

**Barley Coordinated Agricultural Project Work Plan FY09 (4/1/09 – 3/30/10)**  
**Carl A. Griffey and Wynse Brooks, Virginia Tech**

**1) Describe the research, education, and outreach activities you are planning for the next year (4/1/09 – 3/30/10)**

Research: We will evaluate the 96 Virginia breeding lines selected for 2009 CAP with regards to the requirements outlined in the CAP Participants Guide. These lines will be evaluated in our 2008-2009 Advance and Preliminary yield trials at 2 locations (Blacksburg and Warsaw, VA) in plots comprised of seven 6 inch rows and 9 ft in length with three replicates per line, per location including the common Virginia winter Hulled (Wysor, Nomini, Price, Thoroughbred, Callao, VA 96-44-304, VA92-42-46) and Hulless (Doyce, Eve(VA01H-68), VA01H-125 and VA03H-61) barley checks. We will collect data on heading date, height, lodging, yield, plump grain, test weight, and grain protein concentration at these locations.

We will send breeders source seed of our 96 CAP lines to Patrick Hayes (10g), Kevin Smith (1g) Blake Cooper (10g) for vernalization, DNA extraction and seed multiplication respectively.

We will also evaluate all 960 CAP lines against two races of leaf rust (Race 8, and Race 30) and one isolate of Powdery mildew. We will evaluate disease infection type (0-4 scale) of 5-10 seedlings per entry (from breeder's source seed) in inoculated greenhouse tests.

Education: One PhD student, Patrick O'Boyle, is working on the inheritance of net blotch resistance; although, this is not directly associated with the Barley CAP initiative.

Outreach: Opportunities to highlight the Barley CAP project and our involvement with this initiative include presentations at field days and annual meetings of Virginia Small Grain Growers Association and Virginia Crop Improvement Association.

**2) List specific outcomes and deliverables that will be accomplished in the first 6 months (4/1 – 9/30). These will be used as benchmarks for your bi-annual progress report.**

- Send breeder source seed (for DNA extraction) to Kevin Smith by April 1
- Send breeder source seed (for seed multiplication) to Blake Cooper by March 1.
- Collect data for heading date, height, stem length, lodging of 96 lines in field (March- early June).
- Selection and harvesting of experimental plots (late June to early July).
- Grain samples analysis for yield, test weight, plump grain and grain protein conc. in August
- Send breeder trait data to Jennifer Kling in September

**3) List specific outcomes and deliverables that will be accomplished in the second 6 months (10/1 – 3/30). These will be used as benchmarks for the bi-annual progress report.**

- Seed preparation for planting 2008-2009 nurseries in early September
- Plant winter nurseries for 2008-2009, (September- early November).
- Begin Leaf rust evaluation of 960 CAP lines in greenhouse (November-December.)
- Send leaf rust data to Jennifer Kling in January

**Barley Coordinated Agricultural Project 6-month Progress Report**  
**FY07 (4/1/08 –9/30/08)**  
**Carl A. Griffey and Wynse Brooks, Virginia Tech**

**1) Describe the research, education, and outreach activities you completed in the first half of the FY 07 (4/1/08 – 9/30/08)**

Research: We identified the 96 Virginia breeding lines selected for 2009 CAP with regards to the requirements outlined in the CAP Participants Guide. These lines were evaluated in our 2007-2008 Advance and Preliminary yield trials at 2 locations (Blacksburg and Warsaw, VA) in plots comprised of seven 6 inch rows and 9 ft in length with three replicates per line, per location including the common Virginia winter barley checks (Wysor, Nomini, Price, Thoroughbred, Callao, VA 96-44-304, VA92-42-46, Eve(VA01H-68), and Doyce). We collected data on heading date, height, stem length, lodging, yield, moisture, test weight, and grain protein concentration at these locations.

Education: Patrick O'Boyle, a PhD student, is currently working on the inheritance of net blotch resistance in barley, and has commenced the initial phase of screening SSRs and SNPs to facilitate linkage mapping in a resistant x susceptible cross (Nomini x Hector).

Outreach: We highlighted the Barley CAP project and our involvement with this initiative in a presentation given at the May 2008 Virginia Small Grain Growers Association field day in Warsaw, Virginia.

**List specific outcomes and deliverables accomplished in the second 6 months (4/1/08-9/30/08).**

- Collected data for heading date, height, stem length, and lodging of the 96 Barley CAP germplasm lines in field tests (March- early June).
- Made selections and harvested experimental plots (late June to early July).
- Grain samples were analyzed for yield, moisture, test weight, and grain protein conc. in August.
- Sent 2008 Barley CAP seed to collaborators, Baik (food quality), Schwarz (LOX and Beta-glucanase), Wise (beta-glucan) and Jackson (net blotch, septoria, BYDV, stripe rust).