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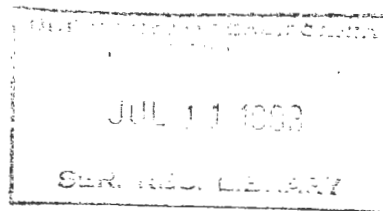
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## CALIFORNIA RICE VARIETIES: Description and Performance Summary of the 1981 and Multi-Year Statewide Rice Variety Tests in California

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## Introduction

The California rice variety improvement program is a cooperative arrangement of the California Cooperative Rice Research Foundation, Inc., (CCRRFI) the United States Department of Agriculture, the University of California, and the rice industry. The cooperative rice breeding and varietal testing program has resulted in a large number of newly released varieties. Over 95% of California's rice acreage was planted to short-statured varieties in 1981, resulting in a record state yield of approximately 72 cwt/acre. A number of experimental lines offer an even greater potential for additional gains in yield per acre than those varieties that resulted in the 1981 record yield. One of these, M-201, was placed into Foundation seed production in 1981 and will be widely grown in 1983. This variety was intended as a substitute for M-9, and in all likelihood will soon replace it in most production areas.

The following report of the 1981 regional rice variety tests provides important information for the California Cooperative Rice Research Foundation, Inc. (CCRRFI) and the United States Department of Agriculture, rice breeders for determining potential new varieties and specific characteristics for further selection of experimental lines. The names and descriptions of the current publicly developed varieties are listed in Table 1 for rice growers to determine varieties most suitable for their specific growing areas.

### Experimental Procedures for the 1981 Regional Rice Variety Tests

A total of 11 uniform variety tests were conducted in eight locations from Butte to Merced County. Twenty-four entries (including currently grown commercial varieties as checks) and experimental lines were planted in each of three maturity classes for a total of 72 varietal entries. Three tests, one of each maturity group, were conducted at the Rice Experiment Station at Biggs by the CCRRFI plant breeders H. L. Carnahan, C. W. Johnson and S. T. Tseng. The remaining tests were carried out under a diversity of conditions using the typical cultural practices for the grower and location in order to test agronomic performance under a wide range of production practices and environments. The tests were divided into the following maturity groups.

#### Statewide Uniform Rice Variety Tests

Very Early Maturity Group - Three uniform tests were conducted; at the Rice Experiment Station (Butte County), the Demeter Corporation (Sacramento County), and the Frobose Ranch (Stanislaus County). Twenty-four lines were included in each test.

Early Maturity Group - Four uniform tests were conducted; at the Rice Experiment Station (Butte County), the Dennis Ranch (Colusa County), Geer Ranch (Yolo County), and the Mohammed Ranch (Yuba County). Twenty-four lines were included in each test.

Late Maturity Group - Four uniform tests were conducted; at the Rice Experiment Station (Butte County), Wylie Farming (Glenn County), the O'Banion Ranch (Merced County) and the Guisti Ranch (Sutter County). Twenty-four lines were included in each test excepting that cultivar NFD 76-5 was added at the

Glenn and Sutter county locations.

Performance characteristics of each entry measured at each location were seedling vigor, days to 50% heading, plant height, lodging, grain moisture at harvest and grain yield at 14% moisture. Seedling vigor was subjectively rated by visual observation on a scale of 1 (poor) to 5 (excellent), 23 to 28 days after planting. Seedling vigor as determined in these tests is a measure of the ability of an adequate number of seedlings to emerge through water in a given period of time. Days to 50% heading was determined by visual observation. Plant height was determined at harvest by measuring from soil surface to the tip of the panicle. Plant lodging was rated visually at harvest on a scale of 1 (no lodging) to 99 (all plants lodged) and is reported as such. This method does not characterize time of lodging which is more highly correlated with grain yield. Lodging after field drainage does not reduce grain yield as significantly as lodging into the water before substantial seed development.

Mature grain was harvested with a Massey-Ferguson 39 combine for yield determination. A 7 X 20 foot swath (0.0032 acre) was harvested for the yield sample in off-station tests and a 10 X 20 foot swath (0.0046 acre) was harvested with an Allis-Chalmers combine at the Biggs Rice Experiment Station. Grain was subsampled for moisture determination at harvest and grain yield adjusted to 14% moisture.

Agronomic Performance Summary of 1981  
and Multi-Year Varietal Entries by Maturity Group

Varietal performance summaries are presented by maturity group. Results of 1981 tests are presented by location for each maturity group followed by an over-location summary and a multi-year and multi-location grain yield summary. The multi-year and multi-location grain yield summaries contain only commercial or potentially commercial varieties. Selection of entries for the multi-year and multi-location grain yield summaries was based upon availability of data and superior yield performance. Grain yields of promising experimental lines also are reported as a percentage of check varieties in each maturity group for comparative purposes. These percentage yield comparisons are based on equivalent location and year means and may not reflect the mean yield of a particular variety over all locations and years.

Summary of the Very Early Rice Variety Tests (<90 days to 50% heading at Biggs)

The 1981 very early maturity rice variety tests were conducted at two cool locations, Natomas district, Sacramento County, and near Oakdale, Stanislaus County. One additional test was conducted in the warm Biggs area at the Rice Experiment Station, Butte County. Agronomic performance of the 24 entries at the Biggs, Sacramento, and San Joaquin-Stanislaus county locations are given in Tables 2, 3 and 4, respectively.

Table 5 shows the average yield (corrected to 14% moisture), grain moisture at harvest, days to 50% heading, seedling vigor, plant height and lodging over all three locations of the 24 lines tested. In 1981, 10 of the 11 highest yielding entries in this group were short-grain types. These results are similar to those of 1980 where 7 of the 11 highest yielding entries were

short-grain lines. One medium-grain, entry 78-y-119 (entry number 5), has done well in this test since 1978 and is a possible candidate to become a very early short-grain variety.<sup>1</sup> Although this line was 20th at Biggs in 1981, it was 1st and 2nd in Stanislaus and Sacramento County, respectively. This entry averaged 8490 pounds per acre in 1981. S-201 was the leading entry for all grain types in the very early test.

