Rice Notes

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August 2006 Rice Newsletter

DON'T FORGET THE RICE FIELD DAY!

★ Wednesday, August 30, 2006 ★

The annual Rice Field Day will be Wednesday, August 30, 2006, at the Rice Experiment Station (RES), Biggs, California. You and your associates are cordially invited to join us to observe and discuss research in progress at RES. Rice Field Day is sponsored by the California Cooperative Rice Research Foundation and University of California with support from many agricultural businesses.

7:30 - 8:30 A.M.	**REGISTRATION** • Posters and Demonstrations
8:30 - 9:15 A.M.	**GENERAL SESSION** • CCRRF Annual Membership Meeting • D. Marlin Brandon Rice Research Fellowship • California Rice Industry Award
9:30 – NOON	**FIELD TOURS OF RICE RESEARCH** • Variety Improvement • Disease Resistance • Insects and Control • Weeds and Control
NOON	**LUNCH**

The program will conclude at noon with a complimentary luncheon. The RES is located on Hwy. 162, about two miles west of Highway 99 north of Biggs, California.

Red Rice Update

By Chris Greer, UCCE

Red rice poses a serious risk to the California rice industry and has the potential to impact rice yield and quality if this weed is allowed to spread and establish populations throughout rice fields in the state. This weed is prevalent in all of the southern U.S. rice producing states and continues to be a major constraint to production there.

Red rice is a member of the same species (Oryzae sativa) as cultivated rice grown in California. The name "red rice" refers to the distinguishing red bran that covers the kernels of red rice grain. Red rice is problematic because of the weedy characteristics. This weed has a vigorous growth and tillering habit making it a vigorous competitor for space and resources. Competition for these resources leads to reduced rice yields. In addition, red rice has an asynchronous reproductive cycle. Thus, heading may occur over a prolonged period of time producing seeds that shatter easily at maturity. Seeds that fall to the soil surface may germinate when conditions are favorable or remain dormant for several years before germinating. Dormancy of red rice seeds leads to some challenges in developing an effective management strategy for this weed. In addition, chemical control of red rice during a rice cropping season is difficult since this weed is the same species as cultivated rice.

Red rice is also a cause of concern at the mill. The presence of red rice can lower the grade of milled rice. For example, there is a maximum limit of 0.5% red rice and damaged kernels (singly or combined) for Grade U.S. No. 1. Removing the red rice seeds at the mill may be done using optical sorters and additional milling but may increase the cost to the miller and result in a reduced price for the producer.

Many of you are aware that red rice has been identified in a couple of Colusa and Glenn County fields since 2003. So far this year red rice is in fields where it occurred in 2005 as well as in one field that was not known to be infested last year. Growers with identified red rice infestations have been proactive and aggressive in removing red rice plants from fields prior to heading and should be commended for their actions. The rice industry as a whole must show this same dedication if we are to gain the upper hand on this pest.

UC in conjunction with growers, County Agricultural Commissioners, the California Rice Experiment Station and the California Rice Commission has been working to develop effective management strategies for infested fields. Thus far these plans have shown promise in reducing red rice populations in infested fields. However, it must be realized that there is no quick fix for this pest. Seed dormancy of this weed makes this a multi-year endeavor in cleaning up a field.

Although the presence of red rice is not a quarantine issue, the California rice industry must be proactive if we are to effectively manage this pest and prevent the more widespread dissemination and establishment of red rice. One of the most important contributions you can make to the industry at this time is to scout your fields very closely for the presence of red rice. Prior to heading, red rice may be mistaken as watergrass escapes because it is about a foot taller and lighter green in color than our

Calrose varieties. Upon closer examination, the red rice plants have prominent ligules and auricles that are absent from watergrass plants. Leaves of red rice plants are also much longer and rougher to the touch than our Calrose varieties. It is impossible to accurately identify red rice from your pick-up so please take a closer look at any weeds that seem suspicious.

Included in this newsletter is a sheet with photos of red rice at different stages. If you need more identification sheets please contact your local Cooperative Extension Office. If you suspect you have red rice in one of your fields please contact Chris Greer (530-458-0578; cagreer@ucdavis.edu) or Cass Mutters (530-538-7200; rgmutters@ucdavis.edu) UC Cooperative Extension Advisors, for help with identification and developing a management plan.

2006 Growing Season

Recent high temperatures have led to advanced crop development with several varieties heading earlier than normal. In general plant development is about 10 to 14 days ahead of schedule. I have seen fields of early Calrose varieties (e.g. M-202, M-204, M-205) begin heading by 70 days and very early varieties (e.g. M-104) start heading by 65 days after planting. Although the response to the high temperature is wide spread, the accelerated growth appears to be more pronounced in the later planted fields.

A comparison of degree day accumulation from May 15 to July 26 shows that 2006 has been warmer thus far than 2004 and 2005 (Table 1).

Table 1
Accumulated Degree Days from May 15 to July 26.

Year	Degree-Days
2004	1063
2005	1066
2006	1235

Using a threshold of 58º F, DD accumulation for 2006 rice planted on May 15 is 169 units ahead of 2005 and 172 units ahead of 2004. Lower yields are often associated with shortened periods of vegetative growth.

Another potential consequence of the weather is pollen desiccation. Plants flowering during hot spells may be more susceptible to high-temperature blanking due to the pollen drying out before fertilization takes place. In addition, more lodging frequently occurs in years when high temperatures coincide with internode elongation resulting in tall plants with weaker straw strength.

Warm night temperatures and high humidity over the past couple of weeks may be favorable for rice blast. Keep an eye out for rice blast lesions if you are growing in an area that has a history of rice blast, pay particular attention to M-104 and M-205. Fields that have excessive nitrogen or have been subjected to drought stress by prolonged drain times for herbicide applications will be at greater risk. Very hot temperatures that have occurred during the day are not favorable for disease development. However, the overnight conditions we have been experiencing are almost ideal for rice blast development.

The essential processes for rice blast disease development (sporulation, germination and infection) all require periods of high relative humidity and leaf wetness. The time taken to complete

each of these processes is dependent upon the temperature during the leaf wetness period. The optimum temperature for these processes is around 82° F. Temperatures higher or lower than this optimum temperature slow the progress of the infection process.

Take care,
Cass

Alternative Cropping Systems in Rice Field Day

9:00 AM, Thursday, August 17, 2006
Rice Experiment Station

The University of California will host a field meeting at the Rice Experiment Station near Biggs, CA. You are invited to observe and discuss differences in stand establishment in relation to weed control, fertility management, and down stream water quality in each of the following five systems.

1. Conventional water seeded
2. Conventional drill seeded
3. Delayed stale seedbed, water seeded (spring tilled and treated with Round-up after the first weed flush and then water seeded)
4. No-till, water seeded (flushed to germinate weeds, Round-up treatment and then water seeded)
5. No-till, drill seeded (flushed to germinate weeds, Round-up treatment and then drill seeded).

A. Long panicle that shatters easily.

B. Patch of red rice next to levee.

C. Ligule and auricles of red rice.

D. Red rice seeds with long awns.

Photos courtesy of CAGreer.