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CALIFORNIA RICE VARIETIES

DESCRIPTION AND PERFORMANCE SUMMARY OF THE 1999 AND MULTIYEAR STATEWIDE RICE VARIETY TESTS IN CALIFORNIA

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University of California Cooperative Extension rice variety evaluation tests were conducted in the Sacramento and San Joaquin Valleys in 1999. This program, a cooperative effort involving the California Cooperative Rice Research Foundation, Inc. (CCRRFI) and the United States Department of Agriculture (USDA), compares advanced breeding lines with commercially available rice varieties and evaluates preliminary breeding lines to determine their adaptation to the principal rice growing areas of California. Entries in the tests include lines and varieties developed by CCRRFI rice breeders. The program is partially funded by the Rice Research Board and cooperating growers provide land, water and on-site management for the tests. Names and brief descriptions of the current publicly developed varieties are listed in Table 1.

Planted rice acreage expanded to 576,180 in 1999, an increase of 13% over 1998. Medium grain varieties were dominant constituting 85% of the acreage (Table 2). M-202 and M-204 were the most widely planted medium grains, 353,330 and 55,890 acres, respectively. Over 13%, (76,940 acres), of the rice acreage was planted to short grains. As a group, the Japanese premium quality varieties were the most widely planted short grain (37,450 acres) followed by Calmochi-101, a sweet waxy-rice (28,230 acres). Long grain varieties represented a small fraction, (2.2%), of the planted rice acreage in 1999

The1999 season was punctuated with cool early-season temperatures, which slowed stand establishment. Continued cool conditions throughout the growing season delayed the maturity of both rice and weeds. Timing of weed control was challenging and weed pressures were high, especially with sprangletop and herbicide resistant watergrass. Unseasonably cool night temperatures during July (Table 3) contributed to poor seed set in many areas. The suboptimal temperatures during key plant development stages contributed to the low yields in many areas. Additionally, a prolonged period of severe north winds, during harvest, increased grain fissuring.

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EXPERIMENTAL PROCEDURE

Cultivars and Locations

Field experiments were conducted at eight farm locations in the rice growing counties of California. Two classes of tests were conducted at each site: 1) Advanced tests consisting of advanced breeding lines and commercial varieties; and 2) Preliminary tests consisting of lines to be newly evaluated on a statewide basis. Advanced and preliminary tests were conducted in three maturity groups, Very Early, Early, and Intermediate to Late. Entries in each test were generally restricted to a single maturity group to avoid too early or too late maturation relative to the field variety of the test location. Commercial varieties in the very early and early maturity classes, however, were evaluated in both Very Early and Early tests. Advanced and preliminary lines from the three maturity groups were also evaluated at the Rice Experiment Station (RES), Biggs, California, for a total of 22 statewide tests. Advanced tests were arranged in randomized complete block designs with four replications, while preliminary lines were planted in two replications. Seed for the tests was provided by the RES. Maturity groups, test locations, planting dates, and commercial standards in each test were as follows:

Very Early Maturity Group. Nine advanced breeding lines and nine commercial varieties were evaluated in Advanced Tests at each of the following locations.

	Date Planted
• Butte County (RES)	5/12, 5/26 (Reps 1&2, 3&4 respectively)
• San Joaquin County (Brumley)	5/10
• Sutter County (Lauppe)	5/14
• Yolo County (Geer)	5/4

Commercial varieties included Calmochi-101, Calhikari-201, Calmati-201, M-103, M-202, M-204, L-204, L-205, and S-102. Twenty-three experimental lines with Akitakomachi as a standard were also evaluated in the Preliminary Test at each location. Advanced and preliminary experimental lines at each location were entries from the RES breeding program.

Early Maturity Group. Nine advanced and eleven commercial varieties were evaluated in the Advanced Tests at each location.

	Date Planted
• Butte County (RES)	5/12, 5/26 (Reps 1&2, 3&4 respectively)
• Butte County (Murphy)	5/13
• Colusa County (Dennis)	5/14
• Yuba County (Quad-4)	5/4

Commercial varieties included Calmochi-101, Calhkari-201, Calmati-201, M-104, M-202, M-204, M-205, L-204, L-205, and S-102. Thirty preliminary lines were included in separate tests at each site. All advanced and preliminary experimental lines were entries from the RES breeding program.

Late Maturity Group. Eight advanced lines and six commercial varieties were evaluated in Advanced Tests at the following locations.

	Date Planted
• Butte County (RES)	5/12, 5/26 (Reps 1&2, 3&4 respectively)
• Glenn County (Wiley)	5/1
• Yuba County (Penning)	5/9

Commercial varieties included Calmati-201, A-201, M-202, M-204, M-401, and M-402. Nineteen preliminary lines and one commercial standard (Calhikari-201) were included in separate tests at each site. Advanced and preliminary non-commercial lines were entries from the RES breeding program.

Planting and Harvesting

Individual plots were water-seeded by hand at a planting rate of 144 lb/acre. Agronomic characteristics measured for each entry were seedling vigor, days to 50% heading, plant height, lodging at harvest, grain moisture at harvest and grain yield at 14% moisture. Seedling vigor was rated subjectively by visual observation on a scale of 1 (poor) to 5 (excellent) at three to four weeks after planting. Scores were based on plant health and stand at crop emergence (through the water). Days to 50% heading was measured as the number of days from planting to when 50% of the heads were free from the boot. Plant height was measured at harvest as the distance from the soil surface to the tip of the panicle. Plant lodging was rated visually on a scale of 1 (no lodging) to 99 (all plants completely lodged).

County tests were harvested with a SWECO 324 small plot combine and plots at the RES were harvested with a modified Allis-Chalmers combine. The harvest area for all plots was 150 ft^2 (0.0034acre). Grain moisture was assessed at harvest and yields adjusted to 14% moisture.

SUMMARY OF THE VERY EARLY RICE VARIETY TESTS

(<90 days to 50% heading at Biggs, CA)

Agronomic performance data for individual entries at each Very Early location are presented in Tables 4 through 7. A three-location combined yield summary is given in Table 8. The San Joaquin site was excluded from the combined yield summary due to severe yield losses experienced by several cold intolerant varieties. Entries are ranked by grain yield with the highest yielding entry appearing first. A yield summary of Very Early rice varieties by location and year (1995-1999) is found in Table 9.

Grain yields in the advanced tests averaged 10160 lbs/acre at the RES, 7950 at Yolo, 8980 at Sutter, and 4520 at San Joaquin. The highest yielding entry over the first three locations was the commercial variety S-102 at 10530 lbs/acre (Table 8). Entry 96Y196, an advanced waxy short grain, ranked second in yield at Yolo, third at Sutter, and second overall.

No entry produced yields significantly higher than S-102 at any of the trial locations. CM-101, 96Y196, a waxy short grain specialty cultivar, and M-103 yielded first, second and fourth, (respectively) in the cooler San Joaquin trial location.

Table 9 shows over-year and over-location yields for the very early commercial varieties compared with leading early varieties in the same tests. Common year-location entries are compared to give relative yield as a percentage of M-202, the very early standard. M-103 yielded 93%, 95Y214(M-104) 97%, Calmochi-101 96%, and S-102 100% of M-202 in the Very Early tests over the last five-year period.

SUMMARY OF THE EARLY RICE VARIETY TESTS

(90-97 days to 50% heading at Biggs, CA)

Agronomic performance data for individual entries at each Early location are presented in Tables 10 through 13. A three location combined yield summary is given in Table 14. Entries are ranked by grain yield with the highest yielding entry appearing first.

Yields in the advanced tests averaged 9920 lb/acre at the RES, 8510 lb/acre at Colusa, 6820 lb/acre at Yuba, and 5590 lb/acre at Butte. The highest yielding public variety, S-102, averaged 10460 lb/acre at the RES, 10260 lb/acre at Colusa, 9100 lb/acre at Yuba and was the second highest yielding entry, 9940 lb/acre, over the three locations (Table 14). Commercial varieties M-202, M-103, and CM-101 ranked third, fifth, and sixth in average over-location yield. Other leading advanced cultivars were 96Y203 and 95Y214 (first and fourth, respectively). Of the preliminary lines, medium-grains 98Y242 and 98Y249, and waxy short-grain 97Y197 were ranked first, second, and third, respectively.

Table 15 shows the over-year and over-location yields for the commercial varieties. Common year-location entries are compared to give relative yield as a percentage of M-202, the early standard. Cahikari-201 yielded 86%, M-204 101%, M-205 104%, and Calmati-201 75% of M-202 in the Early tests over the past five years.

SUMMARY OF THE INTERMEDIATE-LATE RICE VARIETY TESTS

(intermediate= 98-105 days and late= > 105 days to 50% heading at Biggs, CA)

Agronomic performance data for individual entries at each Intermediate-Late location are presented in Tables 16 through 18. A three-location combined yield summary is given in Table 19. Entries are ranked by grain yield, with the highest yielding entry appearing first.

Average yields in the advanced Intermediate-Late tests were 8720 lb/acre at the RES, 7300 lb/acre at Glenn, and 7330 lb/acre at Yuba. The medium-grain cultivar M-204 was the second highest yielding entry over all locations, ranking third at the RES, ninth at Glenn, and fourth at Yuba (Table 19). Premium quality M-402 ranked second in yield at Glenn, sixth at the RES, fifth at Yuba, and was ranked third overall. In the preliminary tests, medium-grain 98Y644 yielded highest overall (9370 lb/acre), with yields of 10930, 8840, and 8330 lb/acre at the RES, Glenn, and Yuba test sites respectively.

Table 20 compares Intermediate-Late maturing commercial cultivars in over-location and over-years tests. M-402 yielded 109%, of M-401, the standard for comparison, over the last five years.

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Table 1. Characteristics Of Public California Rice Varieties - 1999

Grain Type	Maturity	Year Seed Widely Available	Stem Rot Score[1] (0-10)	Seedling Vigor[2] (1-5)	Comments
Short Grain					
S-102	Very Early[3]	1998	5.9	4.3	Very high yield potential, two weeks earlier than S-201. Good resistance to blanking. Grain is 8% larger than S-201 and less chalky. Rough leaves and hulls, grain dries down rapidly during ripening. Susceptible to stem rot.
Medium Grain					
M-103	Very Early[3]	1990	5.5	3.9	Earliest medium grain, vigor less than M-202. Excellent resistance to blanking. Very good head and total milled rice yields. Moderate lodging and good yield potential. Alternative variety for M-202 in coldest rice areas and for late planting in warmer areas.
M-104	Very Early[3]	2002	5.6	4.4	Has potential as replacement for M-103in San Joaquin Valley and as an alternative to M-202 in other cool rice areas. Improved seedling vigor, lodging resistance, and yield compared to M-103. Milling yields similar to M-103. Heads 8 to 10 days earlier than M-202. Early planting in warm areas could limit yield and quality.
M-202	Early	1987	5.8	4.4	Very high yield potential. Moderate lodging potential. Long time favorite variety that threshes easily.
M-204	Early	1993	5.7	4.2	Very high yield potential. Seedling vigor slightly less than M-202. Height 3 inches shorter and heading 3 days later than M-202. Better lodging resistance and improved total and head rice yields than M-202. Resistance to blanking similar to M-202. Threshes easily. **Not recommended** for Escalon, Natomas or other cool areas.
Long Grain					
L-204	Early	1998	5.6	4.1	High yield potential. Two days earlier than L-203. Resistant to lodging. Seedling vigor fair, may be affected by deep water. Improved head rice and cooking characteristics, better than L-202 and L-203. Avoid early draining (requires 40-45 days after 50% heading to mature) and harvest at 18-19% moisture to maximize milling yield.
L-205	Early	2001	5.7	3.9	Newrex type, dry cooking long grain. High yield potential. Two days later than L-204. Resistant to lodging. More resistant to blanking than L-204. Seedling vigor fair. Seed size slightly smaller than L-204. Similar milling yield to L-204. Avoid early draining (requires 40-45 days after 50% heading to mature) and harvest at 16-18% grain moisture to maximize milling yield.
Premium Quality					
M-401	Late	1983	5.4	4.3	*Premium quality* medium grain rice with large kernels. Good yield potential but susceptible to blanking, lodging and damage from premature drainage. Use 20-25% less nitrogen than on other medium grain varieties. Best adapted to warmer areas. Milling yields lower than other medium grain varieties.
M-402	Late	2001	5.4	4.2	*Premium quality* medium grain. Kernel size is smaller than M-401, much higher head rice potential. About 5-7 days earlier than M-401 with better straw strength. Adapted to warmer areas.
Calhikari-201	Early	2001	6.0	4.4	*Premium quality* short grain developed for the Japanese premium short-grain market. Has very good seedling vigor. A semidwarf with much greater yield potential and resistance to lodging than Japanese varieties. Rough leaves and hulls. Cold delays maturity and increases blanking. Use low nitrogen to maximize market quality.
Specialty Rice					
Calmochi-101	Very Early[3,4]	1987	5.6	4.2	A sweet glutinous rice. Two weeks earlier than S-201. Excellent resistance blanking. Has rough leaves and hulls, no awns. Grain dries down rapidly during ripening.
A-201	Early[4]	1998	6.2	4.2	Aromatic (popcorn aroma) long grain, eight days earlier than A-301. Moderate yield potential similar to L-202 and A-301. Becomes leafy under excessive nitrogen. Poor milling yield, use slower cylinder speed and harvest at 18-20% grain moisture. Air dry without heat to retain aroma.
Calmati-201	Early[4]	2001	5.4	3.9	A basmati type aromatic long grain. Moderate yield potential. Five days later than L-204. Pubescent leaves and hull. Milling yield is considerably higher than A-201. Very susceptible to blanking and should not be grown in cool areas. Excessive nitrogen and late planting will delay maturity and increase blanking. Harvest at 17-18% grain moisture.