Table 6 gives the multi-year and multi-location summary for the very early varieties and experimental lines. Since not all entries were tested at each location in every year, over-location percent yield of Earlirose compares only equivalent-year means. Location averages are important indicators of varietal performance in a particular environment. For example, at the warmest location, Biggs, Earlirose has not produced yields comparable to M-9, M-101 or S-201, however, in the San Joaquin-Stanislaus location yields have been superior to M-101, comparable to M-9, and inferior to S-201.

#### Summary of the Early Rice Variety Tests (90-99 days to 50% heading at Biggs)

The 1981 early maturity rice variety tests were conducted at four locations: the Rice Experiment Station near Biggs, Butte County; near Maxwell, Colusa County; in District 108, Yolo County; and in District 10, Yuba County. Agronomic performance of the 24 entries is given for each of the above locations in Tables 7, 8, 9 and 10 respectively. Seedling vigor ratings were not taken in Yuba County.

Table 11 gives the over-location summary for yield at 14% moisture, grain moisture at harvest, seedling vigor, days to 50% heading, height and lodging for the early lines. The medium-grain 78-y-186 (entry number 34) was the highest yielding entry over all locations averaging 98 cwt/acre in 1981. This line has given consistently higher yields over three years and has been named as variety M-201. Twenty lines yielded more than M-9 although only 10 were statistically significantly greater. S-201 ranked 3rd and L-201 8th. Twenty of 23 short statured (excluding the tall S-6) lines produced greater yields than the most widely grown variety, M-9, indicating that improved varieties are continually being developed.

Table 12 gives the multi-year and multi-location summary for the early varieties and selected lines. All varieties are compared to S-6 on an over-all equivalent location-year means basis. The short-statured varieties M-9, L-201, S-201 and Calmochi 202 have all given superior yields to the tall-statured S-6. The short-statured experimental line 78-y-186 (M-201) has out-yielded S-6 by 24% on a nine location-year average. Specific location yield advantages of M-9 over S-6 on a five-year average basis have been 22% in Butte County (Rice Experiment Station), 7% in Yuba County (District 10), 9% in Yolo County (District 108). Specific location yield advantages of 78-y-186 over S-6 have been 47% at the Rice Experiment Station, 13% in Yuba County (District 10) and 15% in Yolo County (District 108).

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<sup>1</sup>Note: 78-y-119 was dropped as a varietal candidate because of unacceptable quality.

Summary of the Intermediate (97-104 days to 50% heading at Biggs) and Late Rice Variety Tests (>105 days to heading at Biggs)

The 1981 late maturity variety tests were conducted at four locations: the Rice Experiment Station near Biggs, Butte County; near Norman, Glenn County; near Los Banos, Merced County; and near Robbins, Sutter County. Twenty-four entries were tested at Butte and Merced counties. Twenty-six entries were included in Glenn and Sutter counties. Agronomic performance of the late maturing lines at each location listed above are given in Tables 13, 14, 15 and 16, respectively.

Table 17 shows the four-location average for yield at 14% moisture, grain moisture at harvest, seedling vigor, days to 50% heading, height and lodging. M-401 ranked 9th even with a relatively high degree of lodging (40%). M-7 and M-302 ranked 18th and 19th, respectively. M-401, released in 1981, averaged 9780 pounds/acre. Although eight varieties produced greater yields than M-401, none of these yields were significantly higher statistically. Fifteen experimental lines were improved over M-7.

Table 18 gives the multi-year and multi-location summary for the late varieties and selected lines. All varieties are compared to M-7 on an overall equivalent location-year means basis. M-7, Calrose 76, and M-302 were within 2% in yield whereas M-401 was 4.5% better than M-7 over all comparable location-years.

Table 1. CHARACTERISTICS OF PUBLICLY DEVELOPED RICE VARIETIES - 1981

Grain Type	Height*	Maturity	Seed Widely Available	Comments
<b>SHORT GRAIN</b>				
S6	Tall	Early	1977	Replaced Colusa, wide adaptation but only moderate resistance to blanking. Has irregular maturity.
S-201	Short	Early	1981	Very high yield potential, should replace S6 rapidly; more resistance to blanking than S6; maturity like S6.
<b>MEDIUM GRAIN</b>				
M-101	Short	Very Early	1981	Earliest variety; excellent seedling vigor, good resistance to blanking; best suited for special conditions such as cold areas and/or late planting dates; head rice can be low, so harvest as near to 25% moisture as possible to enhance head yield. May not yield as well as other varieties at normal planting dates.
M9	Short	Early	1979	Very high yield potential in warmer areas; not adapted to colder areas or to very early seeding because of poor seedling vigor; mixed maturity of seeds on panicles. Somewhat difficult to thresh cleanly--special harvest adjustment may be necessary. May be more susceptible to sheath blight.
M-301	Short	Intermediate	1981	High yield potential, was replacement for M5; good seedling vigor and resistance to blanking, can be seeded 10 days later than optimum date for late varieties, or earlier to spread harvest season; straw strength not as good as M7.
M-302	Short	Intermediate	1983	Replacement for M-301; has better straw strength; more translucent grains; is about 2 days later; has good seedling vigor and resistance to blanking. Can be seeded 7 or 8 days later than late varieties to spread harvest season.
M7	Short	Late	1979	High yield potential; good seedling vigor and resistance to blanking; very good straw strength. Replaced CS-M3.
Calrose 76	Short	Late	1979	High yield potential; good seedling vigor and resistance to blanking; rough hulls and leaves; long awns in warmer areas. Replaced Calrose.
M-401	Short	Late	1983	Intended as a premium quality rice and not as a replacement for M7. Has high yield potential; 3 days earlier than M7 but lodges more and is more sensitive to blanking.
<b>LONG GRAIN</b>				
L-201**	Intermediate	Early	1981	Very high yield potential in warmer areas; not adapted to colder areas; injury to Ordram® has been observed at rates greater than 3 a.i. lbs per acre; threshes readily at low cylinder speeds. Harvest at moisture content as near to 25% as possible to enhance head yield; matures in 7 to 10 fewer days after heading than do short- or medium-grain varieties.
<b>SWEET</b>				
Calmochi-202**	Short	Early	1983	A sweet rice replacing Calmochi-201. Similar to S-201 in growth characteristics but 2 days later. Has smaller seeds. Yields much greater and lodges less than Calmochi-201.

