

Barley Coordinated Agricultural Project Work Plan FY06 (3/1/06 – 2/29/07)
Brian J. Steffenson, University of Minnesota

1) Describe the research, education, and outreach activities you are planning for the next year (3/1/06 – 2/29/07)

Research We will evaluate the 2006 Barley CAP germplasm as per the requirements outlined in the CAP Participants Guide. This includes the evaluation of spring germplasm for resistance to spot blotch at St. Paul where the lines and controls will be planted as short rows in two replicates. We will collect data on disease severity and infection response according to our standard laboratory protocols. Additionally, we will evaluate all of the 2006 Barley CAP germplasm for resistance to Septoria speckled leaf blotch. These evaluations will be conducted at the seedling stage in the greenhouse and will include two replicates. Plants will be scored for their infection responses according to our standard laboratory protocols. Finally, we also will participate in collaborative FHB trials conducted at Crookston and St. Paul, MN. We will assist in collecting data on heading date, FHB severity, and DON. All data collected from the above evaluation tests will be sent to Jennifer Kling in spreadsheets customized for her database manipulations.

Education I will be hiring one Ph.D. student who will be working on association mapping of disease resistance in the Barley CAP germplasm. This student will be working with other CAP members to perform these analyses.

Outreach I have already secured the internet domain name of “barleycap.org” for our project. I will send out a questionnaire to growers and users to identify the best means for disseminating information to them from the Barley CAP. I will be documenting all outreach activities in a spreadsheet and will work closely with Peggy Lemaux in the design of brochures, posters, and powerpoint presentations.

2) List specific outcomes and deliverables that will be accomplished in the first 6 months (3/1 – 8/31). These will be used as benchmarks for your bi-annual progress report.

- Spot blotch evaluations will be completed
- We will assist in the evaluation of FHB collaborative trials
- Questionnaires to growers and users will be sent out and the data summarized
- A search for the extension evaluator will commence if the time-table and budget permits

3) List specific outcomes and deliverables that will be accomplished in the second 6 months (9/1 – 2/29). These will be used as benchmarks for the bi-annual progress report.

- Summarized spot blotch data will be sent to Jennifer
- Septoria speckled leaf blotch evaluations will be made and data sent to Jennifer
- Extension evaluator will be hired if the time-table and budget permits
- Results from questionnaire will be incorporated into outreach materials
- A summary of outreach activities will be completed

Barley Coordinated Agricultural Project Biannual Progress Report
FY06 (4/1/06 – 9/30/06)
Brian J. Steffenson, University of Minnesota

1) Describe the research, education, and outreach activities you completed in the first half of the FY06 (4/1/06 – 9/30/06)

Research We evaluated the 2006 Barley CAP breeding germplasm (minus the winter breeding germplasm) for resistance to spot blotch in the field at St. Paul. The spot blotch inoculations were successful as severe infection was achieved in the nursery. Data on disease severity and infection response were recorded at the mid-dough stage of development and are being prepared for submission to Jennifer Kling. Additionally, we participated in the collaborative FHB trials conducted at Crookston and St. Paul by assisting in the threshing and preparation of samples for DON analysis. Evaluation of Barley CAP germplasm for resistance to Septoria speckled leaf blotch will be completed in the next two months.

Education I am searching for a Ph.D. student to work on the association mapping of disease resistance in the Barley CAP germplasm. In the meantime, I assigned my current Ph.D. student Ben Alsop to conduct the spot blotch disease evaluations in 2006 and prepare the data for Jennifer Kling. Our two replicate planting of CAP germplasm in the spot blotch nursery provided the sample material for morphological trait analysis by Magan Friskop, an undergraduate student working in Kevin Smith's laboratory.

Outreach I secured the internet domain name of "barleycap.org" for the project and discussed with Mike Schmitt, Associate Dean of Extension, the hiring of an extension evaluator within his group. I developed two questionnaires for surveying producers and users on how they obtain their information on barley. The survey for the users is complete, and the results will be summarized soon. The survey for the producers was postponed and will now be done in conjunction with a more comprehensive survey conducted by the Institute for Barley Malt Sciences. I gave a brief overview of the Barley CAP to the 3rd International Workshop on Barley Leaf Blights in Edmonton, Canada on July 27, the USWBSI Alien Introgression Workshop in Fargo, ND on August 14, and University of Saskatchewan in Saskatoon, Canada on October 5. I submitted an article for the CAP newsletter on our spot blotch evaluations and have provided input and feedback to Peggy Lemaux and Barbara Alonso on preparation of BarleyCAP outreach materials.

2) List specific outcomes and deliverables accomplished in the first half of FY06 (4/1 – 9/30).

- Completed spot blotch evaluations of Barley CAP germplasm
- Assisted in the FHB trials of Barley CAP germplasm
- Completed questionnaire surveys for producers and users
- Conducted outreach talks on the Barley CAP at three different venues
- Initiated discussions for the hiring of an extension evaluator