1 Average stem rot score over last four years: 0 = no disease and 10 = severe disease.

2 Subjective rating of 1-5 where 1 = poor and 5 = excellent seedling vigor.

3 Milling quality and yield may be reduced by early planting in warmer areas.

4 Specialty varieties should not be grown unless arrangements have first been made with a marketing agency.

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Table 2. California Rice Acerage by Variety (1996-1999)[1]

Variety	1996		1997		1998		1999	
	(acres)	(%)	(acres)	(%)	(acres)	(%)	(acres)	(%)
Short Grains								
S-102	-	-	7,960	1.50	7,070	1.40	9,800	1.70
S-201	4,920	1.00	7,690	1.40	3,680	0.80	-	-
Cal Pearl	2,680	0.50	-	-	-	-	-	-
Akitakomachi	-	-	5,270	1.00	15,680	3.10	25,350	4.40
Calhikari-201	-	-	-	-	-	-	160	0.03
Calmochi-101	5,130	1.00	12,500	2.40	19,110	3.80	28,230	4.90
Koshihikari	-	-	4,740	0.90	9,480	1.80	12,100	2.10
Surpass	-	-	-	-	-	-	1,300	0.23
Subtotal	**12,730**	**2.50**	**38,160**	**7.20**	**55,020**	**11.00**	**76,940**	**13.35**
Medium Grains								
M-103	15,790	3.10	16,860	3.20	28,425	5.70	12,100	2.10
M-201	47,150	9.20	33,410	6.30	14,860	3.00	14,980	2.60
M-202	323,950	63.20	315,410	59.70	284,170	57.00	335,330	58.20
M-204	59,800	11.70	67,190	12.70	55,490	11.10	55,890	9.70
M-401	38,000	7.40	42,630	8.10	30,780	6.20	54,740	9.50
M-402	-	-	-	-	-	-	500	0.09
Kokuhorose	-	-	-	-	-	-	11,520	2.00
NFD 181	-	-	-	-	-	-	5,190	0.90
Subtotal	**484,690**	**94.50**	**475,500**	**90.00**	**413,725**	**83.00**	**490,250**	**85.09**
Long Grains								
L-202	700	0.1	-	-	-	-	-	-
L-203	1,975	0.4	-	-	-	-	-	-
L-204	-	-	2,210	0.40	15,580	3.10	3,460	0.60
L-205	-	-	-	-	-	-	259	0.04
A-201	-	-	-	-	-	-	1,076	0.19
A-301	-	-	-	-	-	-	1,260	0.22
Calmati-201	-	-	-	-	-	-	131	0.02
Subtotal	**2,675**	**0.50**	**2,210**	**0.40**	**15,580**	**3.10**	**6,186**	**1.07**
Others[2]	12,615	2.5	12,610.0	2.40	14,495	2.9	2,804.0	0.49
Total	**512,710**	**100**	**528,480**	**100**	**498,820**	**100**	**576,180**	**100**

[1] Acreage estimates based on surveys conducted by Rice Experiment Station of rice millers and seed production.

[2] Other varieties reported include: Short grains mochi,Calhikari-201, Surpass, H-4, and 89-Y-235; Medium grains SP-211, SP-411, NFD-181, and Arborio type; Long grains L-202, L-203, A-201, A-301.

Table 3. 1999 County Weather Data - Daily Maximums and Minimums (°F). Collected by UC IPM - IMPACT and CIMIS

	Glenn (Orland)		San Joaquin (Escalon)		Butte (Durham)		Sutter (yuba City)		Yolo (zamora)		Colusa (colusa)	
	max	min	max	min	max	min	max	min	max	min	max	min
Apr 01	63	30	62	35	65	32	59	30	63	34	63	32
Apr 02	66	44	67	35	67	36	63	34	66	43	66	43
Apr 03	58	40	59	43	58	46	57	38	61	38	59	42
Apr 04	64	42	64	37	65	39	65	40	65	42	65	40
Apr 05	52	41	50	42	52	41	60	40	51	40	51	40
Apr 06	62	36	58	37	61	37	57	38	58	38	60	36
Apr 07	60	35	49	39	60	34	68	35	60	34	61	34
Apr 08	56	33	54	39	59	33	55	41	52	32	57	34
Apr 09	57	29	57	30	58	29	52	30	57	29	59	28
Apr 10	47	41	59	35	51	42	57	44	53	41	51	42
Apr 11	70	42	54	46	72	45	65	35	62	44	69	46
Apr 12	80	38	68	41	81	40	50	41	80	39	81	39
Apr 13	79	44	74	44	80	44	77	44	76	41	79	42
Apr 14	81	53	80	46	82	51	83	49	82	57	82	52
Apr 15	82	52	85	46	84	45	86	53	83	54	85	48
Apr 16	84	47	87	52	86	47	85	51	82	50	86	47
Apr 17	85	52	89	53	86	55	86	43	83	51	87	51
Apr 18	83	47	85	51	84	49	83	41	82	42	86	45
Apr 19	80	50	79	46	80	54	79	52	81	47	81	55
Apr 20	76	43	75	48	81	54	80	50	80	49	80	46
Apr 21	73	40	74	45	76	44	77	45	77	39	77	45
Apr 22	72	52	77	46	76	53	76	51	74	42	74	45
Apr 23	79	57	81	48	81	50	81	52	80	52	80	53
Apr 24	86	57	82	44	86	53	85	52	76	52	85	55
Apr 25	72	46	72	47	72	50	70	43	71	43	74	50
Apr 26	73	47	73	47	73	50	71	48	72	48	75	48
Apr 27	64	39	67	38	67	42	68	38	67	32	69	41
Apr 28	64	47	66	37	68	45	68	39	67	34	67	35
Apr 29	75	52	74	47	76	51	77	44	75	52	77	52
Apr 30	81	54	80	47	83	54	84	50	81	53	82	56
May 01	78	50	77	46	78	51	78	47	80	42	81	50
May 02	60	47	63	41	58	48	59	44	62	42	61	47
May 03	69	44	64	49	70	44	68	46	66	39	68	44
May 04	67	39	68	39	68	39	69	42	69	37	69	36
May 05	82	46	79	42	83	42	84	46	84	42	85	46
May 06	82	52	81	48	84	50	83	52	86	44	84	56
May 07	75	45	76	46	77	48	78	46	79	47	78	45
May 08	72	48	74	45	73	50	74	43	76	47	75	49
May 09	71	51	73	47	72	44	72	42	74	49	74	45
May 10	75	51	77	43	75	40	79	41	79	40	78	40
May 11	83	49	83	48	83	50	85	49	86	49	86	50
May 12	80	52	78	48	84	52	83	47	82	51	83	51
May 13	70	48	73	47	71	48	72	47	73	38	73	47
May 14	70	43	68	45	73	40	72	43	71	42	72	42
May 15	73	44	71	41	75	45	75	45	74	40	75	39
May 16	77	41	78	40	81	41	80	43	79	39	82	43
May 17	80	46	84	44	82	47	83	45	83	43	84	51
May 18	77	49	76	51	80	55	83	50	79	50	82	55
May 19	77	47	76	48	80	46	79	45	78	44	80	46
May 20	73	46	70	48	74	51	75	47	75	46	76	50
May 21	96	52	83	45	90	49	89	47	89	45	89	47
May 22	92	71	93	53	95	65	95	47	93	59	94	63
May 23	84	51	85	53	85	54	85	52	87	50	87	51
May 24	80	51	82	53	83	53	82	50	82	52	83	54
May 25	85	54	86	53	86	57	87	52	88	50	91	54
May 26	87	61	88	57	92	61	92	60	90	57	93	59
May 27	85	56	86	54	88	59	86	52	88	51	88	55
May 28	82	56	82	51	82	58	82	48	84	50	85	55
May 29	75	48	74	52	77	54	76	49	76	49	78	53
May 30	81	52	80	51	81	55	81	50	82	48	84	54
May 31	81	51	79	52	82	55	82	50	81	48	85	54
Jun 01	70	52	76	51	73	53	74	48	69	47	72	51
Jun 02	62	47	69	52	65	46	68	47	66	49	69	49
Jun 03	61	44	68	49	61	53	64	45	64	48	65	44
Jun 04	73	45	74	48	76	42	77	46	78	46	78	46
Jun 05	79	52	83	48	80	53	82	49	82	50	83	54
Jun 06	77	50	81	50	79	54	81	53	75	48	81	53
Jun 07	74	43	74	40	76	48	78	45	74	42	78	47
Jun 08	79	43	78	44	79	46	80	45	76	42	78	45
Jun 09	79	46	81	44	80	46	84	48	81	45	83	47
Jun 10	88	48	84	50	88	49	86	49	86	63	89	49
Jun 11	84	54	85	50	85	51	88	54	87	49	89	57
Jun 12	83	54	87	53	84	55	87	51	87	48	89	57
Jun 13	86	53	85	51	87	55	90	51	86	47	90	52
Jun 14	87	59	87	55	88	60	91	57	88	55	91	61
Jun 15	79	57	82	54	81	58	83	52	86	57	84	57
Jun 16	84	55	87	53	86	54	89	49	87	50	89	55
Jun 17	87	57	92	52	89	56	92	56	85	54	92	59
Jun 18	84	59	90	54	84	61	90	56	90	55	88	60
Jun 19	86	56	90	56	88	58	90	54	86	52	90	59
Jun 20	88	56	92	52	91	57	94	56	89	51	93	55
Jun 21	90	63	88	61	86	64	91	60	88	57	90	64
Jun 22	98	74	96	62	99	66	98	62	98	63	99	63
Jun 23	93	71	95	62	97	62	96	65	92	59	98	64
Jun 24	88	56	87	60	85	60	88	54	92	51	88	54
Jun 25	85	55	86	55	86	57	88	55	85	50	88	53
Jun 26	87	53	90	51	89	54	93	55	89	53	92	54
Jun 27	95	60	93	52	96	58	95	47	92	57	96	57
Jun 28	98	61	97	55	100	58	98	61	96	60	100	57
Jun 29	98	62	101	58	99	61	101	64	99	59	102	61
Jun 30	103	67	100	62	105	65	104	68	100	64	105	66
Jul 01	98	65	98	65	101	63	103	67	100	64	102	64
Jul 02	87	60	89	59	87	61	90	60	89	58	91	62
Jul 03	80	55	79	53	81	56	84	54	83	52	85	57
Jul 04	85	50	83	47	87	50	84	50	83	50	85	49
Jul 05	89	55	93	51	89	49	94	50	91	49	95	50
Jul 06	89	55	89	50	89	54	94	56	92	50	93	56
Jul 07	97	58	90	52	94	62	92	51	88	50	93	54
Jul 08	92	64	97	53	94	54	99	55	94	57	99	66
Jul 09	93	58	94	54	94	59	96	57	92	51	98	57
Jul 10	93	57	96	56	94	60	97	58	96	56	99	57
Jul 11	97	66	101	62	97	64	101	64	101	65	104	62
Jul 12	106	70	105	73	102	67	107	72	105	71	109	68
Jul 13	95	68	99	68	95	71	99	71	98	66	97	67
Jul 14	88	63	94	61	88	64	92	67	90	61	93	68
Jul 15	83	60	89	57	83	60	87	56	83	54	88	58
Jul 16	81	54	86	54	82	55	92	50	84	51	84	55
Jul 17	80	51	86	53	82	53	86	56	83	49	85	55
Jul 18	86	52	88	53	87	53	89	50	86	47	89	49
Jul 19	81	50	81	54	81	53	84	51	77	49	84	55
Jul 20	77	50	79	54	77	53	80	52	78	47	81	54
Jul 21	81	50	82	54	82	51	86	50	81	49	85	54
Jul 22	86	53	89	56	91	51	91	52	88	49	92	61
Jul 23	84	59	81	56	83	57	85	53	82	54	87	58
Jul 24	80	49	81	53	81	52	83	50	82	49	85	52
Jul 25	84	53	88	54	85	54	90	53	88	52	90	53
Jul 26	87	55	89	55	88	57	92	53	88	49	91	54
Jul 27	86	50	85	55	86	54	88	51	85	49	89	53
Jul 28	82	52	82	54	84	55	85	52	80	51	86	56
Jul 29	84	48	85	54	87	49	89	51	85	46	88	52
Jul 30	86	54	88	55	86	55	91	52	88	50	91	54
Jul 31	84	54	87	57	86	56	87	52	88	52	88	57

Table 3. (Continued)