\*The varieties with short height are rapidly replacing the tall varieties. Proper management of the short-stature varieties to obtain high yield include: (1) managing water depth and other factors to obtain a dense stand; (2) good weed control; (3) nitrogen fertilization of 30 to 40 units higher than has been used for tall varieties; and (4) drain as late as possible before harvest.

\*\*L-201 and Calmochi varieties should not be grown unless arrangements have first been made with marketing agency. Market acceptance is in the exploratory stage.

Prepared by the California Co-operative Rice Research Foundation and the University of California Cooperative Extension.



Table 2. Performance Summary of Very Early Rice Experimental Lines and Varieties, Butte County, 1981

1981 entry no.	Variety description	Grain type <sup>1</sup>	Grain yield @ 14% H <sub>2</sub> O (lbs/acre)	Grain moisture at harvest (%)	Seedling vigor 1-5 <sup>2</sup>	Days to 50% heading	Plant height (cm)	Lodging 1-99 <sup>3</sup>
3	S-201	S	10060	23.9	5.0	92	99	47
19	80-y-157	S	9910	21.3	5.0	90	99	88
20	80-y-229	S	9820	21.9	4.7	91	97	52
22	80-y-321	L	9390	20.6	3.5	91	107	43
4	78-y-43	S	9350	22.4	4.7	96	100	59
9	79-y-117	M	9140	21.3	5.0	89	98	82
14	80-y-126	M	8810	21.5	4.8	90	99	83
11	80-y-24	S	8760	19.9	4.8	83	100	98
10	80-y-23	S	8730	21.1	4.8	89	100	98
18	80-y-139	S	8700	21.3	4.8	87	95	92
24	80-y-3838	L	8680	18.0	5.0	84	112	61
15	80-y-128	S	8270	19.3	5.0	89	100	98
17	80-y-138	S	8270	21.0	4.8	88	100	99
16	80-y-132	M	8240	23.5	5.0	91	101	85
8	79-y-103	M	8170	20.0	5.0	82	101	99
12	80-y-106	S	8160	19.3	5.0	77	96	99
7	79-y-21	S	7970	20.0	4.7	80	100	99
1	M-101	M	7930	19.7	5.0	80	101	99
21	80-y-251	L	7500	19.1	4.9	91	92	50
5	78-y-119	S	7330	21.3	4.8	84	96	99
13	80-y-119	M	7310	22.1	4.8	92	99	86
6	M-9	M	6710	23.1	5.0	92	107	99
23	80-y-351	L	6620	17.7	5.0	91	92	2
2	Earlirose	M	6330	19.2	5.0	90	132	99
GRAND MEAN			8340	20.8	4.8	88	101	80
CV			13.0	5.4	4.3	3.5	4.6	29.0
LSD (.05)			1530	1.6	0.29	4.3	6.6	33

Conducted by the Rice Experiment Station, Butte County, near Biggs.

Planting date: 2 reps planted May 10, 2 reps planted May 27. Data an average of all replications.

<sup>1</sup>S = short; M = medium; L = long.

<sup>2</sup>Subjective rating of 1-5 where 1 = poor and 5 = excellent emergence at approximately 28 days after planting.

<sup>3</sup>Subjective rating of 1-99 where 1 = none and 99 = 100% lodged.

Table 3. Performance Summary of Very Early Rice Experimental Lines and Varieties, Sacramento County, 1981

1981 entry no.	Variety description	Grain type <sup>1</sup>	Grain yield @ 14% H <sub>2</sub> O (lbs/acre)	Grain moisture at harvest (%)	Seedling vigor 1-5 <sup>2</sup>	Days to 50% heading	Plant height (cm)	Lodging 1-99 <sup>3</sup>
19	80-y-157	S	8110	22.1	4.8	94	75	1
5	78-y-119	S	8050	18.8	5.0	91	83	1
3	S-201	S	8020	21.3	4.8	97	76	1
4	78-y-43	S	8010	22.3	4.5	98	78	1
2	Earlrose	M	7880	18.7	5.0	92	106	34
17	80-y-138	S	7880	19.5	4.8	92	77	1
15	80-y-128	S	7740	21.7	4.8	92	77	1
6	M-9	M	7700	22.6	4.8	94	80	1
10	80-y-23	S	7580	19.0	5.0	93	80	1
18	80-y-139	S	7540	20.7	4.8	92	75	1
8	79-y-103	M	7500	22.1	4.5	90	85	2
9	79-y-117	M	7430	21.5	4.8	93	77	1
23	80-y-351	L	7400	18.6	5.0	94	78	1
21	80-y-251	L	7390	20.1	5.0	96	76	1
22	80-y-321	L	7330	22.8	3.8	101	86	1
11	80-y-24	S	7300	20.0	4.3	91	78	1
20	80-y-229	S	7280	19.6	4.3	93	79	1
14	80-y-126	M	7060	21.4	4.8	93	74	1
7	79-y-21	S	7050	20.2	4.8	90	82	1
16	80-y-132	M	7030	21.8	5.0	92	71	1
13	80-y-119	M	6540	21.6	4.0	94	73	1
24	80-y-3838	L	5770	21.1	5.0	96	90	1
1	M-101	M	5330	20.4	5.0	90	78	1
12	80-y-106	S	5080	21.2	4.5	87	72	4
GRAND MEAN			7250	20.8	4.7	93	79	3
CV			10.3	3.3	10.0	1.3	5.2	316.2
LSD (.05)			1050	1.0	0.66	1.8	5.8	11.2

Cooperator and location: Demeter Corporation, Natomas.

