University of California
Agriculture and Natural Resources
Cooperative Extension

Making a Difference for California

Rice Briefs

UCCE

UNIVERSITY OF CALIFORNIA COOPERATIVE EXTENSION COLUSA COUNTY
P. O. Box 180, 100 Sunrise Blvd., Suite E, Colusa, CA 95932—Tel. (530) 458-0570 Fax (530) 458-4625

March 2010

2009 Rice Variety Trials Results

EVERY YEAR variety trials are established throughout California's rice producing areas. The trials are a cooperative effort between UCCE and the Rice Experiment Station (RES). Their objective is to determine production potential and adaptability of new rice lines for local conditions, as well as the response of commercial varieties to local weather, soil and agronomic practices.

The trials are conducted in growers fields in several locations in the rice producing counties of California. The tests are grouped as very early, early and intermediate/late. Lines are planted in the most appropriate location for their maturity group, taking into consideration weather and the variety grown at the field where the test is established (to avoid early or late harvesting). Maturity groups are classified according to the number of days from planting to 50% heading for a variety grown at the RES (Biggs, CA), and they are very early (<90 days to 50% heading), early (90-97 days to 50% heading) and intermediate/late (>97 days to 50% heading). Commercial varieties are included in most tests and their yields shown below (Tables 1, 2 and 3). Tests are also conducted at the RES, where ease of harvest permits conducting all three tests.

Varieties are grown in plots 200 square feet within commercial fields and managed by cooperating growers in the same manner as the rest of the field. Plots are harvested using a research plot combine, and yields converted to lbs/acre at 14% moisture.

Remember that the trials are conducted in small areas; therefore, yields presented here are a relative indication on how a variety will perform.

Red Rice Update

UCCE efforts to monitor red rice infestations in California continued during 2009. Red rice was first "rediscovered" in a single field in Glenn County in 2003 and later in a few other fields in Glenn and Colusa counties. In 2008, a survey of fields surrounding known infested sites was conducted to determine if red rice had spread to other fields. The

(Continued on next page)

Table 1. Very early rice variety tests, 2009.

Variety	Grain type[1]	Average grain yield (lbs/A)	Single location yields (lbs/A)				Seedling vigor (1-5)[3]	Days to 50% heading	Lodging (1-99)[4]
			RES[2]	Sutter	Yolo	San Joaquin			
CM-101	SWX	8,480	7,640	7,870	10,760	7,650	4.9	84	9
L-205	LR	9,310	9,430	9,630	11,220	6,970	4.8	93	2
L-206	L	9,720	9,710	10,160	10,880	8,120	4.9	88	1
M-104	M	9,380	7,180	10,040	11,770	8,530	4.9	82	2
M-202	M	9,310	8,080	9,070	11,400	8,720	4.9	92	10
M-206	M	9,840	8,940	9,390	12,570	8,440	4.9	88	5
S-102	S	9,030	8,230	8,480	11,930	7,480	4.9	81	4

2009 Rice Variety Trials Results continued

Table 2. Early rice variety tests, 2009.

Variety	Grain type[1]	Average grain yield (lbs/A)	Single location yields (lbs/A)				Seedling vigor (1-5)[3]	Days to 50% heading	Lodging (1-99)[4]
			RES[2]	Butte	Yuba	Colusa			
CM-101	SWX	7,780	8,700	8,740	6,670	6,990	4.8	79	43
L-205	LR	8,840	9,570	8,790	8,570	8,420	4.9	86	29
L-206	L	9,550	10,840	9,610	9,150	8,600	4.9	81	19
M-202	M	8,780	8,940	9,690	7,940	8,560	4.9	86	48
M-205	M	9,430	9,430	9,830	8,790	9,680	4.9	90	25
M-206	M	8,780	9,080	8,710	8,530	8,800	4.9	81	43
M-208	M	8,810	9,170	9,400	7,930	8,730	5.0	87	43
S-102	S	8,400	9,700	7,800	7,950	8,130	4.8	75	42

Table 3. Intermediate/late rice variety tests, 2009.