	Glenn (Orland)		San Joaquin (Escalon)		Butte (Durham)		Sutter (yuba City)		Yolo (zamora)		Colusa (colusa)	
	max	min	max	min	max	min	max	min	max	min	max	min
Aug 01	82	52	87	54	84	53	86	55	86	51	87	55
Aug 02	86	56	90	58	89	59	92	56	89	53	92	61
Aug 03	88	59	90	58	90	60	94	58	90	55	94	61
Aug 04	77	65	89	59	90	66	92	59	91	56	93	61
Aug 05	76	54	78	56	79	56	79	54	80	51	79	54
Aug 06	73	58	78	58	76	59	78	55	74	56	79	56
Aug 07	78	54	79	55	79	57	82	53	80	51	82	56
Aug 08	81	56	80	57	81	57	86	54	82	52	85	55
Aug 09	81	55	81	57	83	58	85	59	84	52	87	58
Aug 10	72	59	78	58	75	60	80	60	76	55	74	60
Aug 11	78	55	79	59	79	57	81	59	80	52	82	56
Aug 12	83	56	85	57	83	57	87	60	85	52	87	58
Aug 13	79	52	83	55	81	56	85	58	83	49	85	56
Aug 14	82	55	82	55	82	55	85	54	84	52	86	58
Aug 15	87	53	87	52	86	54	90	51	89	52	90	51
Aug 16	89	56	94	54	90	55	94	55	92	51	95	52
Aug 17	90	58	92	59	92	56	96	58	93	53	95	56
Aug 18	83	53	82	56	85	57	86	59	84	49	87	57
Aug 19	92	56	90	52	90	50	92	51	91	51	92	51
Aug 20	89	55	92	57	90	54	94	60	91	52	95	55
Aug 21	103	57	92	56	97	56	97	55	94	56	99	55
Aug 22	95	61	98	56	98	61	100	60	99	58	102	59
Aug 23	94	71	97	61	92	70	97	67	93	64	97	69
Aug 24	97	62	97	61	96	63	103	64	98	58	102	59
Aug 25	100	61	99	58	99	61	106	68	100	60	103	57
Aug 26	100	64	83	61	88	64	94	71	94	65	101	62
Aug 27	96	68	96	65	96	68	100	66	95	66	99	65
Aug 28	94	68	95	61	93	65	99	62	96	58	98	62
Aug 29	90	63	92	58	90	65	93	62	92	59	94	65
Aug 30	80	57	80	58	81	61	81	57	81	63	82	61
Aug 31	81	56	82	49	83	53	83	56	81	57	83	52
Sep 01	79	49	83	47	79	45	82	48	80	46	84	46
Sep 02	81	48	84	53	80	49	85	49	84	45	86	47
Sep 03	88	52	83	50	93	51	86	51	85	64	86	51
Sep 04	93	52	87	51	89	51	91	51	90	51	93	49
Sep 05	89	53	94	53	91	53	95	51	94	50	95	51
Sep 06	94	56	96	54	93	53	95	51	85	53	95	54
Sep 07	92	55	95	54	91	53	96	56	94	52	97	53
Sep 08	94	57	92	56	93	55	96	54	93	50	96	54
Sep 09	93	64	88	59	88	63	88	60	92	60	90	61
Sep 10	85	55	85	56	85	56	88	53	87	52	90	55
Sep 11	87	56	86	55	85	56	85	57	90	52	88	56
Sep 12	86	58	89	56	87	56	89	55	89	53	92	55
Sep 13	89	56	87	55	91	59	91	53	89	49	93	57
Sep 14	94	57	88	56	88	57	89	55	91	52	94	54
Sep 15	86	54	89	55	87	54	90	53	90	50	91	53
Sep 16	88	57	87	53	87	58	90	53	89	50	90	54
Sep 17	89	56	87	55	90	52	92	52	89	49	94	51
Sep 18	86	58	84	55	84	54	83	52	83	49	87	51
Sep 19	83	58	80	55	81	60	83	53	83	56	85	59
Sep 20	81	53	83	55	81	54	83	52	85	53	86	54
Sep 21	95	61	89	53	95	57	93	53	92	51	93	53
Sep 22	93	56	90	64	90	56	94	57	90	60	96	56
Sep 23	89	60	87	61	88	61	90	57	89	58	92	57
Sep 24	90	58	89	57	87	62	90	58	88	55	88	60
Sep 25	93	64	92	56	96	57	92	55	93	56	96	55
Sep 26	90	71	91	56	90	68	89	57	92	60	93	62
Sep 27	85	68	87	51	87	61	86	58	87	69	87	64
Sep 28	86	63	92	48	87	57	89	44	89	60	89	54
Sep 29	98	59	93	53	92	53	95	53	92	49	94	47
Sep 30	91	52	95	53	92	54	95	54	93	55	95	49
Oct 01	93	55	89	53	93	53	92	53	89	52	91	50
Oct 02	85	52	82	49	85	53	84	57	81	48	85	50
Oct 03	80	51	81	53	81	53	82	52	82	45	84	49
Oct 04	76	46	77	53	76	51	76	49	74	44	78	53
Oct 05	69	48	75	49	71	52	72	48	73	60	73	43
Oct 06	88	58	75	55	78	53	76	52	75	56	76	52
Oct 07	85	56	80	48	85	51	85	52	87	56	87	55
Oct 08	86	51	90	49	85	49	86	48	90	45	89	47
Oct 09	95	52	90	49	91	50	88	52	89	52	90	48
Oct 10	87	51	95	51	90	51	90	50	89	51	91	48
Oct 11	86	52	92	50	88	53	89	52	88	51	90	48
Oct 12	91	53	89	51	92	51	90	49	80	46	93	45
Oct 13	92	48	89	47	91	48	91	49	90	49	92	43
Oct 14	90	55	89	52	91	54	87	52	89	52	91	54
Oct 15	79	65	82	50	82	59	81	53	82	61	82	63
Oct 16	76	62	82	49	79	53	79	50	80	63	79	56
Oct 17	80	48	82	41	82	46	79	48	78	44	80	45
Oct 18	80	41	78	41	80	38	81	41	82	39	81	37
Oct 19	81	41	80	41	85	46	80	40	80	42	80	40
Oct 20	86	44	85	40	85	41	84	43	83	44	86	41
Oct 21	86	43	88	41	85	42	84	42	85	41	86	40
Oct 22	86	42	84	41	84	43	82	43	83	43	84	40
Oct 23	77	45	75	45	80	46	79	45	79	41	81	43
Oct 24	77	43	77	45	80	42	77	40	78	40	78	38
Oct 25	82	45	78	40	78	41	78	40	79	38	80	39
Oct 26	72	44	78	41	77	44	76	41	78	41	79	42
Oct 27	63	47	79	50	64	53	66	45	70	47	66	49
Oct 28	68	49	69	49	70	50	69	50	69	52	73	48
Oct 29	74	46	70	43	75	46	71	45	74	46	75	44
Oct 30	76	41	79	42	76	45	76	40	77	39	76	40
Oct 31	78	46	77	41	79	45	78	44	79	41	81	42

Table 4. 1999 Very Early Rice Variety Test - Butte County (Biggs-RES)

Advanced Lines and Varieties

Variety	Grain Type	Grain Yield at 14% Moisture lbs/acre	Grain Moisture at Harvest (%)	Seedling Vigor (1-5)	Days to 50% Heading	Lodging (1-99)	Plant Height (cm)
97Y257	M	11320 (1)	22.8 (4)	5.0 (3)	89 (11)	7 (7)	90 (8)
96Y457	L	11210 (2)	18.8 (12)	4.8 (14)	89 (10)	8 (8)	91 (9)
S-102	S	11140 (3)	16.5 (18)	4.9 (6)	86 (3)	25 (11)	95 (17)
96Y196	W	10800 (4)	20.9 (8)	4.5 (18)	84 (2)	39 (15)	91 (10)
97Y476	L	10700 (5)	18.0 (15)	4.7 (15)	89 (8)	2 (3)	84 (2)
L-205	L	10610 (6)	17.9 (16)	4.9 (10)	90 (12)	4 (6)	87 (6)
95Y214	M	10550 (7)	20.3 (9)	5.0 (3)	83 (1)	38 (14)	92 (11)
M-202	M	10480 (8)	25.7 (3)	4.9 (6)	93 (15)	14 (9)	99 (18)
M-103	M	10330 (9)	21.1 (7)	4.7 (15)	88 (7)	27 (12)	93 (14)
L-204	L	10310 (10)	18.5 (13)	4.9 (10)	91 (13)	2 (2)	84 (3)
CM-101	WX	10200 (11)	17.8 (17)	4.9 (8)	86 (3)	39 (15)	92 (12)
94Y615	M	10130 (12)	29.0 (1)	4.9 (8)	94 (16)	2 (4)	90 (7)
M-204	M	10100 (13)	28.3 (2)	4.9 (10)	95 (18)	3 (5)	92 (12)
98Y174	MPQ	9820 (14)	22.5 (5)	5.0 (3)	87 (6)	40 (17)	94 (16)
97Y143	SPQ	9790 (15)	19.9 (10)	4.8 (13)	86 (5)	30 (13)	82 (1)
CH-201	SPQ	9460 (16)	18.5 (14)	5.0 (1)	91 (14)	19 (10)	86 (4)
98-468	SPQ	8760 (17)	22.4 (6)	5.0 (1)	89 (9)	76 (18)	93 (14)
CA-201	BA	7090 (18)	19.2 (11)	4.7 (17)	94 (17)	1 (1)	87 (5)
MEAN		10160	21	4.9	89	21	90
CV		8.1	9.2	2	2.2	82.8	3.9
LSD (.05)		1160	2.7	0.1	3	24	5

Preliminary Lines and Varieties

97Y187	S	11590 (1)	20.4 (5)	4.9 (10)	88 (14)	9 (16)	93 (21)
98Y189	S	11240 (2)	18.8 (10)	4.9 (7)	88 (14)	11 (18)	88 (13)
97Y182	S	11070 (3)	20.2 (7)	4.8 (17)	88 (14)	11 (19)	90 (15)
98Y372	M	11050 (4)	24.3 (1)	5.0 (1)	91 (23)	3 (8)	85 (6)
9733046	L	10940 (5)	17.7 (18)	5.0 (1)	89 (18)	4 (9)	88 (13)
9731978	LR	10840 (6)	16.4 (23)	4.8 (17)	85 (3)	2 (4)	76 (1)
98Y199	W	10820 (7)	22.1 (3)	4.8 (17)	86 (8)	9 (16)	88 (11)
98Y214	M	10700 (8)	19.7 (8)	4.9 (10)	86 (7)	8 (13)	91 (18)
97Y255	M	10620 (9)	22.5 (2)	5.0 (3)	90 (21)	8 (13)	92 (20)
98Y212	M	10530 (10)	18.4 (13)	4.8 (14)	86 (10)	18 (22)	84 (4)
98Y265	M	10530 (11)	18.6 (11)	4.8 (14)	87 (11)	11 (19)	87 (9)
98Y452	LR	10510 (12)	15.7 (24)	4.9 (10)	84 (2)	1 (1)	81 (2)
98Y400	M	10490 (13)	17.7 (20)	4.9 (10)	86 (8)	3 (7)	84 (5)
97Y549	L	10490 (14)	17.9 (17)	4.7 (22)	87 (11)	2 (4)	83 (3)
97Y469	L	10370 (15)	17.4 (22)	5.0 (3)	88 (17)	4 (11)	90 (16)
97Y517	LR	10370 (16)	17.7 (18)	4.9 (9)	89 (20)	2 (6)	93 (22)
98Y240	M	10290 (17)	18.4 (14)	4.9 (5)	87 (11)	4 (9)	94 (23)
98Y208	M	10270 (18)	18.6 (11)	4.9 (5)	85 (5)	8 (13)	88 (11)
97Y192	W	10260 (19)	18.1 (15)	4.8 (21)	85 (3)	48 (23)	85 (7)
98Y213	M	10070 (20)	17.6 (21)	4.8 (14)	77 (1)	7 (12)	88 (10)
98-171	MPQ	9910 (21)	20.6 (4)	4.9 (7)	85 (6)	14 (21)	91 (17)
98Y500	L	9440 (22)	19.0 (9)	4.7 (24)	91 (24)	1 (3)	92 (19)
98Y454	LR	9390 (23)	18.0 (16)	4.8 (17)	90 (22)	1 (1)	85 (8)
AKITA	SPQ	6390 (24)	20.2 (6)	4.7 (22)	89 (19)	99 (24)	98 (24)
MEAN		10340	19	4.8	87	12	88
CV		4.4	4.6	1.6	1.7	30.6	2.3
LSD (.05)		940	1.8	0.2	3	7	4

Planting dates: May 12, May 26 (reps 1&2, 3&4 respectively).
S,SPQ,W = short; M,MPQ = medium; L,LR,BA = long; WX = waxy.
Subjective rating of 1-5 where 1 = poor and 5 = excellent seedling emergence.
Subjective rating of 1-99 where 1 = none and 99 = completely lodged.
Numbers in parentheses indicate relative rank in column.

Table 5. 1999 Very Early Rice Variety Test - Yolo County (Geer Ranch)

Advanced Lines and Varieties

Variety	Grain Type	Grain Yield at 14% Moisture lbs/acre	Grain Moisture at Harvest (%)	Seedling Vigor (1-5)	Days to 50% Heading	Lodging (1-99)	Plant Height (cm)
S-102	S	10290 (1)	14.5 (18)	4.4 (7)	91 (1)	6 (14)	95 (18)
96Y196	W	10060 (2)	16.1 (12)	4.4 (7)	92 (3)	4 (11)	86 (6)
M-103	M	9960 (3)	15.6 (14)	4.4 (7)	92 (2)	23 (18)	90 (10)
CM-101	WX	9960 (4)	14.8 (17)	4.5 (3)	93 (5)	7 (15)	91 (14)
L-204	L	9250 (5)	16.2 (11)	4.8 (1)	96 (8)	1 (6)	85 (5)
95Y214	M	9020 (6)	16.7 (10)	4.6 (2)	94 (6)	4 (11)	92 (16)
96Y457	L	9000 (7)	15.2 (16)	4.4 (7)	99 (11)	1 (6)	90 (11)
98Y174	MPQ	8370 (8)	18.3 (8)	4.3 (14)	96 (9)	4 (10)	90 (12)
97Y143	SPQ	7910 (9)	17.1 (9)	4.4 (12)	93 (4)	11 (17)	87 (8)
97Y257	M	7890 (10)	19.3 (7)	4.2 (18)	101 (12)	2 (8)	88 (9)
98-468	SPQ	7850 (11)	20.4 (5)	4.5 (3)	101 (13)	9 (16)	91 (14)
L-205	L	7750 (12)	15.5 (15)	4.5 (3)	98 (10)	1 (1)	85 (3)
97Y476	L	7750 (13)	15.7 (13)	4.4 (7)	94 (7)	1 (1)	81 (1)
M-202	M	7420 (14)	20.2 (6)	4.4 (13)	103 (15)	1 (1)	94 (17)
M-204	M	6730 (15)	20.5 (4)	4.5 (3)	102 (14)	1 (1)	86 (6)
94Y615	M	5720 (16)	23.8 (1)	4.3 (14)	110 (18)	5 (13)	85 (3)
CH-201	SPQ	5710 (17)	21.3 (2)	4.3 (16)	104 (16)	2 (8)	90 (12)
CA-201	BA	2410 (18)	21.2 (3)	4.3 (16)	109 (17)	1 (1)	82 (2)
MEAN		7950	17.9	4.4	98	5	88
CV		6.1	5.4	3.8	2	146	5.6
LSD (.05)		680	1.4	0.2	3	10	7