Planting date: May 12, 1981

<sup>1</sup>S = short; M = medium; L = long.

<sup>2</sup>Subjective rating of 1-5 where 1 = poor and 5 = excellent emergence at approximately 28 days after planting.

<sup>3</sup>Subjective rating of 1-99 where 1 = none and 99 = 100% lodged.



Table 4. Performance Summary of Very Early Rice Experimental Lines and Varieties, Stanislaus County, 1981

1981 entry no.	Variety description	Grain type <sup>1</sup>	Grain yield @ 14% H <sub>2</sub> O (lbs/acre)	Grain moisture at harvest (%)	Seedling vigor 1-5 <sup>2</sup>	Days to 50% heading	Plant height (cm)	Lodging 1-99 <sup>3</sup>
5	78-y-119	S	10100	19.7	3.1	87	83	1
3	S-201	S	9780	21.7	3.4	93	77	1
8	79-y-103	M	9630	21.0	3.6	87	83	4
4	78-y-43	S	9630	23.1	3.2	95	75	1
17	80-y-138	S	9600	18.8	3.1	89	76	20
18	80-y-139	S	9580	21.8	3.6	91	76	4
15	80-y-128	S	9510	22.0	4.3	92	72	1
12	80-y-106	S	9360	16.8	3.3	85	69	1
14	80-y-126	M	9350	20.9	3.6	91	72	13
11	80-y-24	S	9320	20.1	3.9	89	73	1
19	80-y-157	S	9310	24.0	4.7	96	69	1
2	Earlirose	M	9290	19.6	4.3	92	104	99
10	80-y-23	S	9290	19.6	4.0	92	73	1
6	M-9	M	9270	21.6	3.8	91	75	1
9	79-y-117	M	9170	21.6	3.6	91	72	2
7	79-y-21	S	9170	19.4	3.9	86	79	5
20	80-y-229	S	8900	19.4	3.3	91	75	1
1	M-101	M	8690	16.7	3.3	88	76	1
13	80-y-119	M	8620	20.3	4.2	90	71	1
16	80-y-132	M	8590	21.2	3.7	88	74	1
24	80-y-3838	L	8180	17.2	4.6	95	81	1
21	80-y-251	L	8110	18.6	3.6	93	78	2
22	80-y-321	L	7800	19.3	3.9	95	78	2
23	80-y-351	L	7380	17.8	4.2	96	74	1
GRAND MEAN			9070	20.1	3.7	91	76	7
CV			4.8	4.6	21.4	1.4	7.2	132.3
LSD (.05)			610	1.3	ns	1.9	7.8	12.9

Cooperator and location: Frobose Ranch, Oakdale  
 Planting Date: May 5, 1981

<sup>1</sup>S = short; M = medium; L = long.

<sup>2</sup>Subjective rating of 1-5 where 1 = poor and 5 = excellent emergence at approximately 28 days after planting.

<sup>3</sup>Subjective rating of 1-99 where 1 = none and 99 = 100% lodged.

Table 5. Performance Summary of Very Early Rice Experimental Lines and Varieties, Means of Three Locations in 1981 (Butte, Sacramento and Stanislaus counties).

1981 entry no.	Variety description	Grain type <sup>1</sup>	Grain yield @ 14% H <sub>2</sub> O (lbs/acre)	Duncan's test <sup>2</sup>	Grain moisture at harvest (%)	Seedling vigor 1-5 <sup>3</sup>	Days to 50% heading	Plant height (cm)	Lodging 1-99 <sup>4</sup>
3	S-201	S	9290	a	22.3	4.4	94	84	16
19	80-y-157	S	9110	ab	22.5	4.8	93	81	30
4	78-y-43	S	9000	ab	22.6	4.1	96	84	20
20	80-y-229	S	8670	abc	20.3	4.1	92	84	18
18	80-y-139	S	8600	abcd	21.3	4.4	90	82	32
9	79-y-117	M	8580	abcd	21.4	4.4	91	82	28
17	80-y-138	S	8580	abcd	19.8	4.2	89	84	40
10	80-y-23	S	8530	bcd	19.9	4.6	91	84	33
15	80-y-128	S	8510	bcd	21.0	4.7	91	83	33
5	78-y-119	S	8490	bcd	19.9	4.3	87	87	34
11	80-y-24	S	8460	bcd	20.0	4.3	88	84	33
8	79-y-103	M	8440	bcd	21.0	4.3	86	90	35
14	80-y-126	M	8400	bcde	21.3	4.4	91	82	32
22	80-y-321	L	8170	cdef	20.9	3.7	95	90	15
7	79-y-21	S	8060	cdefg	19.8	4.5	85	87	35
16	80-y-132	M	7950	cdefg	22.2	4.5	91	82	29
6	M-9	M	7890	cdefg	22.5	4.5	92	87	34
2	Earlrose	M	7830	defgh	19.2	4.8	91	114	77
21	80-y-251	L	7670	efgh	19.2	4.5	93	82	18
24	80-y-3838	L	7540	fgh	18.8	4.9	91	94	21
12	80-y-106	S	7530	fgh	19.1	4.3	83	79	35
13	80-y-119	M	7490	fgh	21.4	4.3	92	81	29
1	M-101	M	7320	gh	18.9	4.4	86	85	34
23	80-y-351	L	7130	h	18.0	4.7	94	81	1
GRAND MEAN			8220		20.5	4.4	91	85	30
CV			9.7		4.5	12.4	2.3	5.6	50.7
LSD (.05) for varieties			640		0.7	0.44	1.6	3.9	12.1
variety x location			1120			0.76	2.9	6.7	21.0

1S = short; M = medium; L = long.  
2Yields followed by the same letter do not differ at the 5% level of significance.  
3Subjective rating of 1-5 where 1 = poor and 5 = excellent seedling vigor at approximately 28 days after planting.  
4Subjective rating of 1-99 where 1 = none and 99 = 100% lodged.

