Rice Facts & Folklore

Manoomin, or wild rice (Zizania aquatica), is a sacred food to the Anishinaabeg Ojibwe, and is a key part of the ecosystem of the Northern Minnesota Lakes region. Minnesota is the center of the biodiversity of all wild rice. There are over 60,000 acres of natural wild rice growing throughout the lakes and rivers. Natural Lake wild rice is not planted, nor is it cultivated. It grows naturally on the lakes and rivers of Northern Minnesota, and other parts of the Great Lakes region, and is harvested by two people in a canoe using a push pole and two wooden sticks. It is usually a light brown color and has an amazing aroma.

Source: [http://www.savewildrice.org/](http://www.savewildrice.org/)

Breeders Conference Held in Memphis, TN

The Annual rice breeders meeting was held in Memphis, TN on February 14, 2007. The annual meeting is a forum for all of the U.S. rice breeders to exchange information about important aspects of the U.S. rice breeding programs and the U.S. rice industry. Topics included discussion of the Uniform Regional Rice Nursery (URRN), a set of advanced germplasm and reference cultivars; the data exchanged included agronomic information such as yield, heading dates, quality, and pest resistance. Reports also included rice production statistics and trends in the various rice producing states. Efforts on the various RiceCAP populations also was discussed along with future genotyping efforts being conducted by various RiceCAP PI’s. Jason Stone, from Horizon AG, also gave a short presentation on iPedigree, a software program to more accurately track, follow, archive, and share information with regard to both breeding materials and commercial seed lots.

As part of the RiceCAP outreach effort, Karen Ballard, University of Arkansas Cooperative Extension Service Evaluation Specialist, interviewed rice breeders at the conference and plans to interview more of their staff during the next few weeks. These interviews will serve as an evaluation of Objective 3 of the RiceCAP project and will be made available when completed. ***
Dr. Clare Nelson, who is leading the bioinformatics effort for RiceCAP, held a web-based navigation tutorial for RiceCAP PIs on Wednesday, February 21. Personnel involved with the RiceCAP effort remotely connected to Dr. Nelson’s lab and were able to view real-time navigation in the protected area of the RiceCAP database as well as ask Dr. Nelson questions about navigation and presentation of the research data.

Climate Change & Agriculture

The scale of agriculture’s vulnerability to global warming was highlighted late last year when the Consultative Group on International Agricultural Research (CGIAR), an umbrella organization representing 15 of the world’s top crop research centres, issued an estimate of the impact of climate change on agriculture. The most widely eaten grains — corn, wheat, and rice — are exquisitely sensitive to higher temperatures. In the case of rice, researchers found the plants were most sensitive to higher nighttime temperatures.

Most of the hunger resulting from global warming is likely to be felt by those who haven’t caused the problem: the people in developing countries. Researchers affiliated with CGIAR have called for a massive program to develop crops that will be able to cope with global warming.

Read the full text of this and other reports at http://www.theglobeandmail.com/servlet/story/
**RiceCAP Molecular Marker Roundtable Discussion Meeting**

RiceCAP will host a meeting to discuss the future of molecular marker work with rice. The objective will be to brainstorm on what "the state of the art" may be with regard to the use of molecular markers 5-10 years from now. Obviously, factors that will need to be considered include utility, ease of use, cost, high throughput, robustness, etc. The impetus for this meeting will be to help better position the rice community, including the rice breeders, to more effectively utilize these tools to improve rice varieties.

The meeting will be open to all, but will have a panel of invited speakers to help lead and formulate the discussion. If you know of anyone that might be interested in attending, please pass the information along to them.

The meeting will be from 1:00 pm-6:00 pm on Monday April 9 and 8:00-5:00 on Tuesday April 10. at the Dale Bumpers National Rice Research Center in Stuttgart, AR. Details about lodging and meeting agenda will be updated periodically at [http://www.ricecap.uark.edu/RiceCAP%20Marker%20Discussion%20Group.htm](http://www.ricecap.uark.edu/RiceCAP%20Marker%20Discussion%20Group.htm)

In order for us to finalize local arrangements, please let Jim Correll (jcorrell@uark.edu) and Terri Phelan (tlp02@uark.edu) know if you plan on attending.

