

Barley Coordinated Agricultural Project Work Plan FY07 (4/1/07 – 3/31/08)
Lee Jackson, University of California, Davis

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

Research: I will screen 96 CAP barley lines from each of 10 participating breeding programs (total of 960 lines) for reaction to scald, net blotch, stripe rust, and BYD under the natural disease pressure that occurs on barley at the UC Davis Agronomy Farm. I will assess single 8-ft rows of each entry in each of three screening nurseries set-up to provide proper environments and disease pressures for each disease while avoiding the confounding of one disease by high severities from other diseases. I'll use different spreader varieties and susceptible checks for each nursery. I'll plant the first screening nursery, for scald and net blotch, in mid-November; I'll plant the second nursery, for stripe rust, in early December; and I'll plant the third nursery, for BYD, in late February to early March. I'll record time of initial infection for each disease. I'll make two to three disease severity ratings for each disease during the growing season. I'll send excel spreadsheets containing results of each screening to the trait coordinator, Jennifer Kling, at the end of the crop season (June-July).

Education:

Outreach: I conduct an annual UC Davis Small Grains Field Day in May of each year. The Field Day is designed primarily for grain growers, PCA's, seed companies, and handlers of certified seed. Campus-based faculty and students, farm advisors, and others interested in small grain production and research also attend. The Disease Screening nurseries will be highlighted during the annual Field Day.

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.

- March through May: Take disease severity ratings for each of the three (net blotch/scald, stripe rust, and BYD) disease screening nurseries.
- UC Small Grains Field Day (May): Present results of the 1st year's disease screening tests.
- Summarize and submit results of the 1st year's disease screening nurseries (net blotch/scald, stripe rust, and BYD).

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.

- Plant 2nd year's scald and net blotch screening nursery (mid-November).
- Plant 2nd year's stripe rust screening nursery (early December).
- Plant 2nd year's BYD screening nursery (late February to early March).
- Record dates of initial infection for each disease in 2nd year's disease screening nurseries.
- Make first of several disease assessments for each screening nursery.

**Barley Coordinated Agricultural Project Biannual Progress Report
FY06 (4/1/06 – 3/31/07)**

Lee Jackson, University of California, Davis

1) Describe the research, education, and outreach activities you completed in Year 1

Research: My activities for the grant, screening 96 CAP barley lines from each of 10 participating breeding programs (total of 960 lines) for reaction to scald, net blotch, stripe rust, and BYD under the natural disease pressure that occurs on barley at the UC Davis Agronomy Farm, are underway. Three separate disease screening nurseries were planted using staggered planting dates and different spreader varieties to provide for proper environments and disease pressures for each disease while avoiding the confounding effects on one disease by high severities from other diseases. The first screening nursery, for scald and net blotch, was planted on November 15; the second nursery, for stripe rust, on December 4-5; and the third nursery, for BYD, on January 30. The nurseries currently are being observed on a weekly basis. Plant development stage is being recorded, and date of initial disease onset will be noted. When sufficient disease spread has occurred, the first of several disease ratings will be made. To date (March 20), the growing season has been unusually dry; the only disease currently visible is BYD. Peak disease severity usually occurs from mid-April through mid-May.

Outreach: The disease screening program and other aspects of the Barley Coordinated Agricultural Project, will be highlighted at the Annual UC Davis Small Grains and Alfalfa Field Day scheduled for April 25, 2007.

2) List specific outcomes and deliverables accomplished in Year 1.

- Seed increases were produced at UC IREC, Tulelake for varieties that are being used as disease spreaders/buffers for the separate disease screening nurseries (scald and net blotch; stripe rust; and BYD) that were sown on the UC Davis Agronomy Farm beginning in fall, 2006.
- Received seed from the 10 participating breeding programs (participating breeding programs were directed to send seed by mid-October).
- Planted three separate disease screening nurseries (the first screening nursery, for scald and net blotch; the second nursery, for stripe rust; and the third nursery, for BYD) and began weekly observations for plant development, disease incidence, and disease severity.