Table 6. Grain Yield Summary of Very Early Maturing Rice Varieties and Experimental Lines by Location and Year. 1978-1981.

County location	Year	Varieties and Experimental Lines			
		Earlirose	M-9	M-101	S-201
Butte	1978	5320	7250	7400	--
	1979	7320	7470	8040	9050
	1980	6460	8870	8620	10010
	1981	6330	6710	7930	10060
Location mean		6360	7570	8000	9710
Sacramento	1978	6850	7480	7500	--
	1979	8730	8070	7620	8800
	1980	8470	7980	-- <sup>2</sup>	8680
	1981	7880	7700	5330	8020
Location mean		7980	7810	6820	8500
San Joaquin- Stanislaus	1978	7320	7150	6530	--
	1979	7830	7020	6630	6280
	1980	7000	5220	4770	5070
	1981	9290	9270	8690	9780
Location mean		7860	7170	6650	7040
Over location-years mean		7400	7520	7190	8420
Yield as percent Earlirose <sup>1</sup>		100	102	98	109
Number of tests		--	12	11	9

<sup>1</sup>Based on equivalent location-year means and may not reflect mean of all locations and years of Earlirose.

<sup>2</sup>M-101 destroyed by rats at this location and year.

Table 7. Performance Summary of Early Rice Experimental Lines and Varieties, Butte County, 1981

1981 entry no.	Variety description	Grain type <sup>1</sup>	Grain yield @ 14% H <sub>2</sub> O (lbs/acre)	Grain moisture at harvest (%)	Seedling vigor 1-5 <sup>2</sup>	Days to 50% heading	Plant height (cm)	Lodging 1-99 <sup>3</sup>
34	M-201	M	10540	21.7	4.8	89	96	25
31	78-y-43	S	10140	21.5	4.8	92	103	97
51	80-y-305	L	9980	18.6	4.5	85	96	4
44	80-y-175	S	9630	21.8	5.0	91	100	90
39	80-y-47	S	9480	22.7	5.0	98	104	74
30	S-201	S	9410	20.9	5.0	92	99	77
41	80-y-136	S	9350	21.8	5.0	93	106	99
47	80-y-237	S	9090	18.9	4.9	92	105	96
46	80-y-215	S	8970	23.3	5.0	96	110	96
48	80-y-239	S	8530	24.2	4.8	97	104	75
42	80-y-137	M	8490	21.3	5.0	91	102	98
32	Calmochi 202	WXY	8490	22.6	4.4	94	105	92
36	80-y-22	S	8390	22.4	5.0	94	103	91
35	79-y-117	M	8230	20.4	4.7	86	102	99
37	79-y-20	M	8070	22.8	5.0	92	106	98
43	80-y-154	S	8070	18.7	5.0	89	99	99
49	L-201	L	8000	19.3	4.5	85	111	90
40	80-y-126	M	7940	20.3	5.0	85	98	99
29	78-y-119	S	7680	19.6	4.6	84	104	99
50	80-y-51	L	7660	19.6	4.5	84	116	97
45	80-y-209	M	7560	22.6	5.0	93	109	98
33	M9	M	7510	21.1	5.0	89	109	99
38	78-y-36	M	7190	23.9	5.0	94	107	91
52	S6	S	6630	24.0	5.0	97	138	99
GRAND MEAN			8540	21.4	4.8	91	105	87
CV %			10.4	4.5	4.8	2.1	3.2	18.0
LSD (.05)			1260	1.4	0.32	2.6	4.7	22.0

Conducted by the Rice Experiment Station, Butte County, near Biggs.  
 Planting date: 2 reps planted May 11, 2 reps planted May 26. Data an average of all replications.

<sup>1</sup>S = short; M = medium; L = long; WXY = waxy.

<sup>2</sup>Subjective rating of 1-5 where 1 = poor and 5 = excellent emergence at approximately 28 days after planting.

<sup>3</sup>Subjective rating of 1-99 where 1 = none and 99 = 100% lodged.

Table 8. Performance Summary of Early Rice Experimental Lines and Varieties, Colusa County, 1981