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**Genotype a Rice Line for $ 400 !!!**

A DNA chip for rice is being developed as part of an NSF-funded grant entitled “Exploring the genetic basis of transgressive variation in rice” by Susan McCouch, (Cornell Univ., PI), Carlos Bustamante (Cornell Univ, co-PI), Georgia Eizenga (Arkansas, co-PI) and Anna McClung (Arkansas, co-PI). As part of this grant, 400 rice accessions of O. sativa) accessions are being genotyped using DNA chip technology to obtain genome-wide SNP and indel markers. A ‘once in a lifetime’ opportunity exists for rice researchers to get a very detailed fingerprint of their favorite rice lines, i.e. varieties, breeding lines, accesses, etc., at a reduced/ bargain price. The approximate cost is anticipated at $400 per line, depending on the number of lines included. The 400 rice accessions included in the project can be downloaded as an Excel (.csv) file from the project web site [http://www.ricehapmap.org](http://www.ricehapmap.org), select ‘Accession Information’ below ‘Project Information’ on the left hand side.

RiceCAP has committed to including all the parental lines from the RiceCAP populations. To maximize the information obtained from this investment, plan to collect typical phenotypic data like heading date, plant height, kernel length/width, kernel weight, etc. on the lines being included from a single environment. The combined data can then be used for association mapping and comparison to the 400 lines included in this NSF-funded study. For further information on the project, contact Anna (anna.mcclung@ars.usda.gov), Georgia (geizenga@spa.ars.usda.gov), or Susan (srm4@cornell.edu).

If you are interested in having your ‘favorite’ lines included in this effort please contact Georgia (geizenga@spa.ars.usda.gov) by April 2, 2007 to indicate your interest. Further information will follow, once we have an idea of who is interested. The genotyping will be done in early Fall 2007 (September-October).

***
Submitted by Karen Moldenhauer

The Plant Breeding Coordinating Committee SCC-80 held a workshop entitled Sustaining Plant Breeding: A Vital Capacity for U.S. National Goals February 7 - 9 in Cary N.C. The purpose of the workshop was to establish the plant breeding coordination committee as a long-term forum for leadership regarding issues, problems, and opportunities of strategic importance to the public and private sector of the U.S. national plant breeding effort. The discussion encompassed the areas of Excellence, Global Economy, Rural America, Healthy Population, Environment and Safety and Security. Plant breeding was defined as the ultimate impact science where plants are the elements of solar collection arrays supporting civilization. Total factor productivity will be required to feed the growing population and is a key aspect and challenge of globalization which includes trade, productivity, finance, flow of information on the web, people, culture and health. Plant breeding for value-added traits was also emphasized. There have been many success stories in plant breeding which have improved rural life in the past which have involved yield and stress resistance. Meeting these challenges may require a paradigm shift. Plant breeders are food professionals and also need to emphasize improving plant nutrition. Through breeding, more nutritious crops will become available while maintaining a stable food supply. Through all of the changes which may occur in plant breeding efforts, there is a growing concern to maintain harmony with the environment. We need to be on the offensive not defensive where the environment is concerned. Overall it was a very good meeting where goals were set for the future. The summary of the annual meeting may be viewed at http://cuke.hort.ncsu.edu/gpb/pr/pbcssummary2007.html

International Network for Quality Rice (INQR) Holds First Workshop

The International Network for Quality Rice (INQR) has been forming over the past 4 months and now has 76 members from across the rice growing region of the world. Issues of quality transcend the barriers of germplasm classes, allowing a truly global network. The INQR is co-chaired by Melissa Fitzgerald and Christine Bergman. In April, the INQR will hold its first workshop, and this will be the first workshop this century that is devoted to the traits of grain quality. We will spend a full day analysing the data from our amylose project – undertaken by 32 members of the INQR, including 26 cereal chemists and 6 starch scientists and starch geneticists. We will recommend a new method to measure amylose. The workshop, Clearing Old Hurdles with New Science – Improving Rice Grain Quality, will be held at IRRI, Philippines, April 17 – 19. We aim to bring new science to the old traits to help us to understand quality better and to help us to devise better screening methods, and new traits defining quality. Anyone interested can contact Melissa Fitzgerald (m.fitzgerald@cgiar.org) for more information. Also, see brochure at http://www.ricecap.uark.edu/events.htm.

