

**USDA-ARS/
U.S. Wheat and Barley Scab Initiative
FY19 Final Performance Progress Report
Due date: August 31, 2021**

Cover Page

Principle Investigator (PI):	Santiago Mideros
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Fiscal Year:	2019
USDA-ARS Agreement ID:	59-0206-8-211
USDA-ARS Agreement Title:	Integrated Management of Wheat in Illinois
FY19 USDA-ARS Award Amount:	\$ 21,811
Recipient Organization:	The Board of Trustees of the University of Illinois Grants & Contracts Office 1901 S. First Street, Suite A Champaign, IL 61820
DUNS Number:	41544081
EIN:	37-6000511
Recipient Identifying Number or Account Number:	478609-802050-191000
Project/Grant Reporting Period:	7/1/19 - 6/30/21
Reporting Period End Date:	6/30/2021

USWBSI Individual Project(s)

USWBSI Research Category*	Project Title	ARS Award Amount
MGMT	Integrated Management of Wheat in Illinois	\$ 21,811
FY19 Total ARS Award Amount		\$ 21,811



26 October 2021

Principal Investigator

Date

* MGMT – FHB Management
 FST – Food Safety & Toxicology
 R – Research
 S – Service (DON Testing Lab)
 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 Management of Wheat in Illinois*

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

Investigate management strategies for FHB in Illinois using fungicide trials in Illinois.

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

a) What were the major activities?

In 2018, field trials were planted in two locations in Illinois (Urbana and Marion). Trials were established with two winter wheat varieties and then inoculated with infested corn in April and May of 2019. Field trials were treated with 9 combinations of wheat development (FGS 10.3, 10.5.1, 10.5.1+5) by fungicide (Miravis Ace[®], Prosaro[®], and Caramba[®]) combinations and two controls (unsprayed uninoculated and unsprayed). Harvest occurred in June and July of 2019. Samples were sent to USWBSI sponsored laboratory for DON quantification

In 2019, field trials were planted in the same two locations in Illinois. The same treatments as above were conducted. Harvest occurred in June and July of 2020.

b) What were the significant results?

Scab incidence was evaluated at two times each year of the project. Fusarium diseased kernels, grain moisture, test weight, and yield were evaluated at harvest. Samples were sent for DON testing.

All the results were sent to Dr. Pierce Paul (at The Ohio State University) for analysis and publication of results as an aggregate.

c) List key outcomes or other achievements.

- Field trials successfully conducted in 2019.
- Field trials successfully conducted in 2020.
- Data was collected aggregated and sent to collaborators for analysis and publication.
- Observations of the trials were used for providing updates to the FHB prediction center website.

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

Yes, only one location was sent for DON analysis for the samples from 2020. Further than that, this project was finalized as proposed thanks to the ability of the personnel to continue with the work despite the pandemic difficulties.

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

Six undergraduate students were trained and participated on seed preparation, field preparation (staking), planting, fungicide application, ratings for disease, FDK ratings, and sample preparation for DON analysis.

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

Dr. Nathan Kleczewski prepared articles for The Bulletin website, The Illinois Field Crop Diseases website, the FHB prediction Center, and presented talks to the Illinois Wheat Growers Association in 2019 and CCA training in October/November 2019. Extension activities were reduced in 2020 due to the pandemic and then to the change of PI.

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Training of Next Generation Scientists

Instructions: Please answer the following questions as it pertains to the **FY19 award period (7/1/19 - 6/30/21)**. 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 FY19 award period?

Yes No Not Applicable

If yes, how many? [Click to enter number here.](#)

2. Did any graduate students in your research program supported by funding from your USWBSI grant earn their Ph.D. degree during the FY19 award period?

Yes No Not Applicable

If yes, how many? [Click to enter number here.](#)

3. Have any post docs who worked for you during the FY19 award period and were supported by funding from your USWBSI grant taken faculty positions with universities?