1981 entry no.	Variety description	Grain type <sup>1</sup>	Grain yield @ 14% H <sub>2</sub> O (lbs/acre)	Grain moisture at harvest (%)	Seedling vigor 1-5 <sup>2</sup>	Days to 50% heading	Plant height (cm)	Lodging 1-99 <sup>3</sup>
43	80-y-154	S	9090	17.1	3.5	91	86	1
34	M-201	M	9090	21.8	4.3	92	83	1
47	80-y-237	S	9010	17.2	3.4	93	93	1
49	L-201	L	8840	17.0	3.3	92	98	1
30	S-201	S	8710	19.3	3.4	95	88	1
29	78-y-119	S	8640	20.2	3.6	88	98	1
31	78-y-43	S	8620	17.6	3.1	93	89	1
41	80-y-136	S	8610	20.4	3.5	97	93	1
50	80-y-51	L	8570	15.1	3.1	92	97	1
39	80-y-47	S	8560	23.3	3.5	97	94	1
48	80-y-239	S	8520	24.5	3.6	101	95	1
33	M9	M	8510	22.0	3.6	91	97	1
42	80-y-137	M	8420	22.8	3.8	98	96	1
38	78-y-36	M	8380	24.9	3.5	104	102	1
44	80-y-175	S	8300	19.9	3.5	93	91	1
40	80-y-126	M	8250	21.1	3.5	89	90	1
37	79-y-20	M	8220	22.8	3.6	93	99	1
46	80-y-215	S	8200	21.6	3.6	98	94	1
51	80-y-305	L	8120	17.1	3.4	93	92	1
35	79-y-117	M	8120	20.5	3.8	89	89	1
32	Calmochi 202	WXY	8020	23.6	3.5	100	97	1
36	80-y-22	S	7990	22.3	4.3	100	93	1
45	80-y-209	M	7940	17.4	3.5	92	93	1
52	S6	S	7530	21.8	3.5	100	124	1
GRAND MEAN			8430	20.5	3.6	95	94	1
CV			3.9	8.3	8.0	1.8	5.0	0
LSD (.05)			460	2.4	0.40	2.4	6.6	--

Cooperator and location: Dennis Ranch, Maxwell.

Planting date: April 29, 1981.

<sup>1</sup>S = short; M = medium; L = long; WXY = waxy.

<sup>2</sup>Subjective rating of 1-5 where 1 = poor and 5 = excellent emergence at approximately 28 days after planting.

<sup>3</sup>Subjective rating of 1-99 where 1 = none and 99 = 100% lodged.

Table 9. Performance Summary of Early Rice Experimental Lines and Varieties, Yolo County, 1981

1981 entry no.	Variety description	Grain type <sup>1</sup>	Grain yield @ 14% H <sub>2</sub> O (lbs/acre)	Grain moisture at harvest (%)	Seedling vigor 1-5 <sup>2</sup>	Days to 50% heading	Plant height (cm)	Lodging 1-99 <sup>3</sup>
50	80-y-51	L	9870	19.4	4.8	94	109	51
49	L-201	L	9680	19.5	5.0	94	100	9
34	M-201	M	9570	23.2	4.8	93	90	21
41	80-y-136	S	9490	22.0	5.0	94	92	50
30	S-201	M	9470	21.8	4.3	94	89	35
37	79-y-20	M	9310	22.6	4.5	93	91	35
29	78-y-119	S	9300	20.3	4.8	91	97	57
45	80-y-209	M	9180	21.5	4.8	94	95	71
48	80-y-239	S	9080	23.4	4.3	96	94	31
38	78-y-36	M	8940	23.8	4.3	97	94	43
47	80-y-237	S	8920	19.2	5.0	93	91	38
39	80-y-47	S	8900	22.6	4.5	94	95	74
52	S6	S	8870	23.7	4.0	97	122	85
46	80-y-215	S	8860	21.9	4.5	95	93	24
36	80-y-22	S	8760	22.8	5.0	95	97	84
33	M9	M	8670	22.6	4.3	93	92	64
42	80-y-137	M	8480	21.6	4.8	94	94	89
31	78-y-43	S	8470	22.2	4.0	94	92	28
43	80-y-154	S	8440	18.9	4.0	93	89	57
35	79-y-117	M	8260	21.4	4.5	92	87	15
40	80-y-126	M	8240	22.3	4.3	92	93	76
51	80-y-305	L	8010	18.9	4.0	94	92	22
44	80-y-175	S	7920	22.1	4.8	93	90	76
32	Calmochi 202	WXY	7720	23.0	3.5	96	101	92
GRAND MEAN			8850	21.7	4.5	94	9.5	51
CV %			11.4	5.0	10.1	1.0	4.1	71.6
LSD (.05)			ns	1.5	0.64	1.3	5.5	51.6

Cooperator and location: Bill and Don Geer, District 108.  
Planting date: May 7, 1981.

<sup>1</sup>S = short; M = medium; L = long; WXY = waxy.

<sup>2</sup>Subjective rating of 1-5 where 1 = poor and 5 = excellent emergence at approximately 28 days after planting.

<sup>3</sup>Subjective rating of 1-99 where 1 = none and 99 = 100% lodged.



Table 10. Performance Summary of Early Rice Experimental Lines and Varieties, Yuba County, 1981

1981 entry no.	Variety description	Grain type <sup>1</sup>	Grain yield @ 14% H <sub>2</sub> O (lbs/acre)	Grain moisture at harvest (%)	Days to 50% heading	Plant height (cm)	Lodging 1-99 <sup>2</sup>
50	80-y-51	L	10470	16.9	92	109	28
47	80-y-237	S	10130	18.9	90	88	76
48	80-y-239	S	10120	25.0	91	90	1
34	M-201	M	10050	23.1	91	85	1
43	80-y-154	S	10050	18.0	88	81	69
38	78-y-36	M	10040	24.6	93	94	1
41	80-y-136	S	9960	23.0	90	89	3
31	78-y-43	S	9920	21.8	90	87	2
46	80-y-215	S	9780	23.5	91	91	2
49	L-201	L	9750	18.3	92	100	27
30	S-201	S	9740	20.4	89	85	2
45	80-y-209	M	9540	21.6	91	89	18
39	80-y-47	S	9530	24.0	90	90	12
42	80-y-137	M	9410	21.4	90	90	2
36	80-y-22	S	9330	24.7	92	88	2
44	80-y-175	S	9330	20.6	90	86	3
29	78-y-119	S	9220	18.7	86	90	1
35	79-y-117	M	9180	21.3	88	87	24
40	80-y-126	M	9160	19.9	87	83	23
32	Calmochi 202	WXY	9140	24.4	91	91	2
33	M9	M	8960	22.3	89	89	91
37	79-y-20	M	8770	23.3	90	87	1
51	80-y-305	L	8560	17.4	89	88	1
52	S6	S	8490	25.3	91	119	92
GRAND MEAN			9530	21.6	90	91	20
CV			6.1	5.5	1.2	3.1	61.5
LSD (.05)			820	1.7	1.6	4.0	17.4

Cooperator and location: Bob Mohammed, District 10.  
Planting date: May 7, 1981.