Preliminary Lines and Varieties

97Y187	S	11160 (1)	17.0 (10)	4.5 (4)	89 (1)	1 (1)	91 (18)
97Y182	S	10540 (2)	16.3 (14)	4.0 (23)	94 (11)	3 (17)	92 (19)
98Y199	W	10040 (3)	19.0 (2)	4.4 (9)	94 (11)	1 (1)	90 (17)
97Y192	W	9740 (4)	15.2 (21)	4.1 (21)	91 (4)	13 (22)	86 (7)
97Y469	L	9530 (5)	15.8 (20)	4.5 (4)	96 (17)	1 (1)	96 (22)
97Y255	M	9340 (6)	16.4 (11)	4.2 (17)	97 (19)	5 (21)	98 (23)
98Y213	M	9330 (7)	17.3 (6)	4.8 (1)	91 (2)	3 (17)	89 (14)
98Y240	M	9300 (8)	15.8 (19)	4.5 (4)	93 (6)	1 (1)	93 (20)
98Y265	M	8920 (9)	17.0 (9)	4.8 (1)	93 (8)	2 (16)	89 (13)
98Y208	M	8900 (10)	15.8 (18)	4.8 (1)	91 (2)	1 (1)	90 (15)
98Y214	M	8850 (11)	16.3 (13)	4.5 (4)	92 (5)	1 (1)	87 (8)
98Y189	S	8660 (12)	17.0 (8)	4.4 (9)	95 (16)	2 (15)	94 (21)
9733046	L	8540 (13)	16.2 (15)	4.2 (17)	96 (17)	3 (17)	88 (10)
98Y372	M	8510 (14)	17.9 (4)	4.5 (4)	102 (23)	1 (1)	90 (15)
9731978	LR	8310 (15)	14.8 (23)	4.4 (9)	93 (8)	1 (1)	73 (1)
98Y212	M	8130 (16)	16.1 (16)	4.4 (9)	94 (11)	1 (1)	84 (5)
98Y452	LR	7720 (17)	14.3 (24)	4.2 (17)	93 (6)	1 (1)	77 (3)
98-171	MPQ	7660 (18)	16.3 (12)	4.3 (16)	93 (8)	4 (20)	87 (9)
97Y549	L	7380 (19)	15.0 (22)	4.2 (17)	94 (14)	1 (1)	74 (2)
97Y517	LR	6780 (20)	16.0 (17)	4.4 (9)	104 (24)	1 (1)	84 (6)
98Y400	M	6750 (21)	18.1 (3)	4.4 (9)	97 (19)	1 (1)	88 (12)
98Y454	LR	5120 (22)	17.2 (7)	4.4 (9)	98 (21)	41 (23)	88 (10)
AKITA	SPQ	4870 (23)	19.8 (1)	4.1 (21)	94 (14)	93 (24)	104 (24)
98Y500	L	4780 (24)	17.7 (5)	2.8 (24)	100 (22)	1 (1)	80 (4)
MEAN		8290	16.6	4.3	94	8	88
CV		6	5.5	4.8	1.7	153	4.3
LSD (.05)		1020	1.9	0.4	3	24	8

Planting date: May 4 Harvest date: September 28.
S,SPQ,W = short; M,MPQ = medium; L,LR,BA = long; WX = waxy.
Subjective rating of 1-5 where 1 = poor and 5 = excellent seedling emergence.
Subjective rating of 1-99 where 1 = none and 99 = completely lodged.
Numbers in parentheses indicate relative rank in column.

Table 6. 1999 Very Early Rice Variety Test - Sutter County (Lauppe Ranch)

Advanced Lines and Varieties

Variety	Grain Type	Grain Yield at 14% Moisture lbs/acre	Grain Moisture at Harvest (%)	Seedling Vigor (1-5)	Days to 50% Heading	Lodging (1-99)	Plant Height (cm)
S-102	S	10150 (1)	16.9 (14)	2.5 (16)	89 (2)	2 (9)	84 (13)
M-202	M	9990 (2)	20.0 (5)	3.8 (5)	95 (10)	2 (9)	86 (18)
96Y196	W	9810 (3)	19.7 (6)	3.0 (11)	88 (1)	3 (13)	78 (3)
CM-101	WX	9670 (4)	20.1 (4)	2.5 (16)	91 (6)	4 (15)	84 (10)
M-103	M	9670 (5)	18.5 (11)	3.5 (6)	90 (4)	4 (15)	86 (17)
97Y257	M	9440 (6)	19.4 (7)	4.0 (2)	97 (14)	1 (1)	83 (7)
L-204	L	9410 (7)	15.9 (17)	3.5 (6)	94 (9)	1 (1)	76 (1)
95Y214	M	9260 (8)	20.1 (3)	4.0 (2)	89 (2)	4 (15)	85 (15)
L-205	L	9170 (9)	15.5 (18)	3.3 (9)	97 (14)	1 (1)	81 (5)
96Y457	L	9150 (10)	17.4 (13)	3.0 (11)	96 (12)	1 (1)	84 (13)
98-468	SPQ	9140 (11)	18.9 (9)	3.3 (9)	92 (7)	13 (18)	85 (16)
98Y174	MPQ	9070 (12)	19.0 (8)	4.0 (2)	93 (8)	3 (13)	84 (10)
CH-201	SPQ	8920 (13)	18.0 (12)	3.0 (11)	97 (13)	2 (9)	83 (9)
97Y143	SPQ	8780 (14)	16.5 (15)	2.8 (14)	90 (5)	1 (1)	80 (4)
94Y615	M	8570 (15)	22.1 (1)	3.5 (6)	100 (16)	1 (1)	82 (6)
M-204	M	8560 (16)	21.1 (2)	4.5 (1)	101 (17)	2 (9)	84 (12)
97Y476	L	8460 (17)	16.0 (16)	2.8 (14)	95 (11)	1 (1)	77 (2)
CA-201	BA	4420 (18)	18.7 (10)	2.5 (16)	102 (18)	1 (1)	83 (7)
MEAN		8980	18.5	3.3	94	3	82
CV		4.3	5.6	15.7	1.4	124.1	2.8
LSD (.05)		550	1.5	0.7	2	5	3

Preliminary Lines and Varieties

97Y182	S	11090 (1)	20.1 (6)	3.5 (9)	93 (9)	3 (19)	91 (20)
97Y255	M	10640 (2)	20.0 (7)	4.0 (3)	100 (22)	3 (19)	93 (23)
97Y187	S	10570 (3)	23.3 (2)	3.5 (9)	90 (4)	1 (1)	91 (20)
98Y189	S	10380 (4)	19.7 (11)	3.5 (9)	94 (11)	1 (1)	88 (18)
97Y469	L	10180 (5)	15.3 (21)	4.5 (1)	98 (17)	1 (1)	92 (22)
97Y192	W	10100 (6)	21.3 (3)	3.0 (15)	90 (2)	15 (23)	86 (16)
98Y212	M	10020 (7)	19.6 (14)	4.0 (3)	94 (13)	1 (1)	81 (7)
98Y214	M	10000 (8)	19.8 (8)	3.5 (9)	93 (8)	1 (1)	85 (13)
98Y213	M	9950 (9)	17.5 (18)	4.5 (1)	86 (1)	6 (22)	85 (13)
98Y240	M	9850 (10)	19.6 (13)	4.0 (3)	96 (15)	1 (1)	90 (19)
9733046	L	9830 (11)	15.1 (22)	3.0 (15)	98 (17)	1 (1)	88 (17)
98Y265	M	9470 (12)	20.3 (4)	4.0 (3)	94 (11)	1 (1)	80 (5)
98Y208	M	9380 (13)	19.7 (12)	3.5 (9)	91 (7)	1 (1)	85 (11)
98Y400	M	9190 (14)	19.8 (10)	4.0 (3)	98 (19)	1 (1)	85 (11)
98Y199	W	9150 (15)	27.7 (1)	3.0 (15)	94 (13)	1 (1)	84 (8)
98Y372	M	8800 (16)	19.8 (8)	4.0 (3)	101 (23)	1 (1)	84 (10)
9731978	LR	8670 (17)	14.7 (23)	3.0 (15)	93 (9)	1 (1)	77 (4)
97Y517	LR	8620 (18)	17.7 (17)	3.0 (15)	102 (24)	1 (1)	85 (13)
98-171	MPQ	8570 (19)	18.4 (15)	3.5 (9)	90 (2)	3 (19)	80 (5)
97Y549	L	8520 (20)	15.6 (20)	2.5 (23)	98 (19)	1 (1)	76 (3)
98Y500	L	8090 (21)	16.5 (19)	3.0 (15)	97 (16)	1 (1)	84 (8)
98Y452	LR	7860 (22)	14.5 (24)	3.0 (15)	90 (4)	1 (1)	75 (1)
AKITA	SPQ	7560 (23)	20.3 (5)	2.0 (24)	90 (4)	92 (24)	99 (24)
98Y454	LR	5720 (24)	17.8 (16)	3.0 (15)	98 (19)	1 (1)	76 (2)
MEAN		9260	18.9	3.4	94	6	85
CV		4.1	4.9	12.8	1.2	48.7	3.1
LSD (.05)		790	1.9	0.9	2	6	5

Planting date: May 14 Harvest date: October 12.
S,SPQ,W = short; M,MPQ = medium; L,LR,BA = long; WX = waxy.
Subjective rating of 1-5 where 1 = poor and 5 = excellent seedling emergence.
Subjective rating of 1-99 where 1 = none and 99 = completely lodged.
Numbers in parentheses indicate relative rank in column.

Table 7. 1999 Very Early Rice Variety Test - San Joaquin County (Brumley Ranch)

Advanced Lines and Varieties

Variety	Grain Type	Grain Yield at 14% Moisture lbs/acre	Grain Moisture at Harvest (%)	Seedling Vigor (1-5)	Days to 50% Heading	Lodging (1-99)	Plant Height (cm)
M-202	M	-	-	4.5 (3)	117 (15)	6 (18)	83 (17)
CA-201	BA	-	-	3.5 (15)	123 (18)	1 (1)	67 (1)
CM-101	WX	8860 (1)	9.5 (16)	4.8 (2)	105 (5)	5 (17)	80 (12)
96Y196	W	8370 (2)	12.1 (14)	5.0 (1)	102 (3)	1 (1)	77 (6)
S-102	S	8260 (3)	9.7 (15)	3.5 (15)	101 (1)	2 (16)	82 (14)
M-103	M	7980 (4)	14.9 (13)	3.8 (12)	103 (4)	1 (1)	81 (13)
95Y214	M	5620 (5)	15.6 (11)	4.3 (7)	107 (7)	1 (1)	82 (16)
M-204	M	4420 (6)	25.4 (3)	3.8 (12)	116 (14)	1 (1)	77 (8)
97Y257	M	4300 (7)	21.8 (7)	4.0 (9)	111 (12)	1 (1)	79 (10)
98Y174	MPQ	4280 (8)	19.6 (9)	4.0 (9)	105 (6)	1 (1)	82 (15)
98-468	SPQ	3390 (9)	22.0 (6)	4.5 (3)	108 (8)	1 (1)	84 (18)
94Y615	M	3330 (10)	25.6 (2)	4.0 (9)	121 (16)	1 (1)	73 (3)
96Y457	L	2610 (11)	15.3 (12)	3.8 (12)	112 (13)	1 (1)	78 (9)
L-205	L	2490 (12)	20.6 (8)	4.5 (3)	109 (10)	1 (1)	80 (11)
L-204	L	2460 (13)	18.4 (10)	4.3 (7)	111 (11)	1 (1)	77 (7)
97Y143	SPQ	2000 (14)	22.6 (5)	3.0 (17)	102 (2)	1 (1)	74 (4)
97Y476	L	1960 (15)	23.2 (4)	3.0 (17)	109 (9)	1 (1)	75 (5)
CH-201	SPQ	1910 (16)	26.2 (1)	4.5 (3)	121 (17)	1 (1)	73 (2)
MEAN		4520	18.9	4	110	2	78
CV		13.6	9.5	12	1.1	188	5.5
LSD (.05)		880	2.5	0.7	2		6

Preliminary Lines and Varieties

97Y549	L	-	-	3.0 (17)	112 (20)	1 (2)	72 (5)
98Y454	LR	-	-	3.0 (17)	108 (16)	1 (2)	69 (4)
9733046	L	-	-	4.0 (9)	110 (18)	1 (2)	78 (9)
97Y182	S	8690 (1)	11.3 (20)	3.0 (17)	104 (6)	5 (20)	82 (17)
97Y192	W	8430 (2)	10.1 (21)	4.0 (9)	101 (2)	6 (22)	79 (11)
97Y187	S	8270 (3)	11.9 (19)	4.5 (4)	99 (1)	65 (24)	87 (23)
98Y213	M	7400 (4)	11.9 (18)	4.5 (4)	102 (3)	1 (2)	79 (13)
98Y199	W	7320 (5)	12.7 (17)	3.5 (14)	107 (14)	11 (23)	80 (15)
98Y240	M	5480 (6)	15.5 (10)	5.0 (1)	106 (12)	1 (2)	86 (21)
98Y208	M	5200 (7)	15.0 (11)	4.5 (4)	103 (5)	1 (2)	84 (19)
98Y372	M	5110 (8)	18.3 (4)	3.5 (14)	115 (22)	1 (2)	72 (5)
97Y469	L	5100 (9)	13.6 (16)	4.0 (9)	109 (17)	1 (2)	87 (22)
97Y255	M	5090 (10)	14.8 (13)	4.0 (9)	111 (19)	1 (2)	85 (20)
98Y265	M	5080 (11)	15.7 (9)	4.5 (4)	107 (14)	1 (2)	79 (13)
98Y214	M	5080 (12)	16.5 (8)	3.5 (14)	106 (12)	1 (2)	79 (11)
98Y189	S	4650 (13)	16.9 (6)	4.5 (4)	106 (11)	1 (2)	78 (10)
98Y452	LR	4040 (14)	14.6 (14)	3.0 (17)	102 (3)	1 (2)	68 (3)
98-171	MPQ	3970 (15)	17.7 (5)	4.0 (9)	104 (10)	3 (19)	76 (8)
AKITA	SPQ	3590 (16)	14.2 (15)	3.0 (17)	104 (6)	5 (20)	94 (24)
97Y517	LR	3450 (17)	21.4 (2)	3.0 (17)	120 (24)	0 (1)	68 (2)
98Y400	M	3180 (18)	22.8 (1)	5.0 (1)	117 (23)	1 (2)	75 (7)
9731978	LR	3180 (19)	16.8 (7)	3.0 (17)	104 (6)	1 (2)	66 (1)
98Y500	L	3080 (20)	14.8 (12)	1.5 (24)	112 (21)	1 (2)	80 (15)
98Y212	M	2810 (21)	20.7 (3)	5.0 (1)	104 (6)	1 (2)	84 (18)
MEAN		5150	15.6	3.8	107	5	78
CV		15.6	7.9	12.1	1.8	110	3
LSD (.05)		1670	2.6	0.9	4	11	5

Planting date: May 10 Harvest date: October 13.
S,SPQ,W = short; M,MPQ = medium; L,LR,BA = long; WX = waxy.
Subjective rating of 1-5 where 1 = poor and 5 = excellent seedling emergence.
Subjective rating of 1-99 where 1 = none and 99 = completely lodged.
Numbers in parentheses indicate relative rank in column.

