

USDA-ARS
U.S. Wheat and Barley Scab Initiative
FY18 Final Performance Report
NCE for FY19
Due date: July 24, 2020

Cover Page

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Fiscal Year:	2018 (<i>NCE for FY19</i>)
USDA-ARS Agreement ID:	59-0206-8-215
USDA-ARS Agreement Title:	Hosting the Manager of the USWBSI's Networking and Facilitation Office
FY18 USDA-ARS Award Amount:	\$ 241,373
Recipient Organization:	Michigan State University Contract & Grant Administration Hannah Administration Building, Room 2 East Lansing, MI 48824-1046
DUNS Number:	193247145
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Project/Grant Reporting Period:	4/22/19 - 4/21/20
Reporting Period End Date:	4/21/2020

USWBSI Individual Project(s)

USWBSI Research Category*	Project Title	ARS Award Amount
EC-HQ	U.S. Wheat & Barley Scab Initiative's Networking & Facilitation Office and Website	\$ 241,373
FY18 Total ARS Award Amount		\$ 241,373



July 24, 2020

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: *U.S. Wheat & Barley Scab Initiative's Networking & Facilitation Office and Website*

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

The objectives of the NFO are to:

- 1) Maintain and enhance the Resource Management/Accountability Center;
- 2) Facilitate and enhance communication within the Initiative and with its stakeholders;
- 3) Administer the process of developing the Initiative's annual recommended research plan and budget; and
- 4) Manage and implement all meetings and conferences.

2. What was accomplished under these goals or objectives? *(For each major goal/objective, address items a-b) below.)*

a) What were the major activities?

- Resource Management/Accountability Center:
 - Due to performance and reliability issues with our current cloud based Virtual Private Server (VPS) service we purchased a new Cloud VPS service with InMotion Hosting. The new VPS is completely different from our current setup and required extensive setup and customization to work with our sites. The new site is cheaper, faster, and has more storage space and memory. It also has an improved user interface that makes maintaining the site, uploading and editing files, and making system configuration changes much easier.
 - Migrated the scabusa.org and scabsmart.org sites from Drupal 7 on DreamHost to Drupal 8 on InMotion. During the transition a new Drupal theme was implemented for scabusa.org. After copying the file structure for each site to the new VPS, each "page" on the websites had to be manually copied and pasted into the new system and then edited to make the layout work in the new Drupal system. The new sites were checked for broken links. After the bad links were catalogued they were fixed.
 - Created a new mailing list administrative and user subscription system. Now all of our listserv (Except FHB Alerts) can be managed using a centralized interface that is synchronized with our Projects Databases. The new user subscription pages collect more data about users and is easier to use. We also created a public information interface about the various lists that is easily searchable and sortable. Security and the prevention of mailing list abuses were also enhanced.
 - A Poster Competition was added to the 2019 National Fusarium Head Blight Forum. This required the poster-paper registration database to have its

schema altered and the registration scripts to be edited to include new code for entering the contest.

- Hosted the 2019 National Fusarium Head Blight Forum: the NFO working with the Forum Organizing Committee facilitated the USWBSI's annual scientific Forum, which was held in Milwaukee, Wisconsin. The 206 registered attendees included scientists (including research associates, research technicians and graduate students), growers, and industry representatives from across the nation and around the world, as well as area leaders of the U.S. wheat and barley industry. Research results and findings were presented to the Forum participants in the form of invited talks (16), Flash & Dash presentations (20) and poster presentations (67). Abstracts or papers (78) of these various presentations were published in the Forum proceedings. One morning of the forum was devoted to group discussions designed around the USWBSI's five research areas and three commodity-based coordinated projects.

New this year was a poster competition for post-doctorates and graduate students. Thirty one individuals competed in the competition, which was divided into two groups: Post Docs (9) and Graduate Students (22). The posters were judged by representatives from both public and private industries. The presenters from each group with top highest scores received certificates for 1st, 2nd and 3rd place.

The annual Forum is the primary mechanism whereby USWBSI scientists and stakeholders come together to discuss both the progress being made, as well as problems that interfere, with the successful combat against this devastating disease.

- Development of the USWBSI's FY20 Research Plan and Budget - approved by USDA-ARS in April, 2020: One-hundred and fifty (150) research projects across five (5) research areas (FHB Management, Food Safety & Toxicology, Gene Discovery and Engineering Resistance, and Variety Development and Host Resistance (includes Spring Wheat, Northern and Southern Winter Wheat), three commodity-based coordinated projects (Barley, Durum, and Hard Winter Wheat), and the USWBSI Headquarters (Office and Website), were recommended for funding in the amount of \$8,505,633 to continue the research efforts to mitigate FHB.

b) What were the significant results?

Not applicable to this project.

c) List key outcomes or other achievements.

Objective i.