<sup>1</sup>S = short; M = medium; L = long; WXY = waxy.

<sup>2</sup>Subjective rating of 1-99 where 1 = none and 99 = 100% lodged.

Table 11. Performance Summary of Early Rice Experimental Lines and Varieties, Means of Four Locations, 1981 (Butte, Colusa, Yolo and Yuba counties).

1981 entry no.	Variety description	Grain type <sup>1</sup>	Grain yield @ 14% H <sub>2</sub> O (lbs/acre)	Duncan's test <sup>2</sup>	Grain moisture at harvest (%)	Seedling vigor 1-53	Days to 50% heading	Plant height (cm)	Lodging 1-994
34	78-y-186	M	9810	a	22.4	4.6	91	88	12
41	80-y-136	S	9350	ab	21.8	4.5	93	95	38
30	S-201	S	9330	abc	20.6	4.2	93	90	29
47	80-y-237	S	9290	abcd	18.5	4.4	92	94	53
31	78-y-43	S	9290	abcd	20.8	4.0	92	92	32
50	80-y-51	L	9140	bcde	17.7	4.1	90	108	44
39	80-y-47	S	9120	bcde	23.1	4.3	95	96	40
49	L-201	L	9070	bcdef	18.5	4.3	91	102	32
48	80-y-239	S	9060	bcdef	24.3	4.2	96	96	27
46	80-y-215	S	8950	bcdefg	22.6	4.4	95	97	31
43	80-y-154	S	8910	bcdefg	18.2	4.2	90	89	57
44	80-y-175	S	8800	bcdefg	21.1	4.4	92	92	42
29	78-y-119	S	8710	cdefg	19.7	4.3	87	97	40
42	80-y-137	M	8700	defg	21.8	4.5	93	96	48
51	80-y-305	L	8670	defg	18.0	4.0	90	92	7
38	78-y-36	M	8640	efg	24.3	4.3	97	99	34
36	80-y-22	S	8620	efg	23.0	4.8	95	95	45
37	79-y-20	M	8590	efg	22.9	4.4	92	96	34
45	80-y-209	M	8560	efg	20.8	4.4	92	96	47
35	79-y-117	M	8450	fgh	20.9	4.3	89	91	35
33	M9	M	8420	gh	22.0	4.3	90	97	64
40	80-y-126	M	8400	gh	20.9	4.2	88	91	50
32	Calmochi 202	WXY	8340	gh	23.4	3.8	95	98	47
52	S6	S	7880	h	23.7	4.2	96	126	70
GRAND MEAN			8840		21.3	4.3	92	96	40
CV			8.5		5.9	7.8	1.6	3.9	52.4
LSD (.05) for varieties			520		0.9	0.27	1.0	2.6	14.5
variety X location			1050			0.47	2.0	5.2	29.0

<sup>1</sup>S = short; M = medium; L = long; WXY = waxy.  
<sup>2</sup>Yields followed by the same letter do not differ at the 5% level of significance.  
<sup>3</sup>Subjective rating of 1-5 where 1 = poor and 5 = excellent emergence at approximately 28 days after planting.  
<sup>4</sup>Subjective rating of 1-99 where 1 = none and 99 = 100% lodged.

Table 12. Grain Yield Summary of Early Maturing Rice Varieties and Experimental Lines by Location and Year. 1977-1981.

County location	Year	Varieties and Experimental Lines					
		S-6	M-9	L-201	S-201	Calmochi 202	78-y-186 M-201
Butte	1977	6840	8880	9490	--	--	--
	1978	6030	7790	7990	7970	--	--
	1979	7200	8370	9400	8430	9020	9740
	1980	6880	8380	10080	9730	9280	10080
	1981	6630	7510	8000	9410	8490	10540
Location mean		6720	8190	8990	8890	8930	10120
Yuba	1977	6920	7340	7160	--	--	--
	1978	5980	6630	6000	6290	--	--
	1979	7450	8640	6250	8720	7600	8050
	1980	5330	5070	7180	5370	4950	5850
	1981	8490	8960	9750	9740	9140	10050
Location mean		6830	7330	7270	7530	7230	7980
Yolo	1977	7150	8120	8280	--	--	--
	1978	7810	8150	8120	8350	--	--
	1979	8700	9990	9760	10560	10070	10550
	1980	7360	8750	8970	9360	7710	8440
	1981	8870	8670	9680	9470	7720	9570
Location mean		7980	8740	8960	9430	8500	9520
Over location-years mean		7180	8080	8410	8620	8220	9210
Yield as percent of S-6 <sup>1</sup>		100	113	117	119	111	124
Number of tests		--	15	15	12	9	9

<sup>1</sup>Based on equivalent location-year means and may not reflect all locations and years of S-6.