Table 8. 1999 Very Early Rice Lines and Varieties Grain Yield (lb/acre @14% moisture) at Three Locations[1]

Advanced Lines and Varieties

Variety	Grain Type	Average	Biggs Biggs RES	Yolo Geer Ranch	Sutter Lauppe Ranch
S-102	S	10530 (1)	11140 (3)	10290 (1)	10150 (1)
96Y196	W	10230 (2)	10800 (4)	10060 (2)	9810 (3)
M-103	M	9990 (3)	10330 (9)	9960 (3)	9670 (5)
CM-101	WX	9940 (4)	10200 (11)	9960 (4)	9670 (4)
96Y457	L	9790 (5)	11210 (2)	9000 (7)	9150 (10)
L-204	L	9660 (6)	10310 (10)	9250 (5)	9410 (7)
95Y214	M	9610 (7)	10550 (7)	9020 (6)	9260 (8)
97Y257	M	9550 (8)	11320 (1)	7890 (10)	9440 (6)
M-202	M	9290 (9)	10480 (8)	7420 (14)	9990 (2)
L-205	L	9180 (10)	10610 (6)	7750 (12)	9170 (9)
98Y174	MPQ	9090 (11)	9820 (14)	8370 (8)	9070 (12)
97Y476	L	8970 (12)	10700 (5)	7750 (13)	8460 (17)
97Y143	SPQ	8830 (13)	9790 (15)	7910 (9)	8780 (14)
98-468	SPQ	8580 (14)	8760 (17)	7850 (11)	9140 (11)
M-204	M	8470 (15)	10100 (13)	6730 (15)	8560 (16)
94Y615	M	8140 (16)	10130 (12)	5720 (16)	8570 (15)
CH-201	SPQ	8030 (17)	9460 (16)	5710 (17)	8920 (13)
CA-201	BA	4640 (18)	7090 (18)	2410 (18)	4420 (18)
MEAN		9030	10160	7950	8980
CV		6.6	8.1	6.1	4.3
LSD (.05)		480	1160	680	550

Preliminary Lines and Varieties

97Y187	S	11160 (1)	11590 (1)	11160 (1)	10730 (2)
97Y182	S	10920 (2)	11070 (3)	10540 (2)	11160 (1)
97Y255	M	10190 (3)	10620 (9)	9340 (6)	10600 (3)
98Y189	S	10110 (4)	11240 (2)	8660 (12)	10440 (4)
98Y199	W	10090 (5)	10820 (7)	10040 (3)	9420 (13)
97Y192	W	10070 (6)	10260 (19)	9740 (4)	10200 (5)
97Y469	L	10020 (7)	10370 (15)	9530 (5)	10160 (6)
98Y214	M	9840 (8)	10700 (8)	8850 (11)	9960 (8)
98Y240	M	9800 (9)	10290 (17)	9300 (8)	9810 (11)
9733046	L	9770 (10)	10940 (5)	8540 (13)	9820 (10)
98Y213	M	9760 (11)	10070 (20)	9330 (7)	9870 (9)
98Y265	M	9630 (12)	10530 (11)	8920 (9)	9440 (12)
98Y212	M	9540 (13)	10530 (10)	8130 (16)	9980 (7)
98Y208	M	9500 (14)	10270 (18)	8900 (10)	9340 (14)
98Y372	M	9440 (15)	11050 (4)	8510 (14)	8770 (16)
9731978	LR	9270 (16)	10840 (6)	8310 (15)	8660 (17)
98Y400	M	8800 (17)	10490 (13)	6750 (21)	9150 (15)
97Y549	L	8790 (18)	10490 (14)	7380 (19)	8510 (20)
98-171	MPQ	8700 (19)	9910 (21)	7660 (18)	8520 (19)
98Y452	LR	8690 (20)	10510 (12)	7720 (17)	7850 (22)
97Y517	LR	8580 (21)	10370 (16)	6780 (20)	8580 (18)
98Y500	L	7430 (22)	9440 (22)	4780 (24)	8070 (21)
98Y454	LR	6740 (23)	9390 (23)	5120 (22)	5690 (24)
AKITA	SPQ	6290 (24)	6390 (24)	4870 (23)	7620 (23)
MEAN		9300	10340	8290	9260
CV		4.8	4.4	6	4.2
LSD (.05)		510	940	1020	800

[1] San Joaquin test not included in over years summary.
S,SPQ = short; M,MPQ = medium; L,LR = long; WX = waxy.
Numbers in parentheses indicate relative rank in column.

Table 9. Grain Yield (lb/acre @14% moisture) Summary of Very Early Rice Varieties by Location and Year (1995-1999)

Location	Year	Calmochi 101	S-102	**M-202**	M-103	M-104
Butte (RES)	1995	9430	10520	**10560**	9270	-
	1996	8150	9410	**8570**	8570	9340
	1997	9800	11490	**10620**	9130	10540
	1998	8320	9030	**8810**	8480	9610
	1999	10200	11140	**10480**	10330	10550
Location Mean		9180	10318	**9808**	9156	10010
San Joaquin	1995	9050	8770	**8730**	8450	-
	1996	9690	9590	**9170**	8650	9390
	1997	9870	10130	**9370**	9630	9590
	1998	8270	9070	**7110**	8120	8340
	1999	8860	8260	**-**	7980	5620
Location Mean		9148	9164	**8595**	8566	8235
Sutter	1995	7460	8560	**9810**	7910	-
	1996	7370	7800	**9680**	8360	8420
	1997	9060	9270	**9720**	8510	8760
	1998	6520	7240	**7090**	6430	7240
	1999	9670	10150	**9990**	9670	9260
Location Mean		8016	8604	**9258**	8176	8420
Yolo	1995	10130	10100	**10580**	9360	-
	1996	9800	8540	**9850**	9200	10230
	1997	11430	11090	**12450**	9700	11530
	1998	8540	9350	**9510**	7780	8820
	1999	9960	10290	**7420**	9960	9020
Location Mean		9972	9874	**9962**	9200	9900
Loc/Years Mean		9079	9490	**9448**	8775	9141
Yield % M-202		**96.1**	**100.4**	**100.0**	**92.9**	**96.7**
Number of Tests		20	20	**19**	20	16

Table 10. 1999 Early Rice Variety Test - Butte County (Biggs-RES)

Advanced Lines and Varieties

Variety	Grain Type	Grain Yield at 14% Moisture lbs/acre	Grain Moisture at Harvest (%)	Seedling Vigor (1-5)	Days to 50% Heading	Lodging (1-99)	Plant Height (cm)
96Y203	W	11260 (1)	20.7 (2)	4.8 (16)	89 (8)	28 (16)	93 (18)
94Y615	M	11200 (2)	20.3 (3)	5.0 (5)	92 (15)	6 (9)	88 (11)
M-204	M	11130 (3)	21.0 (1)	4.9 (10)	91 (14)	7 (12)	90 (13)
97Y393	M	10960 (4)	19.4 (6)	4.8 (14)	90 (12)	3 (7)	88 (11)
M-202	M	10540 (5)	19.5 (5)	5.0 (1)	90 (11)	27 (15)	95 (20)
S-102	S	10460 (6)	13.7 (20)	5.0 (1)	81 (2)	14 (13)	87 (10)
95Y214	M	10220 (7)	16.1 (12)	5.0 (1)	79 (1)	31 (18)	91 (14)
M-103	M	10120 (8)	18.1 (7)	4.8 (15)	82 (3)	28 (16)	93 (19)
96Y341	S	10080 (9)	16.9 (10)	4.9 (12)	93 (18)	4 (8)	87 (9)
L-205	LR	9850 (10)	14.5 (18)	4.9 (12)	88 (6)	7 (11)	85 (7)
CM-101	WX	9850 (11)	14.8 (17)	4.9 (8)	84 (4)	36 (20)	91 (14)
96Y480	L	9840 (12)	15.7 (13)	5.0 (5)	88 (7)	1 (5)	85 (6)
L-204	L	9830 (13)	14.0 (19)	5.0 (5)	87 (5)	1 (1)	80 (3)
98Y582	MPQ	9820 (14)	19.8 (4)	4.9 (8)	93 (17)	6 (10)	92 (17)
97Y315	S	9540 (15)	17.8 (8)	4.7 (20)	94 (20)	1 (5)	92 (16)
CH-201	SPQ	9460 (16)	15.1 (15)	5.0 (4)	89 (8)	18 (14)	85 (5)
98-115	SPQ	9270 (17)	17.6 (9)	4.9 (11)	94 (19)	34 (19)	86 (8)
97Y40	L	9150 (18)	16.6 (11)	4.8 (17)	90 (12)	1 (1)	80 (2)
98Y88	L	9120 (19)	15.6 (14)	4.8 (17)	89 (10)	1 (1)	78 (1)
CA-201	BA	6620 (20)	14.9 (16)	4.8 (17)	92 (16)	1 (1)	82 (4)
MEAN		9920	17.1	4.9	89	13	87
CV		6.2	5.8	1.7	2.4	102	4
LSD (.05)		870	1.4	0.1	3	18	5

Preliminary Lines

98Y421	M	10980 (1)	19.0 (2)	4.9 (7)	88 (10)	5 (9)	87 (9)
98Y242	M	10910 (2)	18.8 (4)	4.9 (9)	85 (2)	15 (20)	91 (19)
98Y558	LW	10780 (3)	16.5 (13)	5.0 (3)	89 (15)	3 (7)	85 (7)
97Y346	BS	10760 (4)	18.9 (3)	4.8 (14)	89 (12)	14 (18)	87 (9)
96Y323	BS	10740 (5)	16.3 (15)	4.7 (20)	86 (4)	8 (12)	89 (16)
98Y249	M	10730 (6)	18.8 (4)	5.0 (3)	89 (12)	11 (17)	88 (12)
98Y618	M	10590 (7)	18.1 (9)	4.8 (17)	91 (19)	4 (8)	88 (13)
97Y197	W	10540 (8)	18.6 (6)	4.9 (9)	88 (8)	10 (16)	88 (14)
98Y613	M	10460 (9)	18.2 (8)	4.8 (17)	90 (17)	9 (14)	89 (15)
98Y256	M	10360 (10)	18.0 (10)	4.8 (14)	87 (7)	8 (12)	85 (5)
98Y417	M	10280 (11)	19.2 (1)	4.9 (5)	89 (15)	8 (11)	85 (5)
98Y272	M	10230 (12)	17.7 (11)	4.9 (9)	85 (3)	14 (18)	82 (3)
98Y509	LR	10150 (13)	14.7 (19)	4.9 (9)	88 (10)	1 (1)	82 (3)
98Y389	M	10110 (14)	16.4 (14)	4.9 (7)	86 (5)	7 (10)	90 (18)
9734336	L	9930 (15)	15.2 (17)	4.9 (5)	85 (1)	2 (6)	90 (17)
98Y535	L	9890 (16)	15.6 (16)	4.8 (19)	90 (18)	1 (1)	78 (2)
9734316	L	9540 (17)	15.1 (18)	4.8 (14)	89 (12)	1 (1)	85 (8)
98Y396	M	9510 (18)	17.4 (12)	5.0 (1)	88 (8)	9 (14)	87 (11)
97Y509	LR	9350 (19)	14.6 (20)	4.9 (9)	86 (5)	1 (1)	77 (1)
99Y074	MPQ	7230 (20)	18.4 (7)	5.0 (1)	96 (20)	2 (5)	91 (19)
MEAN		10150	17.3	4.9	88	7	86
CV		4.8	4.4	1.4	1.3	71.1	3.1
LSD (.05)		1010	1.6	0.1	2		6

Planting dates: May 12, May 26 (reps 1&2, 3&4 respectively).
BS,S,SPQ,W = short; M,MPQ = medium; L,LR,BA = long; WX = waxy.
Subjective rating of 1-5 where 1 = poor and 5 = excellent seedling emergence.
Subjective rating of 1-99 where 1 = none and 99 = completely lodged.
Numbers in parentheses indicate relative rank in column.