Variety	Grain type[1]	Average grain yield (lbs/A)	Single location yields (lbs/A)			Seedling vigor (1-5)[3]	Days to 50% heading	Lodging (1-99)[4]
			RES[2]	Glenn	Sutter			
L-205	LR	8,550	9,170	9,910	6,570	4.4	94	4
L-206	L	9,290	9,950	10,440	7,470	4.7	85	10
M-202	M	8,200	8,300	9,230	7,080	4.8	89	34
M-205	M	9,200	9,290	10,120	8,180	4.9	91	29
M-402	MPQ	9,240	9,110	10,610	8,010	5.0	104	6

[1]S=short; M=medium; L=long; PQ=premium quality; WX=waxy; R=Newrex; SR=stem rot resistant
[2]RES=Rice Experiment Station, Biggs, CA
[3]Subjective rating of 1-5 where 1=poor and 5=excellent seedling emergence.
[4]Subjective rating of 1-99 where 1=none and 99=completely lodged.

Red Rice Update continued

survey showed that red rice was still present, but that its distribution was limited to the fields where it had been originally found.

In 2009, soil samples were taken from infested fields to determine if red rice seeds were present in the soil. Samples were taken in areas where red rice plants were present or where patches had existed before and in areas where no red rice plants were visible. Samples were washed through a screen small enough to prevent passage of red rice seeds.

Soil samples collected did not have viable red rice seeds in them. Additionally, fewer red rice plants were noted in the infested fields. Affected growers monitor their fields constantly and have implemented mitigation practices to reduce infestations.

UCCE will continue monitoring infested areas and surrounding fields to prevent further spread of this weed. Thanks to the diligence of affected growers, the severity of infestations seem to be decreasing.

If you have any questions or find plants that you suspect might be red rice, contact your Farm Advisor. Initial infestations are easier to eradicate than established ones.

Rice Water Weevil Distribution in California Rice Fields

Current treatment recommendations for rice water weevil (RWW) control suggest applying insecticides only 30 to 50 feet adjacent to borders and levees. This recommendation was developed soon after the RWW was introduced into California. Since then, there have been many changes in the way rice is grown. With this in mind, field experiments were conducted during 2009 to determine if the distribution of the RWW in California rice fields is more prevalent around field borders and levees.

Small plots were established in commercial rice fields in Princeton, Maxwell, Colusa and Oroville. Plots were set up 15, 100 and 200 ft away from one of the borders of the field. At the Oroville field, the plots that were 200 ft from the border of the field were approximately 20 ft from a weedy levee. RWW adult activity was determined by counting plants with adult feeding scars at the 3-5 leaf stage of rice. RWW larvae were sampled by taking soil cores 6 and 8 weeks after seeding.

At the Princeton location RWW density was the highest. In average, 38% of plants had adult feeding scars, regardless of distance from the edge of the field. Similarly, number of larvae/core was not affected by distance from the edge of the field. In average, plots had 2 and 3 larvae/core at 6 and 8 weeks after seeding, respectively.

At the Maxwell and Colusa locations, RWW density was moderate. There was significantly more adult activity closer to the edge of the field than 100 or 200 ft away (Fig 1). Significantly more larvae/core were found in plots 15 ft from the edge of the field than in plots 100 or 200 ft away (Fig. 2).

At the Oroville location RWW density was very low. Adult activity was higher closer to the weedy levee than closer to the field's edge. However, when comparing the number of larvae/core, no statistical differences were found among distances. In average, there were 0.3 larvae/core at all distances from the edge of the field. Nevertheless, there was a tendency to find more RWW larvae in the plots closer to the weedy levee.

Based on the number of plants with adult feeding scars and larvae/core at three distances from the field's edge, RWW infestation appears to be more severe near field borders and levees, specially when RWW density is low to moderate. In only one location, Princeton, was the RWW infestation widespread through the field. RWW density at this location was the highest. All other fields had an overall average population of less than one larva/core. However, near the field's edge, larvae/core number was usually higher than one, a density commonly considered threshold in California.

