

**FY22 Performance Progress Report****Due date:** July 26, 2023**Cover Page**

<b>USDA-ARS Agreement ID:</b>	59-0206-2-101
<b>USDA-ARS Agreement Title:</b>	Breeding Fusarium Head Blight (FHB) Resistant Winter Wheat Varieties for Montana
<b>Principle Investigator (PI):</b>	Sue Mondal
<b>Institution:</b>	Montana State University - Bozeman
<b>Institution UEI:</b>	EJ3UF7TK8RT5
<b>Fiscal Year:</b>	2022
<b>FY22 USDA-ARS Award Amount:</b>	\$35,853
<b>PI Mailing Address:</b>	Montana State University, Plant Sciences & Plant Pathology 324 Leon Johnson Hall, PSPP Department Bozeman, MT 59717
<b>PI E-mail:</b>	suchismita.mondal@montana.edu
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<b>Period of Performance:</b>	May 1, 2022 – April 30, 2026
<b>Reporting Period End Date:</b>	April 30, 2023

**USWBSI Individual Project(s)**

USWBSI Research Category*	Project Title	ARS Award Amount
HWW-CP	Development of Montana Adapted FHB Resistant Winter Wheat Varieties	\$35,853
<b>FY22 Total ARS Award Amount</b>		<b>\$35,853</b>

I am submitting this report as an:  Annual Report

*I certify to the best of my knowledge and belief that this report is correct and complete for performance of activities for the purposes set forth in the award documents.*

DocuSigned by:

Suchismita Mondal

7/26/2023 | 2:23 PM MDT

Principal Investigator Signature

Date Report Submitted

† BAR-CP – Barley Coordinated Project  
 DUR-CP – Durum Coordinated Project  
 EC-HQ – Executive Committee-Headquarters  
 FST-R – Food Safety & Toxicology (Research)  
 FST-S – Food Safety & Toxicology (Service)  
 GDER – Gene Discovery & Engineering Resistance  
 HWW-CP – Hard Winter Wheat Coordinated Project

MGMT – FHB Management  
 MGMT-IM – FHB Management – Integrated Management Coordinated Project  
 PBG – Pathogen Biology & Genetics  
 TSCI – Transformational Science  
 VDHR – Variety Development & Uniform Nurseries  
 NWW – Northern Soft Winter Wheat Region  
 SPR – Spring Wheat Region  
 SWW – Southern Soft Red Winter Wheat Region

**Project 1:** Development of Montana Adapted FHB Resistant Winter Wheat Varieties

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

**Objective 1.)** Improvement in FHB resistance in MSU's winter wheat breeding program using both conventional and MAB breeding. MAB will be aimed to increase frequency of FHB resistant alleles in the winter wheat program.

**Objective 2.)** Screen Montana adapted winter wheat experimental lines for FHB resistance in a mist irrigated screening nursery located at the Southern Agriculture Research Center (SARC) in Huntley, MT. Experimental lines with FHB resistance will be advanced in the breeding program and considered for public release.

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

**Objective 1.**

**a) What were the major activities?**

New crosses were conducted and progressed through MAB in 2023

**b) What were the significant results?**

NA

**c) List key outcomes or other achievements.**

NA

**Objective 2.**

**a) What were the major activities?**

In 2022 advanced lines were screened for FHB resistance, two potential lines identified with moderate resistance, which were advanced to multilocation yield testing in Montana for evaluating yield and adaptation.

In 2023, early generation screening was implemented to screen at pre-yield trial stage. FHB disease development was good, and disease was rated. Harvest is pending.

**b) What were the significant results?**

Two potential lines identified with moderate resistance in 2022. Lines are being re-evaluated in 2023 for FHB resistance and yield.

**c) List key outcomes or other achievements.**

Harvest is pending.

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

We are training a research associate for inoculation and disease scoring.

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

Yet to disseminate results, yield trials were conducted to evaluate the yield potential of the potential FHB resistant lines, harvest is pending.

## Publications, Conference Papers, and Presentations

Please include a listing of all your publications/presentations about your FHB work that were a result of funding from your FY22 grant award. Only citations for publications published (submitted or accepted) or presentations presented during the **award period** should be included.

**Did you publish/submit or present anything during this award period May 1, 2022 – April 30, 2023?**

- Yes, I've included the citation reference in listing(s) below.  
 No, I have nothing to report.

### Journal publications as a result of FY22 award

*List peer-reviewed articles or papers appearing in scientific, technical, or professional journals. Include any peer-reviewed publication in the periodically published proceedings of a scientific society, a conference, or the like.*

Identify for each publication: Author(s); title; journal; volume; year; page numbers; status of publication (published [include DOI#]; accepted, awaiting publication; submitted, under review; other); acknowledgement of federal support (yes/no).

### Books or other non-periodical, one-time publications as a result of FY22 award

*Report any book, monograph, dissertation, abstract, or the like published as or in a separate publication, rather than a periodical or series. Include any significant publication in the proceedings of a one-time conference or in the report of a one-time study, commission, or the like.*

Identify for each one-time publication: Author(s); title; editor; title of collection, if applicable; bibliographic information; year; type of publication (book, thesis, or dissertation, other); status of publication (published; accepted, awaiting publication; submitted, under review; other); acknowledgement of federal support (yes/no).

### Other publications, conference papers and presentations as a result of FY22 award

Identify any other publications, conference papers and/or presentations not reported above. Specify the status of the publication.