Yes No Not Applicable

If yes, how many? [Click to enter number here.](#)

4. Have any post docs who worked for you during the FY19 award period and were supported by funding from your USWBSI grant gone on to take positions with private ag-related companies or federal agencies?

Yes No Not Applicable

If yes, how many? [Click to enter number here.](#)

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 **FY19 award period (7/1/19 - 6/30/21)**. 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	FHB Rating (0-9)	Year Released
Not applicable to this project.	Select Grain Class	Select what represents your most resistant check	Enter as text 0-9 rating	Select Year
Click here to enter text.	Select Grain Class	Select what represents your most resistant check	Enter as text 0-9 rating	Select Year
Click here to enter text.	Select Grain Class	Select what represents your most resistant check	Enter as text 0-9 rating	Select Year
Click here to enter text.	Select Grain Class	Select what represents your most resistant check	Enter as text 0-9 rating	Select Year
Click here to enter text.	Select Grain Class	Select what represents your most resistant check	Enter as text 0-9 rating	Select Year
Click here to enter text.	Select Grain Class	Select what represents your most resistant check	Enter as text 0-9 rating	Select Year
Click here to enter text.	Select Grain Class	Select what represents your most resistant check	Enter as text 0-9 rating	Select Year
Click here to enter text.	Select Grain Class	Select what represents your most resistant check	Enter as text 0-9 rating	Select Year
Click here to enter text.	Select Grain Class	Select what represents your most resistant check	Enter as text 0-9 rating	Select Year
Click here to enter text.	Select Grain Class	Select what represents your most resistant check	Enter as text 0-9 rating	Select Year
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Click here to enter text.	Select Grain Class	Select what represents your most resistant check	Enter as text 0-9 rating	Select Year
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Click here to enter text.	Select Grain Class	Select what represents your most resistant check	Enter as text 0-9 rating	Select Year

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

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Publications, Conference Papers, and Presentations

Instructions: Refer to the FPR_Instructions for detailed more instructions for listing publications/presentations about your work that resulted from all of the projects included in the FY19 grant award. Only citations for publications published (submitted or accepted) or presentations presented during the **award period (7/1/19 - 6/30/21)** 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. See example below for a poster presentation with an abstract:

Z.J. Winn, R. Acharya, J. Lyerly, G. Brown-Guedira, C. Cowger, C. Griffey, J. Fitzgerald, R.E. Mason and J.P. Murphy. 2020. "Mapping of Fusarium Head Blight Resistance in NC13-20076 Soft Red Winter Wheat." In: S. Canty, A. Hoffstetter, and R. Dill-Macky (Eds.), *Proceedings of the 2020 National Fusarium Head Blight Forum* (p. 12.), Virtual; December 7-11. Online: https://scabusa.org/pdfs/NFHBF20_Proceedings.pdf.
Status: Abstract Published and Poster Presented
Acknowledgement of Federal Support: YES (Abstract and Poster)

Journal publications.

None.

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

None.

Other publications, conference papers and presentations.

Paul, P.A., S. J. Ng, G. Bergstrom, K. Bissonnette, K. Bowen, C. Bradley, E. Byamukama, M. Chilvers, A. Collins, C. Cowger, H. Darby, E. DeWolf, R. Dill-Macky, P. Esker, A. Friskop, N. Kleczewski, A. Koehler, L. Madden, J. Marshall, H. Mehl, W. Moraes, M. Nagelkirk, N. Rawat, D. Smith, D. Telenko, S. Wegulo, and H. Young-Kelly. 2019. "Fusarium head blight management coordinated project: uniform fungicide trials 2018-2019." In: S. Canty, A. Hoffstetter, H. Campbell and R. Dill-Macky (Eds.), *Proceedings of the 2019 National Fusarium Head Blight Forum* (p. 20). Milwaukee, WI, Dec. 8-10, 2019. U.S. Wheat & Barley Scab Initiative, Online: https://scabusa.org/pdfs/NFHBF19_Proceedings_Web.pdf.
Status: Poster presented, and paper published.
Acknowledgement of Federal Support: Yes on both.