Table 11. 1999 Early Rice Variety Test - Butte County (Murphy Ranch)

Advanced Lines and Varieties

Variety	Grain Type	Grain Yield at 14% Moisture lbs/acre	Grain Moisture at Harvest (%)	Seedling Vigor (1-5)	Days to 50% Heading	Plant Height (cm)
CA-201	BA	-	-	4.0 (5)	112 (18)	86 (4)
S-102	S	8630 (1)	17.4 (19)	3.8 (10)	98 (2)	100 (20)
CM-101	WX	8380 (2)	18.0 (16)	3.3 (19)	100 (4)	94 (12)
M-103	M	7720 (3)	18.7 (15)	4.0 (5)	98 (2)	91 (8)
95Y214	M	7200 (4)	19.6 (13)	4.0 (5)	97 (1)	98 (18)
M-202	M	6780 (5)	22.3 (9)	4.5 (2)	103 (7)	95 (13)
96Y203	W	6710 (6)	24.5 (5)	4.8 (1)	107 (11)	97 (17)
L-204	L	6230 (7)	17.5 (17)	3.8 (10)	102 (6)	86 (3)
97Y393	M	6100 (8)	25.2 (4)	3.8 (10)	113 (19)	99 (19)
M-204	M	6070 (9)	24.3 (7)	4.5 (2)	108 (13)	91 (11)
96Y341	S	6060 (10)	21.0 (11)	3.8 (10)	106 (10)	88 (7)
L-205	LR	4860 (11)	17.4 (18)	4.0 (5)	101 (5)	87 (6)
98Y582	MPQ	4780 (12)	25.4 (3)	3.8 (10)	109 (17)	95 (13)
94Y615	M	4740 (13)	25.4 (2)	4.5 (2)	114 (20)	97 (16)
96Y480	L	4290 (14)	20.3 (12)	3.0 (20)	104 (8)	91 (9)
CH-201	SPQ	3930 (15)	23.1 (8)	3.5 (17)	108 (13)	95 (15)
98-115	SPQ	3910 (16)	24.4 (6)	4.0 (5)	108 (13)	87 (5)
97Y315	S	3650 (17)	26.8 (1)	3.5 (17)	109 (16)	91 (9)
98Y88	L	3420 (18)	19.4 (14)	3.8 (10)	107 (12)	80 (1)
97Y40	L	2820 (19)	21.4 (10)	3.8 (10)	106 (9)	82 (2)
MEAN		5590	21.7	3.9	105	91
CV		12.1	3.6	16	1.8	4.7
LSD (.05)		960	1.1	0.9	3	6

Preliminary Lines

96Y323	BS	9370 (1)	21.2 (15)	4.0 (6)	103 (4)	95 (9)
98Y558	W	8220 (2)	18.9 (17)	4.0 (6)	111 (18)	95 (9)
98Y389	M	7790 (3)	22.2 (14)	4.5 (3)	102 (3)	95 (8)
98Y242	M	7660 (4)	22.9 (12)	3.5 (13)	103 (5)	99 (12)
97Y346	BS	7530 (5)	24.0 (10)	5.0 (1)	113 (19)	99 (12)
9734336	L	7320 (6)	16.6 (20)	3.0 (20)	100 (1)	94 (7)
97Y197	W	6810 (7)	24.2 (9)	4.0 (6)	109 (14)	99 (14)
98Y256	M	6560 (8)	23.9 (11)	4.0 (6)	106 (8)	91 (3)
98Y417	M	6210 (9)	24.5 (4)	4.0 (6)	109 (14)	94 (4)
98Y249	M	5970 (10)	24.4 (5)	3.5 (13)	107 (9)	99 (14)
98Y272	M	5560 (11)	24.2 (7)	4.5 (3)	106 (6)	94 (4)
98Y618	M	5540 (12)	24.3 (6)	3.5 (13)	108 (11)	98 (11)
98Y396	M	5510 (13)	24.9 (3)	4.5 (3)	108 (11)	104 (20)
98Y613	M	5390 (14)	22.8 (13)	4.0 (6)	108 (11)	102 (17)
98Y509	LR	4820 (15)	17.6 (19)	3.5 (13)	106 (6)	94 (4)
9734316	L	4740 (16)	18.8 (18)	3.5 (13)	108 (10)	103 (18)
98Y421	M	2900 (17)	26.0 (2)	3.5 (13)	110 (16)	101 (16)
98Y535	L	2640 (18)	20.7 (16)	3.5 (13)	111 (17)	83 (2)
97Y509	LR	2310 (19)	24.2 (8)	4.0 (6)	100 (1)	74 (1)
99Y074	MPQ	1890 (20)	26.4 (1)	5.0 (1)	119 (20)	103 (18)
MEAN		5740	22.6	4	107	96
CV		12.9	4.2	13	2.3	6.2
LSD (.05)		1550	2	1.1	5	12

Planting date: May 13 Harvest date: October 7.
BS,S,SPQ,W = short; M,MPQ = medium; L,LR,BA = long; WX = waxy.
Subjective rating of 1-5 where 1 = poor and 5 = excellent seedling emergence.
Subjective rating of 1-99 where 1 = none and 99 = completely lodged.
Numbers in parentheses indicate relative rank in column.

Table 12. 1999 Early Rice Variety Test - Colusa County (Canal Ranch)

Advanced Lines and Varieties

Variety	Grain Type	Grain Yield at 14% Moisture lbs/acre	Grain Moisture at Harvest (%)	Seedling Vigor (1-5)	Days to 50% Heading	Lodging (1-99)	Plant Height (cm)
96Y203	W	11310 (1)	15.0 (7)	4.5 (2)	99 (11)	83 (20)	94 (16)
M-202	M	10550 (2)	15.2 (5)	3.9 (18)	95 (5)	54 (15)	95 (18)
S-102	S	10260 (3)	14.2 (15)	4.3 (8)	88 (1)	59 (17)	93 (14)
95Y214	M	10010 (4)	13.9 (17)	4.4 (4)	90 (2)	55 (16)	91 (10)
M-103	M	9940 (5)	14.6 (9)	4.4 (3)	90 (2)	61 (18)	95 (20)
CM-101	WX	9870 (6)	14.0 (16)	4.2 (10)	90 (4)	63 (19)	94 (15)
M-204	M	9780 (7)	14.2 (14)	4.2 (11)	100 (15)	13 (11)	91 (10)
96Y480	L	9440 (8)	14.5 (10)	4.4 (4)	98 (7)	1 (1)	86 (7)
L-204	L	9180 (9)	14.4 (11)	4.3 (6)	97 (6)	1 (1)	81 (3)
97Y393	M	9070 (10)	15.2 (5)	4.1 (13)	101 (17)	18 (12)	95 (18)
98-115	SPQ	8760 (11)	16.1 (3)	4.2 (12)	100 (15)	44 (14)	84 (5)
96Y341	S	8290 (12)	14.3 (13)	4.6 (1)	99 (10)	5 (9)	89 (8)
94Y615	M	8260 (13)	13.6 (20)	4.2 (9)	102 (18)	2 (8)	89 (9)
CH-201	SPQ	8220 (14)	14.3 (12)	4.3 (6)	98 (8)	19 (13)	91 (12)
L-205	LR	8160 (15)	13.8 (18)	4.1 (13)	99 (9)	1 (1)	85 (6)
98Y582	MPQ	7830 (16)	15.8 (4)	3.9 (19)	103 (19)	5 (9)	94 (16)
98Y88	L	6820 (17)	13.6 (19)	4.0 (17)	100 (14)	1 (1)	76 (1)
97Y315	S	6340 (18)	16.5 (2)	4.1 (15)	100 (12)	1 (1)	92 (13)
97Y40	L	5500 (19)	14.8 (8)	3.7 (20)	100 (13)	1 (1)	78 (2)
CA-201	BA	2680 (20)	18.7 (1)	4.0 (16)	107 (20)	1 (1)	82 (4)
MEAN		8510	14.8	4.2	98	24	89
CV		8	4.9	5.1	0.9	39.5	3.6
LSD (.05)		960	1	0.3	1	14	5

Preliminary Lines

97Y197	W	10720 (1)	13.0 (16)	4.2 (12)	100 (17)	33 (14)	91 (13)
98Y417	M	10640 (2)	14.7 (8)	4.1 (15)	97 (6)	43 (20)	91 (13)
98Y242	M	10460 (3)	15.4 (5)	4.4 (3)	94 (1)	18 (11)	92 (16)
98Y421	M	10450 (4)	14.8 (7)	4.4 (3)	99 (13)	25 (12)	94 (19)
99Y074	MPQ	10270 (5)	15.8 (2)	4.6 (1)	96 (4)	35 (17)	96 (20)
97Y509	LR	10270 (6)	15.3 (6)	4.1 (15)	96 (5)	36 (18)	88 (8)
98Y389	M	10250 (7)	12.7 (18)	4.2 (12)	98 (7)	33 (15)	93 (18)
98Y272	M	10210 (8)	13.7 (15)	4.4 (3)	98 (7)	18 (9)	82 (4)
98Y256	M	10180 (9)	12.9 (17)	4.5 (2)	100 (16)	8 (6)	86 (7)
98Y535	L	10090 (10)	14.1 (13)	4.2 (12)	95 (2)	18 (9)	88 (9)
97Y346	BS	10050 (11)	12.0 (20)	4.4 (3)	100 (17)	25 (12)	88 (9)
98Y509	LR	9770 (12)	14.6 (9)	4.4 (3)	95 (2)	38 (19)	91 (12)
98Y249	M	9600 (13)	12.3 (19)	4.0 (18)	99 (12)	10 (7)	81 (3)
98Y558	W	9290 (14)	15.8 (1)	4.4 (3)	98 (7)	3 (5)	83 (5)
98Y396	M	9230 (15)	13.8 (14)	4.4 (3)	99 (13)	11 (8)	91 (13)
9734336	L	7630 (16)	15.4 (4)	4.4 (3)	98 (7)	1 (1)	86 (6)
9734316	L	7260 (17)	14.4 (10)	4.0 (18)	98 (7)	1 (1)	76 (1)
98Y613	M	6690 (18)	14.1 (12)	4.4 (3)	99 (13)	1 (1)	78 (2)
98Y618	M	6530 (19)	14.4 (11)	4.1 (15)	100 (17)	33 (15)	88 (9)
96Y323	BS	6350 (20)	15.5 (3)	4.0 (18)	104 (20)	2 (4)	93 (17)
MEAN		9300	14.2	4.3	98	19	88
CV		19	8.2	3.6	3.2	138	6
LSD (.05)				0.3			11

Planting date: May 14 Harvest date: October 19.

BS,S,SPQ,W = short; M,MPQ = medium; L,LR,BA = long; WX = waxy.

Subjective rating of 1-5 where 1 = poor and 5 = excellent seedling emergence.

Subjective rating of 1-99 where 1 = none and 99 = completely lodged.

Numbers in parentheses indicate relative rank in column.

Table 13. 1999 Early Rice Variety Test - Yuba County (Quad 4 Ranch)

Advanced Lines and Varieties

Variety	Grain Type	Grain Yield at 14% Moisture lbs/acre	Grain Moisture at Harvest (%)	Seedling Vigor (1-5)	Days to 50% Heading	Plant Height (cm)
96Y203	W	9590 (1)	21.4 (7)	3.8 (2)	105 (9)	94 (15)
S-102	S	9100 (2)	14.8 (20)	3.0 (8)	92 (1)	92 (13)
CM-101	WX	8410 (3)	15.0 (19)	4.0 (1)	95 (2)	97 (20)
95Y214	M	8290 (4)	17.6 (17)	3.3 (5)	96 (4)	96 (19)
M-103	M	8260 (5)	15.9 (18)	3.0 (8)	95 (2)	94 (16)
M-202	M	7920 (6)	19.9 (10)	2.5 (13)	99 (5)	95 (17)
97Y393	M	7710 (7)	24.3 (1)	2.8 (10)	110 (16)	93 (14)
94Y615	M	7130 (8)	23.5 (4)	2.8 (10)	110 (17)	91 (10)
M-204	M	7100 (9)	24.0 (3)	2.8 (10)	109 (13)	91 (11)
96Y341	S	7090 (10)	18.4 (13)	3.8 (2)	103 (7)	88 (7)
96Y480	L	6940 (11)	18.6 (12)	3.3 (5)	103 (8)	86 (4)
L-204	L	6470 (12)	18.3 (14)	2.5 (13)	108 (10)	82 (3)
CH-201	SPQ	6310 (13)	18.1 (16)	3.8 (2)	101 (6)	86 (4)
98-115	SPQ	6240 (14)	21.9 (5)	3.3 (5)	114 (19)	88 (7)
L-205	LR	6240 (15)	18.1 (15)	2.0 (18)	108 (12)	91 (12)
97Y315	S	6120 (16)	21.9 (6)	2.5 (13)	108 (11)	95 (18)
98Y582	MPQ	6000 (17)	24.1 (2)	2.5 (13)	111 (18)	90 (9)
98Y88	L	5350 (18)	18.9 (11)	2.0 (18)	109 (13)	80 (1)
97Y40	L	3680 (19)	20.3 (9)	2.3 (17)	109 (15)	81 (2)
CA-201	BA	2420 (20)	20.9 (8)	1.3 (20)	115 (20)	87 (6)
MEAN		6820	19.8	2.8	105	90
CV		4.8	5.8	16.9	1.3	3.7
LSD (.05)		460	1.6	0.7	2	5

Preliminary Lines

98Y249	M	8790 (1)	19.1 (18)	2.5 (9)	108 (14)	92 (17)
98Y242	M	8420 (2)	20.1 (13)	3.0 (2)	104 (7)	92 (18)
98Y389	M	8210 (3)	20.3 (12)	3.0 (2)	102 (3)	91 (16)
98Y613	M	7970 (4)	20.5 (10)	3.0 (2)	104 (5)	89 (8)
98Y396	M	7770 (5)	22.3 (2)	3.0 (2)	106 (10)	94 (20)
97Y197	W	7670 (6)	21.9 (5)	2.5 (9)	103 (4)	91 (15)
9734316	L	7610 (7)	18.8 (19)	2.0 (14)	104 (5)	88 (7)
98Y417	M	7560 (8)	19.5 (16)	2.5 (9)	110 (18)	87 (6)
98Y256	M	7520 (9)	19.3 (17)	3.0 (2)	101 (1)	85 (4)
98Y272	M	7400 (10)	20.6 (8)	2.0 (14)	110 (18)	89 (8)
98Y421	M	7310 (11)	20.4 (11)	2.5 (9)	105 (9)	82 (2)
9734336	L	7290 (12)	19.7 (15)	2.0 (14)	104 (7)	89 (8)
98Y558	W	7240 (13)	17.5 (20)	2.0 (14)	109 (16)	89 (8)
96Y323	BS	6630 (14)	20.5 (9)	2.0 (14)	106 (11)	85 (3)
98Y535	L	5580 (15)	22.2 (3)	2.0 (14)	109 (15)	90 (12)
98Y509	LR	5550 (16)	21.0 (7)	2.5 (9)	106 (11)	90 (13)
98Y618	M	5250 (17)	19.9 (14)	3.0 (2)	101 (1)	76 (1)
97Y346	BS	4830 (18)	24.3 (1)	3.0 (2)	109 (16)	93 (19)
97Y509	LR	4800 (19)	22.2 (4)	2.0 (14)	111 (20)	90 (13)
99Y074	MPQ	4050 (20)	21.1 (6)	3.5 (1)	107 (13)	87 (5)
MEAN		6870	20.6	2.6	106	88
CV		20.9	8.2	15.6	4.7	6.6
LSD (.05)				0.8		

Planting date: May 4 Harvest date: September 29.
BS,S,SPQ,W = short; M,MPQ = medium; L,LR,BA = long; WX = waxy.
Subjective rating of 1-5 where 1 = poor and 5 = excellent seedling emergence.
Subjective rating of 1-99 where 1 = none and 99 = completely lodged.
Numbers in parentheses indicate relative rank in column.