- The switch to a new Virtual Private Server cloud service was performed due to degraded performance and reliability issues as well as long standing server

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configuration problems that made maintaining the file system difficult. The new service is also cheaper, faster, and has more storage space and memory. The service also uses a user friendly web browser based user interface that is more powerful and simpler to use.

- The websites, scabusa.org and scabsmart.org, were upgraded to the Drupal 8 version because the current version, Drupal 7, will not be supported after 2020. In order to keep the system patched with the latest features and security enhancements an upgrade to version 8 was necessary. Drupal 8 also has several benefits over Drupal 7. One of the key enhancements is a theming system that makes entering data easier by having data entered in pages requiring less custom styling to work with the existing themes. Drupal 8 will also have long-term support for at least four years.
- The new mailing list administration and subscription system makes managing the list easier and faster. It also has a much more robust anti-abuse system in place as well as integration with the Initiative's projects database system. The public interface provides a new service for potential and current subscribers to view information about the various lists.

Objectives ii-iv. In addition to hosting the 2019 National Fusarium Head Blight Forum and finalization of the FY20 Research Plan & Budget, Table 1 provides a summary of committee meetings, conference calls, research-based workshops and committee nominations/elections organized by the NFO.

Table 1. Summary of Administrative Meetings, Conference Calls and Research-based Workshops/Planning meetings facilitated or supported by the Networking & Facilitation Office (NFO) during FY19.

Committee/Group	# of Meetings/ Conference Calls (CC)/ Nominations	Description/Purpose of Meeting/Nominations (Elections- Appointments)
Steering Committee (SC)	1 Meeting	12-10-19: Semi-Annual Meeting – Review and approval of EC’s recommended FY20 Research Plan and Budget.
Executive Committee (EC)	5 Meetings	12-06-19: EC Executive Session 12-07-19: EC met with review panels to discuss their recommendations; 12-08-19 am: EC discussed recommendations from review panels for FY20 Research Plan and Budget (RP&B). 12-08-19 pm: EC discussed recommendations from review panels for FY20 Research Plan and Budget (RP&B). 12-09-19: EC finalized plan to move forward with FY20 RP&B,

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Committee/Group	# of Meetings/ Conference Calls (CC)/ Nominations	Description/Purpose of Meeting/Nominations (Elections- Appointments)
	3 CC	01-15-20: EC discussed plan for ARS portion of new funding and plan allocation of Initiative’s portion, and finalized funding recommendation on pre-proposals submitted in fall of 2019. 01-28-20: EC reviewed and approved ARS’ plan for Scab base funding, and Initiative’s plan for funding increase. 03-06-20: Reviewed RC’s requests and made recommendations for one-time equipment purchases and new research projects
FY20-21 Review Panels (RP)	3 CC	11-11-19: MGMT RP convened to discuss panel’s review of MGMT assigned pre-proposals. 11-22-19: GDER RP convened to discuss panel’s review of GDER assigned pre-proposals. 11-25-19: MGMT IM-CP committee convened to discuss panel’s review of IM-CP assigned pre-proposals.
Research-based Planning Meetings	4 Planning Meetings 1 CC	04-23-19: VDHR-NWW Coordinated Project Planning Meeting for FY20-21. 05-10-19: Hard Winter Wheat Coordinated Project Planning Meeting for FY20-21. 05-31-19: Durum Coordinated Project Planning Meeting for FY20-21. 06-03-19: VDHR-SPR Coordinated Project Planning Meeting for FY20-21 (via conference call)
Nominations for Committee Membership; Elections/ Appointments	Steering Committee: 4 areas Executive Committee: 2 members Research Committees (n=7): 14 vacancies excluding Chair and Vice-Chair appointments	Steering Committee Re-Election of new members for the following constituent areas: Public Breeding – Barley; Malting & Brewing Industry; Seed Industry and Barley Pathology. Six individuals were elected. Executive Committee: Barley and Spring Wheat Reps Research Committees (RC): Hard Winter Wheat CP – 1 member VDHR Spring Wheat CP – 1 member and Chair VDHR Northern Soft Winter Wheat CP – 1 member VDHR Southern Soft Red Winter Wheat CP – 1 member FHB Management - 2 members, Chair and Vice-Chair Food Safety & Toxicology- 2 members, Chair and Vice-Chair Gene Discovery & Engineering Resistance – 1 member

3. Was this research impacted by the COVID-19 pandemic (i.e. university shutdowns, reduced or lack of support personnel, etc.)? If yes, please explain how this research was impacted or is continuing to be impacted.

COVID-19 did not have a significant impact on the functioning of the Networking & Facilitation Office during this award period. However, the Executive Director, the Director of Operations and the Research Technical Specialist were planning to attend the 6th

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International Symposium on Fusarium Head Blight in Banff, Canada scheduled for March. We were presenting a poster and had been invited to give a talk, but the Symposium was cancelled.

