease script writing and maintenance.

2) Specific objectives: The systems administrator/ programmer will work in close collaboration with the Networking and Facilitation Office (NFO) to achieve the following objectives:

1. Manage and enhance the USWBSI's Web presence;
2. Facilitate communication among the USWBSI's researchers, stakeholders and the NFO using web-based tools and other communication technologies; and
3. Maintain, update, and expand as needed, the web-based data management for the NFO.

The combined results of fulfilling these objectives will yield a highly visible, effective, and user-friendly suite of services for the Initiative's researchers and its stakeholders to use in developing as quickly as possible effective control measures that minimize the threat of Fusarium head blight to the producers, processors, and consumers of wheat and barley.

3) Significant results: Moving the USWBSI's main web server to a cloud based system has increased the site's uptime and availability. The cloud service guarantees 100% uptime and network availability. Moving to a cloud based service also removes the initiative's need to purchase and maintain UPS power and cooling for the hardware because DreamHost manages all aspects of power, cooling, and physical security for its servers. DreamHost also manages all major operating system and server daemon software upgrades and patches.

Switching database searching and viewing to the DataTables javascript library has greatly improved the functionality for all of the applications in which it is used. Users can now search on any column, re-order columns, and do very comprehensive searches against any piece of data returned to their browser. The library also pushes out all of this functionality to the user's browser. This saves power on the host server and improves speeds for the user because they are searching and sorting local data instead of data that must be retransmitted for each change they make. The DataTables library also removes all user interface code from the scripts. This makes maintenance of code easier, more secure, and makes the rapid creation of new applications and features possible.

4) Key outcomes or other achievements: Both the cloud service and the use of DataTables significantly frees time for the site administrator to focus on functionality instead of routine maintenance. This has led to the site administrator taking a more active role in the creation of new software and features with some new initiative applications currently in the pipeline.

The scripts used to run the website and its related services are being updated because, as programming languages change, new features are introduced and others deprecated. All of the PHP scripts that access databases are currently being updated to modern mysql query functions. This will greatly improve the site's security as the code is brought up to modern standards. This endeavor is approximately 75% complete.

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

None, not applicable for this project.

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

Information is disseminated through the USWBSI's listservers, website, emails, blogs, press releases and newsletters (posted on <http://scabusa.org>).

### **Training of Next Generation Scientists**

**Instructions:** Please answer the following questions as it pertains to the FY15 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 FY15 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 FY15 award period? No**

**If yes, how many?**

- 3. Have any post docs who worked for you during the FY15 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 FY15 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?**

**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 FY15 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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PI: Blechl, Ann

USDA-ARS Agreement #: N/A

## **Publications, Conference Papers, and Presentations**

Refer to the FY15-FPR\_Instructions for listing publications/presentations about your work that resulted from all of the projects included in the FY15 grant. If you did not have any publications or presentations, state 'Nothing to Report' directly above the Journal publications section.

**Journal publications.** None

**Books or other non-periodical, one-time publications.** None

### **Other publications, conference papers and presentations.**

Status of all items listed below: Published

Acknowledgement of Federal Funding: None; not applicable for type of publication

#### Forum Proceedings:

Canty, S., A. Clark, S. Vukasovich, and D. Van Sanford (Eds.). 2015. Proceedings from the 2015 National Fusarium Head Blight Forum, St. Louis, MO; December 6-8. University of Kentucky, Lexington, KY.

#### Newsletters:

Lilleboe, D., S. Canty, and D. Van Sanford (Eds.). Winter 2016. Fusarium Focus. U.S. Wheat & Barley Scab Initiative. Volume 16, Issue 1.

Lilleboe, D., S. Canty, and D. Van Sanford (Eds.). Summer 2015. Fusarium Focus. U.S. Wheat & Barley Scab Initiative. Volume 15, Issue 2.

#### On-line Articles

Lilleboe, D. 2015, October. *FHB in 2015: FA Vexing Year, Overall*. U.S. Wheat & Barley Scab Initiative. Website: [http://scabusa.org/pdfs/USWBSI-Article\\_2015FHB-Summary\\_10-26-15.pdf](http://scabusa.org/pdfs/USWBSI-Article_2015FHB-Summary_10-26-15.pdf),

Lilleboe, D. 2015, May. *Scab Management: It Takes an Integrated Approach*. U.S. Wheat & Barley Scab Initiative. Website: [http://scabusa.org/pdfs/USWBSI-Article\\_Scab-Mgmt\\_05-12-15.pdf](http://scabusa.org/pdfs/USWBSI-Article_Scab-Mgmt_05-12-15.pdf).

#### Press Releases:

5-12-15 News Release: Scab Management: It Takes an Integrated Approach

All Newsletters, On-Line Articles and Press Releases are available in PDF format on the USWBSI's Website: <http://scabusa.org>.