Table 14. 1999 Early Rice Lines and Varieties Grain Yield (lb/acre@14% moisture) at Three Locations[1]

ADVANCED LINES AND VARIETIES

Variety	Grain Type	Average	Biggs Biggs RES	Colusa Canal Ranch	Yuba Quad-4 Ranch
96Y203	W	10720 (1)	11260 (1)	11310 (1)	9590 (1)
S-102	S	9940 (2)	10460 (6)	10260 (3)	9100 (2)
M-202	M	9670 (3)	10540 (5)	10550 (2)	7920 (6)
95Y214	M	9510 (4)	10220 (7)	10010 (4)	8290 (4)
M-103	M	9440 (5)	10120 (8)	9940 (5)	8260 (5)
CM-101	WX	9380 (6)	9850 (11)	9870 (6)	8410 (3)
M-204	M	9340 (7)	11130 (3)	9780 (7)	7100 (9)
97Y393	M	9250 (8)	10960 (4)	9070 (10)	7710 (7)
94Y615	M	8860 (9)	11200 (2)	8260 (13)	7130 (8)
96Y480	L	8740 (10)	9840 (12)	9440 (8)	6940 (11)
L-204	L	8490 (11)	9830 (13)	9180 (9)	6470 (12)
96Y341	S	8490 (12)	10080 (9)	8290 (12)	7090 (10)
98-115	SPQ	8090 (13)	9270 (17)	8760 (11)	6240 (14)
L-205	LR	8080 (14)	9850 (10)	8160 (15)	6240 (15)
CH-201	SPQ	8000 (15)	9460 (16)	8220 (14)	6310 (13)
98Y582	MPQ	7880 (16)	9820 (14)	7830 (16)	6000 (17)
97Y315	S	7330 (17)	9540 (15)	6340 (18)	6120 (16)
98Y88	L	7100 (18)	9120 (19)	6820 (17)	5350 (18)
97Y40	L	6110 (19)	9150 (18)	5500 (19)	3680 (19)
CA-201	BA	3900 (20)	6620 (20)	2680 (20)	2420 (20)
MEAN		8420	9920	8510	6820
CV		6.7	6.2	8.0	4.8
LSD (.05)		450	870	960	460

PRELIMINARY LINES

98Y242	M	9930 (1)	10910 (2)	10460 (3)	8420 (2)
98Y249	M	9710 (2)	10730 (6)	9600 (13)	8790 (1)
97Y197	W	9640 (3)	10540 (8)	10720 (1)	7670 (6)
98Y421	M	9580 (4)	10980 (1)	10450 (4)	7310 (11)
98Y389	M	9520 (5)	10110 (14)	10250 (7)	8210 (3)
98Y417	M	9490 (6)	10280 (11)	10640 (2)	7560 (8)
98Y256	M	9350 (7)	10360 (10)	10180 (9)	7520 (9)
98Y272	M	9280 (8)	10230 (12)	10210 (8)	7400 (10)
98Y558	LW	9110 (9)	10780 (3)	9290 (14)	7240 (13)
98Y396	M	8840 (10)	9510 (18)	9230 (15)	7770 (5)
97Y346	BS	8540 (11)	10760 (4)	10050 (11)	4830 (18)
98Y535	L	8520 (12)	9890 (16)	10090 (10)	5580 (15)
98Y509	LR	8490 (13)	10150 (13)	9770 (12)	5550 (16)
98Y613	M	8380 (14)	10460 (9)	6690 (18)	7970 (4)
9734336	L	8290 (15)	9930 (15)	7630 (16)	7290 (12)
97Y509	LR	8140 (16)	9350 (19)	10270 (6)	4800 (19)
9734316	L	8140 (17)	9540 (17)	7260 (17)	7610 (7)
96Y323	BS	7910 (18)	10740 (5)	6350 (20)	6630 (14)
98Y618	M	7460 (19)	10590 (7)	6530 (19)	5250 (17)
99Y074	MPQ	7180 (20)	7230 (20)	10270 (5)	4050 (20)
MEAN		8770	10150	9300	6870
CV		15.3	4.8	19	20.9
LSD (.05)		1550	1010		

[1] Butte County site not included

BS,S,SPQ,W = short; M,MPQ = medium; L,LR,BA = long; WX = waxy.

Numbers in parentheses indicate relative rank in column.

Table 15. Grain Yield (lb/acre @14% moisture) Summary of Early Rice Varieties by Location and Year (1995-1999)

Location	Year	Calhikari 201	**M-202**	M-204	M-205	Calmati 201
Biggs (RES)	1995	-	**9540**	9960	9880	-
	1996	8430	**8790**	9650	10320	8190
	1997	9690	**10510**	10580	11940	8660
	1998	7670	**8260**	8910	9940	8360
	1999	9460	**10540**	11130	11200	6620
Location Mean		8813	**9528**	10046	10656	7958
Butte	1995	-	**8990**	8510	8660	-
	1996	7780	**7280**	8520	9380	7360
	1997	6460	**8240**	8480	8760	7350
	1998	5930	**7320**	7950	7720	5870
	1999	3930	**6780**	6070	4740	-
Location Mean		6025	**7722**	7906	7852	6860
Colusa	1995	-	**8130**	9780	10160	-
	1996	8520	**10340**	9630	10120	8870
	1997	7270	**9130**	8840	9440	6700
	1998	7150	**7590**	7060	7350	5670
	1999	8220	**10550**	9780	8260	2680
Location Mean		7790	**9148**	9018	9066	5980
Yuba	1995	-	**8650**	7880	8170	-
	1996	6610	**8110**	7230	8390	5820
	1997	8110	**7730**	8230	9200	5520
	1998	5320	**6070**	6190	6550	5980
	1999	6310	**7920**	7100	7130	2420
Location Mean		6588	**7696**	7326	7888	4935
Loc/Years Mean		7304	**8524**	8574	8866	6405
Yield % M-202		**85.7**	**100**	**100.6**	**104.0**	**75.1**
Number of Tests		16	**20**	20	20	15

Table 16. 1999 Intermediate/Late Rice Variety Test - Butte County (Biggs-RES)

Advanced Lines and Varieties

Variety	Grain Type	Grain Yield at 14% Moisture lbs/acre	Grain Moisture at Harvest (%)	Seedling Vigor (1-5)	Days to 50% Heading	Lodging (1-99)	Plant Height (cm)
97Y413	M	11200 (1)	16.5 (6)	4.9 (7)	96 (2)	13 (11)	88 (9)
97Y599	M	10240 (2)	18.2 (3)	4.8 (10)	96 (4)	4 (9)	85 (4)
M-204	M	10150 (3)	16.5 (7)	4.9 (7)	98 (7)	10 (10)	87 (8)
94Y663	L	9870 (4)	15.1 (11)	4.7 (12)	97 (5)	3 (6)	84 (2)
97Y543	L	9800 (5)	15.0 (13)	4.8 (9)	98 (8)	3 (8)	86 (6)
M-402	MPQ	9270 (6)	21.7 (2)	4.9 (6)	108 (13)	3 (7)	93 (12)
M-202	M	9170 (7)	15.5 (9)	4.9 (4)	95 (1)	31 (14)	93 (12)
96Y671	L	9150 (8)	15.5 (10)	4.7 (13)	98 (6)	1 (1)	75 (1)
96Y578	MPQ	8930 (9)	16.1 (8)	4.8 (10)	96 (3)	20 (12)	88 (9)
A-201	A	8630 (10)	15.1 (12)	5.0 (1)	99 (10)	2 (3)	86 (7)
98Y119	SPQ	7280 (11)	17.2 (4)	4.9 (4)	103 (12)	30 (13)	85 (5)
CT-201	BA	6770 (12)	15.0 (13)	4.7 (13)	99 (9)	1 (1)	84 (3)
M-401	MPQ	5880 (13)	22.9 (1)	5.0 (3)	116 (14)	2 (3)	97 (14)
99Y074	MPQ	5720 (14)	17.0 (5)	5.0 (2)	102 (11)	2 (5)	93 (11)
MEAN		8720	16.9	4.8	100	9	87
CV		8.2	6.1	1.4	2.1	34.5	3.4
LSD (.05)		1020	1.5	0.1	3	4	4

Preliminary Lines and Varieties

98Y644	M	10930 (1)	16.3 (4)	4.9 (11)	96 (8)	8 (10)	93 (18)
98Y511	L	10700 (2)	14.5 (17)	4.7 (20)	95 (2)	3 (4)	81 (4)
98Y434	M	10700 (3)	16.0 (6)	5.0 (3)	96 (6)	4 (5)	85 (9)
98Y634	M	10280 (4)	15.8 (7)	4.8 (16)	97 (11)	8 (10)	85 (9)
98Y366	M	10080 (5)	17.0 (2)	4.9 (5)	98 (13)	6 (7)	84 (8)
98Y425	M	9960 (6)	15.6 (8)	4.9 (11)	95 (3)	6 (9)	86 (14)
98Y365	M	9680 (7)	16.1 (5)	4.8 (16)	95 (5)	9 (13)	87 (15)
98Y250	M	9670 (8)	15.5 (10)	4.9 (11)	94 (1)	11 (14)	86 (13)
98Y367	M	9630 (9)	15.6 (8)	4.9 (5)	97 (12)	20 (18)	88 (16)
98Y582	MPQ	9450 (10)	17.0 (1)	4.9 (5)	98 (15)	11 (14)	91 (17)
98Y662	L	9420 (11)	14.8 (13)	5.0 (3)	100 (16)	1 (1)	79 (3)
98Y525	L	9390 (12)	13.7 (20)	4.9 (11)	96 (6)	5 (6)	84 (5)
98Y526	L	9390 (13)	13.7 (19)	4.9 (11)	96 (8)	8 (10)	84 (5)
98Y655	REX	9180 (14)	14.5 (17)	4.8 (18)	96 (10)	2 (3)	84 (5)
98Y654	REX	9080 (15)	14.8 (14)	4.8 (18)	101 (19)	1 (1)	77 (2)
97Y576	S	8740 (16)	15.3 (11)	5.0 (1)	101 (18)	24 (19)	101 (20)
98-470	SPQ	8340 (17)	15.1 (12)	4.9 (5)	98 (14)	16 (16)	77 (1)
98-110	SPQ	7530 (18)	16.6 (3)	4.9 (5)	104 (20)	30 (20)	86 (12)
99Y116	MPQ	7520 (19)	14.7 (15)	4.9 (5)	100 (17)	6 (7)	93 (18)
CH-201	SPQ	6930 (20)	14.6 (16)	5.0 (1)	95 (3)	18 (17)	85 (9)
MEAN		9330	15.4	4.9	97	10	86
CV		4.3	3.9	1.2	1.3	31	2.1
LSD (.05)		840	1.2	0.1	3	6	4

Planting dates: May 12, May 26 (reps 1&2, 3&4 respectively).
S,SPQ,W = short; M,MPQ = medium; A,L,BA,REX = long; WX = waxy.
Subjective rating of 1-5 where 1 = poor and 5 = excellent seedling emergence.
Subjective rating of 1-99 where 1 = none and 99 = completely lodged.
Numbers in parentheses indicate relative rank in column.