These results confirm that edge and levee treatments in California rice are adequate to manage moderate RWW populations. When populations are higher, the RWW seems to be distributed more uniformly across the field. Managers should keep this in mind when planning their RWW insecticide applications. Work is currently underway to develop a monitoring method that can be used to predict the level of RWW infestations.

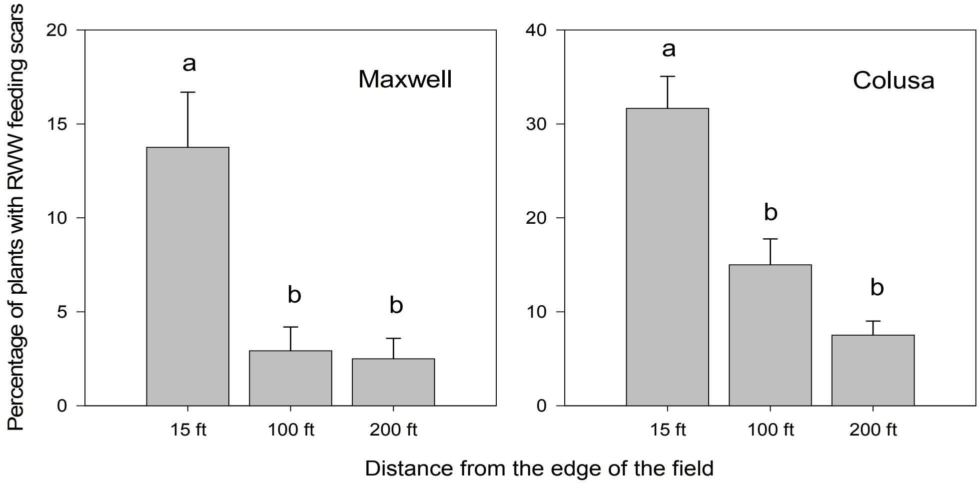

Fig. 1. Percentage of plants with rice water weevil (RWW) adult feeding scars at three distances from the edge of the field. Bars followed by different letters indicate statistical differences between means.

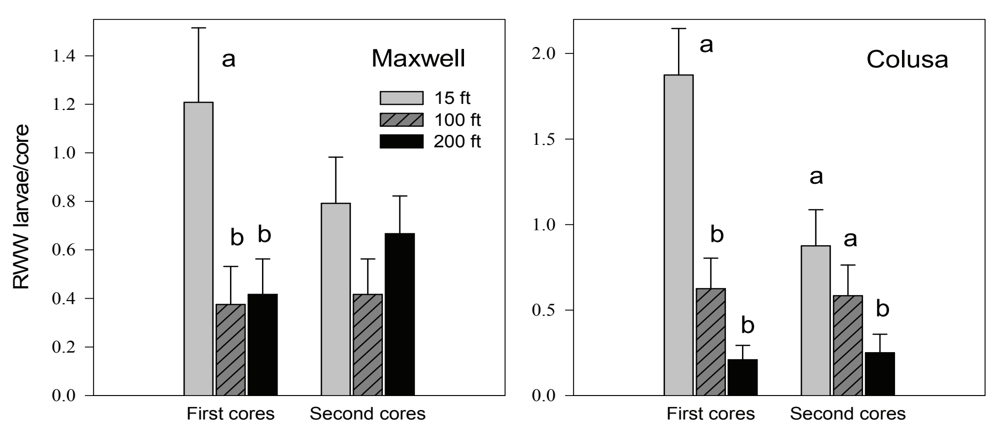

Fig. 2. Number of rice water weevil (RWW) larvae/core at three distances from the edge of the field. Bars followed by different letters indicate statistical differences between means.

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This newsletter is produced by:

Luis Espino

Farm Advisor

P.O. Box 180
100 Sunrise Blvd., Suite E
Colusa, CA 95932
(530) 458-0570
(530) 635-6234
Email: laespino@ucdavis.edu
http://cecolusa.ucdavis.edu/rice/

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University of California
P.O. Box 180
Colusa, CA 95932

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