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

Undergraduate students are hired to work in the Headquarters branch office at Michigan State University assisting with processing of submitting proposals, organization of the annual forum, and maintain the projects/grants web-based database.

Flash & Dash Presentations; 2019 National FHB Forum - Flash & Dash (F&D) Presentations are for graduate students, post-docs and early career professionals. Presenters give a short (5 minute) 'flash and dash' presentation of the work highlighted in their poster prior to their designated poster sessions. This exercise gives these early career scientists presentation experience and increases the visibility of their research work by attracting interest to their poster during the poster session. Twenty individuals participated in the Flash & Dash session.

Poster Competition for Graduate Students and Post-Doctoral researchers - New this year at the 2019 National FHB Forum a poster completion was held for Post-Doctoral researchers and Graduate Students. Thirty-one individuals participated in the competition. The poster competition gives both graduate students and post-doctorates a chance to showcase their research and sharpen their presentation skills. The competition encourages these individuals to participate in the poster sessions and to interact with others who might not be in the same discipline as them. It also functions as a networking opportunity and allows them to create relationships with others who may be beneficial in their future careers and research.

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

Information is disseminated through the USWBSI's list serves, website, emails, blogs, FHB-alerts, extension-based materials and newsletters.

Training of Next Generation Scientists

Instructions: Please answer the following questions as it pertains to the award period (4/22/19 - 4/21/20). 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 FY18 award period?**

N/A

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 FY18 award period?**

N/A

If yes, how many?

- 3. Have any post docs who worked for you during the FY18 award period and were supported by funding from your USWBSI grant taken faculty positions with universities?**

N/A

If yes, how many?

- 4. Have any post docs who worked for you during the FY18 award period and were supported by funding from your USWBSI grant gone on to take positions with private ag-related companies or federal agencies?**

N/A

If yes, how many?

N/A – Not Applicable to this project

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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 award period. All columns must be completed for each listed germplasm/cultivar. Use the key below the table for Grain Class abbreviations.

NOTE: 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 FY18-FPR_Instructions for detailed more instructions for listing publications/presentations about your work that resulted from all of the projects included in the FY18 grant award. Only citations for publications published (submitted or accepted) or presentations presented during the **award period (4/22/19 - 4/21/20)** should be included. If you did not publish/submit or present anything, state ‘Nothing to Report’ directly above the Journal publications section.

NOTE: Directly below each citation, you **must** indicate the Status (i.e. published, submitted, etc.) and whether acknowledgement of Federal support was indicated in the publication/presentation.

Journal publications.

N/A – Not Applicable to this project

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

Nothing to report

Other publications, conference papers and presentations.

Forum Proceedings:

Canty, S., A. Hoffstetter, C. Campbell and R. Dill-Macky (Eds.). 2019. Proceedings from the 2019 National Fusarium Head Blight Forum, Milwaukee, WI; December 8-10. University of Kentucky, Lexington, KY.

Status: Published

Acknowledgement of Federal Support: Not applicable for this publication

Proceedings Abstract:

De Wolf, E., D. Shah, P. Paul, L. Madden, S. Crawford, D. Hane, S. Canty, R. Dill-Macky, D. Van Sanford, K. Imhoff and D. Miller. 2019. “Impact of Prediction Tools for Fusarium Head Blight in the US, 2009-2019.” In: S. Canty, A. Hoffstetter, H. Campbell and R. Dill-Macky (Eds.), *Proceedings of the 2019 National Fusarium Head Blight Forum* (p. 12), Milwaukee, WI; December 8-10. University of Kentucky, Lexington, KY.

Status: Abstract Published and Poster Presented

Acknowledgement of Federal Support: YES (Abstract and Poster)

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Newsletters:

Lilleboe, D., S. Canty, and R. Dill-Macky (Eds.). Winter/Spring 2020. *Fusarium Focus*. U.S. Wheat & Barley Scab Initiative. Volume 20, Issue 1.

Status: Published

Acknowledgement of Federal Support: Not applicable for this publication

Lilleboe, D., S. Canty, and R. Dill-Macky (Eds.). Summer 2019. *Fusarium Focus*. U.S. Wheat & Barley Scab Initiative. Volume 19, Issue 2.

Status: Published

Acknowledgement of Federal Support: Not applicable for this publication

On-line Articles:

Lilleboe, D. 2019, November. *Fusarium Head Blight in 2019: Serious Impact in Several States; Minimal to Moderate in Others USWBSI Survey of Small Grains Specialists Again Affirms That Weather Plays Major Role in Presence/Absence of This Disease*. U.S. Wheat & Barley Scab Initiative. Website: https://scabusa.org/pdfs/USWBSI-Article_2019_FHB-Summary_11-18-19.pdf.

Status: Published

Acknowledgement of Federal Support: Not applicable for this publication

NOTE: All Forum Proceedings, Newsletters and On-Line Articles are available in PDF format on the USWBSI's Website: <https://scabusa.org>.