RiceCAP
USDA/CSREES

Progress
January-December 2005
Program Agenda
Houston, Texas

February 25, 2006
Montgomery B & C
A coordinated research, education, and extension project for the application of genomic discoveries to improve rice in the United States.
RiceCAP
Afternoon/Evening

- 1:00-2:30 Board Meetings – Synthesize report
- 2:30-3:30 Joint Board Meeting
- 3:30 Board Meeting – Jim and Neil
- 6:00-8:00 Board Reports to the group
- PI meeting
- 8:00-10:00 Outreach Team Meeting

RiceCAP Boards

Sheath Blight

- *Rhizoctonia solani*
- 50% yield loss (plots)
- Up to 20% yield loss in commercial fields
- Can lower milling quality
- More than $20 million/yr in fungicide costs to southern US rice growers

Milling Yield

Milling yield quantifies the percentage of rough, unprocessed rice that remains as edible rice after all milling steps have occurred. $$$
Objectives

I. Identify and use candidate genes and other molecular markers linked to quantitative trait loci which control milling quality and resistance to sheath blight disease.

II. Validate the function of candidate genes associated with milling quality and sheath blight resistance.

III. Develop technical training programs and resources to ensure implementation of molecular marker and gene validation technologies to solve rice problems.

IV. Provide educational opportunities for students and consumers emphasizing the potential of genomic research for improving the abundance and quality of rice.

Meetings and Workshops

- 1st Meeting, Tucson, AZ, November, 2004
- 2nd Meeting, Little Rock, AR June, 2005
- MAS workshop, Stuttgart, AR, June, 2005
- VIGS workshop, Ardmore, OK, November, 2005
- December 2005, completion of first year of effort
- 3rd Meeting, Houston, TX, February 2006
- MAS workshop, Ardmore, OK, June 2006
Newly funded Participating Scientists (Flexible funds)

- Brooks, Steve, USDA/ARS Stuttgart, AR
- Eizenga, Georgia, USDA/ARS, Stuttgart, AR
- Herry Utomo, LSU
- Korth, Ken, U of A, Fayetteville, AR
Objectives

I. Identify and use candidate genes and other molecular markers linked to quantitative trait loci which control milling quality and resistance to sheath blight disease.

II. Validate the function of candidate genes associated with milling quality and sheath blight resistance.

III. Develop technical training programs and resources to ensure implementation of molecular marker and gene validation technologies to solve rice problems.

IV. Provide educational opportunities for students and consumers emphasizing the potential of genomic research for improving the abundance and quality of rice.
Markers Unleashed
An Overview of DNA Marker Technology As It Applies to Rice Improvement

RiceCAP Marker-Assisted Breeding Workshop
June 14 - 16, 2005
Dale Bumpers National Rice Research Center
Monticello, AR

2005 MAS Workshop
Stuttgart, AR
RiceCAP Virus-Induced Gene Silencing and Stable RNAi Workshop

October 31 – November 5, 2005

The Samuel Roberts Noble Foundation, Inc.
Ardmore, Oklahoma

2005 VIGS Workshop
Ardmore, OK
AGENDA

1. Introduction to DNA marker technology
2. DNA isolation/ PCR techniques/ high-throughput genotyping and MAS
3. Assembling marker data into a genetic map
4. QTL mapping - theory
5. Data management for high-throughput genotyping and MAS
6. Bioinformatics, BLAST searching, etc. by Gramene members
7. Practical aspects of QTL mapping
8. Reverse genetics – TILLING
9. Microarrays – SAGE / MPSS
RiceCAP Workshop

- WHEN AND WHERE: 4 – 9 June 2006, Noble Foundation, Ardmore, OK
- NUMBER OF PARTICIPANTS: Limited to 50
- ON-LINE REGISTRATION: Website for registration - March 2006
- TRAVEL: Paid by participants. Noble will provide transportation to and from airport (Dallas, or Oklahoma City) at no charge
- Contacts: Jim Oard (225.578.1403), Rick Nelson (580.224.6625); Jim Correll (479.575.2710)