Table 17. 1999 Intermediate/Late Rice Variety Test - Glenn County (Wylie Ranch)

Advanced Lines and Varieties

Variety	Grain Type	Grain Yield at 14% Moisture lbs/acre	Grain Moisture at Harvest (%)	Seedling Vigor (1-5)	Days to 50% Heading	Lodging (1-99)	Plant Height (cm)
M-401	MPQ	8510 (1)	21.7 (1)	4.9 (2)	116 (14)	1 (1)	94 (14)
M-402	MPQ	8230 (2)	17.8 (2)	4.6 (5)	113 (13)	1 (1)	93 (13)
97Y413	M	8200 (3)	14.1 (6)	4.6 (5)	96 (2)	1 (1)	86 (10)
97Y599	M	7590 (4)	14.4 (4)	4.5 (8)	98 (5)	1 (1)	84 (8)
98Y119	SPQ	7560 (5)	15.4 (3)	4.1 (14)	107 (12)	4 (14)	79 (3)
97Y543	L	7550 (6)	13.6 (13)	4.4 (11)	99 (6)	1 (1)	84 (7)
96Y578	MPQ	7420 (7)	14.3 (5)	4.5 (8)	97 (4)	1 (1)	80 (4)
M-202	M	7420 (8)	14.0 (8)	4.8 (3)	96 (1)	1 (1)	88 (12)
M-204	M	7290 (9)	13.8 (10)	4.6 (7)	97 (3)	1 (1)	85 (9)
94Y663	L	7120 (10)	13.8 (11)	4.1 (13)	100 (8)	1 (1)	78 (2)
99Y074	MPQ	6870 (11)	13.5 (14)	5.0 (1)	104 (11)	1 (1)	86 (11)
96Y671	L	6570 (12)	14.0 (9)	4.3 (12)	99 (6)	1 (1)	76 (1)
A-201	A	6410 (13)	14.1 (7)	4.5 (8)	101 (9)	1 (1)	82 (5)
CA-201	BA	5450 (14)	13.7 (12)	4.8 (3)	102 (10)	1 (1)	82 (6)
MEAN		7300	14.9	4.5	102	1	84
CV		4.8	2.5	4.2	1.4	92.7	3.1
LSD (.05)		500	0.5	0.3	2	2	4

Preliminary Lines and Varieties

98Y434	M	9080 (1)	15.5 (6)	4.4 (13)	102 (9)	1 (1)	93 (17)
98Y644	M	8840 (2)	16.3 (2)	4.5 (4)	104 (17)	6 (16)	100 (20)
98Y425	M	8800 (3)	15.6 (5)	4.5 (4)	101 (5)	1 (1)	87 (9)
98Y366	M	8690 (4)	15.1 (8)	4.8 (2)	99 (2)	1 (1)	89 (12)
98Y525	L	8680 (5)	13.4 (20)	4.5 (4)	102 (9)	15 (18)	87 (11)
98Y634	M	8600 (6)	15.9 (3)	4.5 (4)	102 (7)	1 (1)	90 (13)
98Y511	L	8500 (7)	14.0 (14)	4.3 (14)	102 (7)	25 (19)	84 (7)
98Y662	L	8370 (8)	13.9 (15)	4.5 (4)	103 (12)	1 (1)	80 (3)
98Y367	M	8220 (9)	15.6 (4)	4.5 (4)	104 (18)	3 (15)	95 (18)
98Y250	M	8210 (10)	14.7 (13)	4.5 (4)	99 (2)	1 (1)	90 (14)
97Y576	S	8140 (11)	15.3 (7)	5.0 (1)	101 (6)	13 (17)	95 (18)
98Y526	L	8140 (12)	13.9 (15)	4.0 (17)	102 (9)	2 (14)	83 (4)
98Y582	MPQ	7960 (13)	15.1 (8)	4.5 (4)	103 (12)	1 (1)	87 (9)
98Y655	LR	7890 (14)	14.7 (12)	4.0 (17)	103 (15)	1 (1)	84 (5)
98-110	SPQ	7750 (15)	16.5 (1)	4.3 (14)	109 (20)	33 (20)	86 (8)
98Y365	M	7680 (16)	15.1 (10)	4.3 (14)	103 (12)	1 (1)	92 (16)
CH-201	SPQ	7590 (17)	13.6 (18)	4.5 (4)	100 (4)	1 (1)	84 (5)
98-470	SPQ	7500 (18)	13.9 (17)	4.0 (17)	97 (1)	1 (1)	72 (1)
99Y116	MPQ	6710 (19)	13.6 (19)	4.8 (2)	103 (15)	1 (1)	92 (15)
98Y654	LR	6450 (20)	14.7 (11)	4.0 (17)	104 (18)	1 (1)	79 (2)
MEAN		8090	14.8	4.4	102	5	87
CV		9.2	5.3	3.9	1.3	122	4.7
LSD (.05)			1.6	0.4	3	14	9

Planting date: May 4 Harvest date: October 8.

S,SPQ,W = short; M,MPQ = medium; A,L,BA,LR = long; WX = waxy.

Subjective rating of 1-5 where 1 = poor and 5 = excellent seedling emergence.

Subjective rating of 1-99 where 1 = none and 99 = completely lodged.

Numbers in parentheses indicate relative rank in column.

Table 18. 1999 Intermediate/Late Rice Variety Test - Yuba County (Penning Ranch)

Advanced Lines and Varieties

Variety	Grain Type	Grain Yield at 14% Moisture lbs/acre	Grain Moisture at Harvest (%)	Seedling Vigor (1-5)	Days to 50% Heading	Lodging (1-99)	Plant Height (cm)
M-202	M	8720 (1)	15.2 (9)	4.0 (3)	93 (1)	1 (1)	91 (12)
97Y413	M	8620 (2)	15.0 (13)	4.0 (3)	95 (2)	1 (1)	86 (7)
96Y578	MPQ	8240 (3)	15.2 (9)	3.3 (11)	98 (7)	1 (1)	86 (7)
M-204	M	8010 (4)	15.2 (9)	3.5 (8)	96 (4)	1 (1)	88 (11)
M-402	MPQ	7820 (5)	17.0 (3)	3.8 (7)	116 (13)	1 (1)	91 (13)
98Y119	SPQ	7700 (6)	17.2 (2)	3.5 (8)	108 (12)	40 (14)	87 (9)
M-401	MPQ	7650 (7)	19.8 (1)	4.0 (3)	120 (14)	1 (1)	93 (14)
97Y543	L	7420 (8)	15.1 (12)	3.3 (11)	96 (3)	1 (1)	81 (3)
94Y663	L	7300 (9)	14.6 (14)	3.3 (11)	97 (6)	1 (1)	77 (2)
97Y599	M	7050 (10)	15.6 (6)	3.5 (8)	96 (4)	1 (1)	84 (5)
96Y671	L	6830 (11)	15.7 (5)	3.0 (14)	100 (8)	1 (1)	72 (1)
A-201	L	6750 (12)	15.3 (8)	4.8 (2)	101 (9)	1 (1)	84 (5)
CA-201	BA	5650 (13)	15.3 (7)	4.0 (3)	102 (10)	1 (1)	82 (4)
99Y074	MPQ	4890 (14)	16.0 (4)	5.0 (1)	107 (11)	1 (1)	88 (10)
MEAN		7330	15.9	3.8	102	4	85
CV		4.5	4.4	11.9	1.5	99.8	3.7
LSD (.05)		470	1	0.6	2	5	4

Preliminary Lines and Varieties

98Y425	M	8470 (1)	13.8 (19)	4.0 (5)	94 (2)	1 (1)	86 (16)
98Y511	L	8380 (2)	14.1 (16)	3.0 (18)	97 (6)	1 (1)	84 (11)
98Y644	M	8330 (3)	14.3 (13)	4.0 (5)	98 (8)	1 (1)	89 (19)
97Y576	S	7820 (4)	14.9 (5)	5.0 (1)	99 (14)	1 (1)	90 (20)
98Y434	M	7770 (5)	14.2 (15)	4.0 (5)	97 (6)	1 (1)	85 (14)
98Y582	MPQ	7630 (6)	15.0 (4)	4.0 (5)	100 (15)	1 (1)	81 (8)
98Y526	L	7490 (7)	14.4 (11)	3.5 (15)	100 (15)	1 (1)	80 (5)
98Y365	M	7460 (8)	14.4 (12)	4.0 (5)	98 (10)	1 (1)	85 (14)
98-110	SPQ	7440 (9)	17.2 (1)	3.5 (15)	109 (20)	45 (20)	87 (17)
98Y525	L	7300 (10)	14.6 (9)	4.0 (5)	98 (8)	1 (1)	80 (5)
98Y366	M	7270 (11)	13.8 (18)	4.0 (5)	95 (4)	1 (1)	85 (13)
98Y250	M	7210 (12)	13.9 (17)	4.0 (5)	94 (1)	1 (1)	83 (10)
98Y655	LR	7160 (13)	14.9 (6)	3.5 (15)	98 (10)	1 (1)	80 (5)
98Y367	M	7030 (14)	14.3 (13)	4.5 (2)	98 (10)	1 (1)	89 (18)
CH-201	SPQ	7030 (15)	14.7 (8)	4.5 (2)	95 (4)	3 (19)	84 (11)
98Y662	L	6940 (16)	14.8 (7)	4.5 (2)	103 (18)	1 (1)	76 (2)
98Y654	LR	6850 (17)	16.4 (2)	3.0 (18)	100 (15)	1 (1)	75 (1)
98Y634	M	6700 (18)	14.5 (10)	4.0 (5)	99 (13)	1 (1)	77 (4)
98-470	SPQ	6010 (19)	15.3 (3)	3.0 (18)	95 (3)	1 (1)	76 (3)
99Y116	MPQ	5090 (20)	13.8 (19)	4.0 (5)	104 (19)	1 (1)	83 (9)
MEAN		7270	14.7	3.9	98	3	83
CV		7.2	3.3	10.8	1.5	50.7	5.2
LSD (.05)		1100	1	0.9	3	3	9

Planting date: May 3 Harvest date: October 20.

S,SPQ,W = short; M,MPQ = medium; A,L,BA,LR = long; WX = waxy.

Subjective rating of 1-5 where 1 = poor and 5 = excellent seedling emergence.

Subjective rating of 1-99 where 1 = none and 99 = completely lodged.

Numbers in parentheses indicate relative rank in column.

Table 19. 1999 Late Rice Lines and Varieties Grain Yield (lb/acre @14% moisture) at Three Locations

ADVANCED LINES AND VARIETIES

Variety	Grain Type	Average	Biggs Biggs RES	Glenn Wiley Ranch	Yuba Penning Ranch
97Y413	M	9340 (1)	11200 (1)	8200 (3)	8620 (2)
M-204	M	8480 (2)	10150 (3)	7290 (9)	8010 (4)
M-402	MPQ	8440 (3)	9270 (6)	8230 (2)	7820 (5)
M-202	M	8440 (4)	9170 (7)	7420 (8)	8720 (1)
97Y599	M	8290 (5)	10240 (2)	7590 (4)	7050 (10)
97Y543	L	8260 (6)	9800 (5)	7550 (6)	7420 (8)
96Y578	MPQ	8200 (7)	8930 (9)	7420 (7)	8240 (3)
94Y663	L	8100 (8)	9870 (4)	7120 (10)	7300 (9)
98Y119	SPQ	7510 (9)	7280 (11)	7560 (5)	7700 (6)
96Y671	L	7510 (10)	9150 (8)	6570 (12)	6830 (11)
M-401	MPQ	7350 (11)	5880 (13)	8510 (1)	7650 (7)
A-201	LA	7260 (12)	8630 (10)	6410 (13)	6750 (12)
CA-201	BA	5960 (13)	6770 (12)	5450 (14)	5650 (13)
99Y074	MPQ	5830 (14)	5720 (14)	6870 (11)	4890 (14)
MEAN		7780	8720	7300	7330
CV		6.4	8.2	4.8	4.5
LSD (.05)		400	1020	500	470

Preliminary Lines and Varieties

98Y644	M	9370 (1)	10930 (1)	8840 (2)	8330 (3)
98Y511	L	9200 (2)	10700 (2)	8500 (7)	8380 (2)
98Y434	M	9180 (3)	10700 (3)	9080 (1)	7770 (5)
98Y425	M	9080 (4)	9960 (6)	8800 (3)	8470 (1)
98Y366	M	8680 (5)	10080 (5)	8690 (4)	7270 (11)
98Y634	M	8530 (6)	10280 (4)	8600 (6)	6700 (18)
98Y525	L	8460 (7)	9390 (12)	8680 (5)	7300 (10)
98Y250	M	8360 (8)	9670 (8)	8210 (10)	7210 (12)
98Y582	MPQ	8340 (9)	9450 (10)	7960 (13)	7630 (6)
98Y526	L	8340 (10)	9390 (13)	8140 (12)	7490 (7)
98Y367	M	8290 (11)	9630 (9)	8220 (9)	7030 (14)
98Y365	M	8270 (12)	9680 (7)	7680 (16)	7460 (8)
98Y662	L	8240 (13)	9420 (11)	8370 (8)	6940 (16)
97Y576	S	8230 (14)	8740 (16)	8140 (11)	7820 (4)
98Y655	LR	8080 (15)	9180 (14)	7890 (14)	7160 (13)
98-110	SPQ	7570 (16)	7530 (18)	7750 (15)	7440 (9)
98Y654	LR	7460 (17)	9080 (15)	6450 (20)	6850 (17)
98-470	SPQ	7280 (18)	8340 (17)	7500 (18)	6010 (19)
CH-201	SPQ	7180 (19)	6930 (20)	7590 (17)	7030 (15)
99Y116	MPQ	6440 (20)	7520 (19)	6710 (19)	5090 (20)
MEAN		8230	9330	8090	7270
CV		7	4.3	9.2	7.2
LSD (.05)		660	840		1100

S,SPQ,W = short; M,MPQ = medium; A,L,BA,LR = long; WX = waxy.
Numbers in parentheses indicate relative rank in column.

Table 20. Grain Yield (lb/acre @14% moisture) Summary of Late Rice Varieties by Location and Year (1995-1999)

Location	Year	**M-401**	M-402
Butte (RES)	1995	**8790**	8970
	1996	**8090**	9840
	1997	**11120**	10560
	1998	**6990**	9620
	1999	**5880**	9270
Location Mean		**8174**	9652
Glenn	1995	**8350**	8340
	1996	**8600**	8980
	1997	**8580**	8150
	1998	**7820**	7920
	1999	**8510**	8230
Location Mean		**8372**	8324
Sutter/Yuba	1995	**9160**	10860
	1996	**7470**	7980
	1997	**8860**	8790
	1998	**6270**	7280
	1999	**7650**	7820
Location Mean		**7882**	8546
Loc/Years Mean		**8143**	8841
Yield % M-401		**100.0**	**108.6**
Number of Tests		**15**	15