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

Cover Page

| Principle Investigator (PI): | Deven See |
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| Phone: | 509-335-3630 |
| Fiscal Year: | 2015 |
| USDA-ARS Agreement ID: | N/A |
| USDA-ARS Agreement Title: | Genotyping Breeding Lines for FHB Resistance. |
| FY15 USDA-ARS Award Amount: | $ 45,000 |

USWBSI Individual Project(s)

<table>
<thead>
<tr>
<th>USWBSI Research Category*</th>
<th>Project Title</th>
<th>ARS Award Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>EC-HQ</td>
<td>Genotyping Breeding Lines for FHB Resistance.</td>
<td>$ 45,000</td>
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</tbody>
</table>

FY15 Total ARS Award Amount $ 45,000

Deven R. See  
Principal Investigator  7-19-2016  
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
FY15 Final Performance Report
PI: See, Deven
USDA-ARS Agreement #: N/A

**Project 1: Genotyping Breeding Lines for FHB Resistance.**

1. **What are the major goals and objectives of the project?**
The overall goal of this project is to develop FHB resistant wheat cultivars. The specific objectives are: support breeding programs with molecular markers and bioinformatic expertise to identify informative markers for germplasm enhancement.

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

   1) **major activities:** Genotyped 820 germplasm from the Southern Idaho breeding program

   2) **specific objectives:** performed genotyping by sequencing (GBS) on 190 lined, each line was sequenced to a depth of 2 million reads. These lines were also genotyped with 10 known informative markers for FHB. Genotyped an additional 630 lines with 20 molecular markers

   3) **significant results:** Jianli Chen was able to use the 190 lines in QTL mapping

   4) **key outcomes or other achievements:** Jianli Chen presented a poster at the 2015 FHB meeting.

3. **What opportunities for training and professional development has the project provided?**
The project and specifically the GBS work has provided training opportunities in bioinformatics and in the development of computational pipelines to facilitate calling next-gen sequencing fragments.

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

   Jianli Chen presented a poster at the 2015 FHB meeting.
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

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

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

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
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.

<table>
<thead>
<tr>
<th>Name of Germplasm/Cultivar</th>
<th>Grain Class</th>
<th>FHB Resistance (S, MS, MR, R, where R represents your most resistant check)</th>
<th>FHB Rating (0-9)</th>
<th>Year Released</th>
</tr>
</thead>
<tbody>
<tr>
<td>NA</td>
<td></td>
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</table>

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

(Form – FPR15)
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.

Nothing to Report

Journal publications.

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

Other publications, conference papers and presentations.