Workshops

Sustaining Plant Breeding Workshop Held
Outreach Efforts

Report from Rick Cartwright

Rick Cartwright, Arkansas Extension Agent, has given presentations about RiceCAP at various winter grower meetings in Arkansas as follows: Prairie County, January 8, 130 attendees; Craighead County, January 9, 80 attendees; Jackson County, January 10, 75 attendees; Poinsett County, January 11, 100 attendees; Crittenden County, January 16, 50 attendees; Mississippi County, January 17, 40 attendees; Clay County, January 19, 120 attendees; Greene County, January 19, 50 attendees; Woodruff County, January 26, 20 attendees; Lee County, February 9, 25 attendees; Arkansas County (DeWitt), February 20, 50 attendees; Cross County, February 21, 25 attendees; and Lawrence County, February 22, 80 attendees. Approximately 200 to 300 RiceCAP brochures were distributed at the grower meetings in total. The RiceCAP posters were displayed at 6 of the grower meetings and the Flip Chart was utilized at 2 meetings. Additionally, Cartwright displayed the posters at the Arkansas Rice Conference in Wynne on February 13, about 125 attendees, and gave a presentation on RiceCAP to the Pesticides in Agriculture Class at the University of Arkansas, Fayetteville on February 16 (16 students from various backgrounds). Please contact Rick Cartwright if you would like to use the flip chart in your presentations, or download a digital version of the flipchart, poster, and brochure at http://www.ricecap.uark.edu/outreach.htm.

The new RiceCAP questionnaire, developed by the RiceCAP outreach team, was used to survey attendees at the Prairie, Craighead, Jackson, Poinsett, Crittenden, Mississippi, Clay, Lee, Arkansas and Lawrence County meetings and the students in the Pesticides in Agriculture Class. Results of these surveys will be available in the March newsletter. ***

Confusion Over Liberty Link Rice Remains

In Arkansas, the LL601 and related Liberty Link developments has resulted in confusion in the rice industry. To date, the confusion continues as farmers and other members of the industry do not know many of the specifics about the problem. This has also extended even to the regulatory personnel in the state. There is a critical need for basic information about this issue. The most confusing practical issue revolves around the methods for sampling and detection of the LL genes in rice. While the testing protocols were put into place to detect the BAR gene or its promoter at a level of 0.01% or above with a 95% level of confidence, certain testing labs are interpreting their results differently than what the milling industry and apparently USDA intended. See the GIPSA website at http://www.gipsa.usda.gov/GIPSA/webapp?area=newsroom&subject=landing&topic=llrice.

This confusion has led to reports of LL contamination at levels below 0.01% but still present. This has resulted in a division of opinion between the seed industry--which would like to be able to sell seed that tests below 0.01%--and the milling industry and others committed to the at-
Outreach (continued)

Confusion Over Liberty Link Rice Remains

tempt to remove the LL rice from southern U.S. rice, who have interpreted any positive result as unacceptable. So far, nobody has been able to explain why these differences occur or why they are permitted, but it would certainly be a good thing if someone knowledgeable in this area could resolve the problems associated with this testing. (Read related LL601 articles in RiceCAP newsletters beginning with September 2006 [http://www.ricecap.uark.edu/news.htm].)

***

Rick Norman (front) and Charlie Parsons (right) review the RiceCAP poster at the recent Arkansas Rice Conference, February 14, in Memphis, TN.

Dr. Rick Cartwright, Arkansas Extension Agent, at the winter Grower’s Meeting, Clay County, January 19 (contributed by Scott Monfort).

Winter Grower’s Meeting, Lawrence County, February 22 (contributed by Scott Monfort).
# Calendar of Events

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### Schedule of Events

- 4/9-10/07—Marker Discussion Group meeting, Stuttgart, AR.
- 5/13-6/1/07—Rice Production Workshop (IRRI), Philippines.
- 8/20-31/07—Rice Breeding Course (IRRI), Laying the Foundation for the Second Green Revolution.
- 2/18/08—Annual RiceCAP Meeting, tentative date.

### Event Details

For all event details, see the appropriate link at [http://www.ricecap.uark.edu/events.htm](http://www.ricecap.uark.edu/events.htm)

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**RiceCAP**

A coordinated research, education, and extension project for the application of genomic discoveries to improve rice in the United States. A project supported by the National Research Initiative (NRI) of the Cooperative State Research, Education and Extension Service (CSREES).

We're on the web!

[www.ricecap.uark.edu](http://www.ricecap.uark.edu)