

**Barley Coordinated Agricultural Project Work Plan FY06 (4/1/07 – 3/29/08)**  
**Carl A. Griffey and Wynse Brooks, Virginia Tech**

**1) Describe the research, education, and outreach activities you are planning for the next year (4/1/07 – 3/29/08)**

Research: We will evaluate the 96 Virginia breeding lines selected for 2007 CAP with regards to the requirements outlined in the CAP Participants Guide. These lines will be evaluated in our 2006-2007 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, 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 three races of leaf rust (Race 8, Race 30 and ND89-3). 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: I have one PhD student that will be 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 August

**3) List specific outcomes and deliverables that will be accomplished in the second 6 months (10/1 – 3/31). These will be used as benchmarks for the bi-annual progress report.**

- Seed preparation for planting 2007-2008 nurseries in early September
- Plant winter nurseries for 2007-2008, (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 annual Progress Report  
FY06 (4/1/06 –3/31/07)  
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 06 (3/1/06 – 3/1/07)**

Research: We identified the 96 Virginia breeding lines selected for 2006 CAP with regards to the requirements outlined in the CAP Participants Guide. These lines were evaluated in our 2005-2006 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 and Doyce). We collected data on heading date, height, stem length, lodging, yield, moisture, test weight, and grain protein concentration at these locations.

We sent 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.

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

Outreach: Made a presentation of the non-technical Barley CAP poster at the August 2006 Virginia Small Grains Association annual meeting in Charles City, VA. We also highlighted the Barley CAP project and our involvement with this initiative in a presentation given at the May 2006 Virginia Small Grain Growers Association field day in Warsaw, VA.

**2) List specific outcomes and deliverables accomplished in the first 6 months (3/1/06 – 9/30/06).**

- Sent breeder source seed to Kevin Smith (for DNA extraction) and to Blake Cooper (for seed multiplication) in March and April.
- Collected data for heading date, height, stem length, and lodging of the 96 Barley CAP germplasm lines in field tests (March- early June).
- Made a presentation of the non-technical poster at the annual Virginia Small Grains Association meeting in August.
- 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 06 CAP winter barley seed to collaborators, Baik (food quality), Schwarz (LOX and Beta-glucanase), Wise (beta-glucan) and Jackson (net blotch, septoria, BYDV, stripe rust).
- Sent breeder trait data to Jennifer Kling in October.

**List specific outcomes and deliverables accomplished in the second 6 months (10/1/06-3/31/07).**

- Planted barley nurseries for 2006-2007 season in late September thru early November
- Evaluated 960 CAP lines in greenhouse to one leaf rust race and one powdery mildew isolate (December-January)