Table 13. Performance Summary of Late Rice Experimental Lines and Varieties, Butte County, 1981

1981 entry no.	Variety description	Grain type <sup>1</sup>	Grain yield @ 14% H <sub>2</sub> O (lbs/acre)	Grain moisture at harvest (%)	Seedling vigor 1-5 <sup>2</sup>	Days to 50% heading	Plant height (cm)	Lodging 1-99 <sup>3</sup>
67	79-y-402	M	10630	18.4	5.0	109	105	1
77	80-y-443	M	10300	18.3	4.9	108	109	2
79	80-y-455	M	10270	18.6	5.0	106	110	43
64	78-y-73	M	10260	20.2	5.0	109	107	5
78	80-y-448	M	10240	18.9	5.0	108	107	5
73	80-y-393	M	10180	18.7	5.0	107	107	25
61	M7	M	10130	19.9	5.0	112	104	1
65	78-413	M	10070	18.4	5.0	105	104	2
62	M-401	M	10030	19.1	5.0	108	106	50
68	79-y-423	M	9940	18.3	4.9	105	104	2
69	79-y-438	S	9880	21.0	4.8	112	97	1
75	80-y-426	M	9840	18.0	5.0	106	109	23
76	80-y-432	M	9830	18.4	5.0	108	104	11
80	Calrose 76 C	M	9740	18.4	4.8	111	102	1
63	M-302	M	9680	17.3	5.0	103	102	22
66	78-y-392	M	9560	18.7	5.0	109	105	7
70	80-y-186	M	9490	17.7	4.9	99	104	44
72	80-y-384	M	9460	18.5	5.0	111	103	1
82	80-y-483	L	9200	14.1	5.0	97	91	1
81	80-y-82	L	9180	14.9	5.0	97	90	1
74	80-y-394	M	8830	18.6	5.0	106	108	47
83	80-y-84-1	L	8760	14.7	5.0	99	96	1
84	80-y-307-1	L	8610	13.2	4.7	94	86	1
71	80-y-373	M	8250	18.0	5.0	96	101	61
GRAND MEAN			9680	17.9	4.9	105	102	15
CV			9.2	4.5	2.9	1.8	3.1	153.1
LSD (.05)			1250	1.1		ns	2.6	4.5 32.1

Conducted by the Rice Experiment Station, Butte County, near Biggs.  
Planting date: May 9, 1981.

<sup>1</sup>S = short; M = medium; L = long.

<sup>2</sup>Subjective rating of 1-5 where 1 = poor and 5 = excellent emergence at approximately 28 days after planting.

<sup>3</sup>Subjective rating of 1-99 where 1 = none and 99 = 100% lodged.

Table 14. Performance Summary of Late Rice Experimental Lines and Varieties, Glenn County, 1981

1981 entry no.	Variety description	Grain type <sup>1</sup>	Grain yield @ 14% H <sub>2</sub> O (lbs/acre)	Grain moisture at harvest (%)	Seedling vigor 1-5 <sup>2</sup>	Days to 50% heading	Plant height (cm)	Lodging 1-99 <sup>3</sup>
79	80-y-455	M	9990	25.0	4.0	121	110	50
76	80-y-432	M	9960	24.0	3.9	119	101	3
82	80-y-483	L	9930	20.1	3.8	106	97	6
78	80-y-448	M	9920	24.2	3.6	119	102	6
62	M-401	M	9910	25.0	4.0	120	104	70
73	80-y-393	M	9860	23.8	4.0	117	107	40
66	78-y-392	M	9850	24.8	4.0	120	106	30
68	79-y-423	M	9830	24.5	4.0	118	99	41
67	79-y-402	M	9730	24.6	4.0	119	101	18
75	80-y-426	M	9680	23.2	3.6	115	107	15
72	80-y-384	M	9530	23.7	4.0	122	105	6
61	M7 CK	M	9530	24.2	3.4	122	101	1
64	78-y-73	M	9470	24.2	3.8	118	105	28
77	80-y-443	M	9460	24.0	3.8	120	106	24
69	79-y-438	S	9450	25.6	3.9	123	99	1
80	Calrose 76C	M	9390	23.4	3.6	124	105	6
83	80-y-84-1	L	9260	20.5	3.5	107	100	3
81	80-y-82	L	9240	20.0	4.0	111	88	1
65	78-y-413	M	9070	24.6	4.0	118	103	3
74	80-y-394	M	9000	24.4	3.9	118	107	31
63	M-302	M	8920	23.3	3.9	109	101	33
71	80-y-373	M	8890	21.2	3.9	104	96	53
84	80-y-307-1	L	8750	18.5	3.6	104	93	10
70	80-y-186	M	8730	21.8	3.9	107	97	33
85	NFD-76-5	M	8380	24.2	3.4	124	103	10
GRAND MEAN			9430	23.3	3.8	116	102	20
CV			5.7	1.4	6.1	0.8	4.6	76.7
LSD (.05)			760	0.5	0.32	1.3	6.6	21.8

Cooperator and location: Wylie Farming, Norman.  
Planting date: April 17, 1981.

<sup>1</sup>S = short; M = medium; L = long.

<sup>2</sup>Subjective rating of 1-5 where 1 = poor and 5 = excellent emergence at approximately 28 days after planting.

<sup>3</sup>Subjective rating of 1-99 where 1 = none and 99 = 100% lodged.

Table 15. Performance Summary of Late Rice Experimental Lines and Varieties, Merced County, 1981

1981 entry no.	Variety description	Grain type <sup>1</sup>	Grain yield @ 14% H <sub>2</sub> O (lbs/acre)	Grain moisture at harvest (%)	Days to 50% heading	Plant height (cm)	Lodging 1-99 <sup>2</sup>
66	78-y-392	M	8730	18.7	109	91	20
75	80-y-426	M	8640	17.4	104	90	5
79	80-y-455	M	8410	18.6	108	98	66
77	80-y-443	M	8400	18.3	108	89	14
81	80-y-82	L	8360	16.9	112	86	1
78	80-y-448	M	8250	19.7	105	91	13
73	80-y-393	M	8230	18.7	108	86	4
67	79-y-402	M	8210	16.7	106	89	2
76	80-y-432	M	8020	17.5	110	85	2
69	79-y-438	S	7940	19.3	110	85	1
70	80-y-186	M	7730	16.0	109	85	1
80	Calrose 76C	M	7700	16.1	108	86	2
71	80-y-373	M	7670	19.4	105	83	12
62	M-401	M	7560	17.3	107	94	8
74	80-y-394	M	7560	18.7	106	91	2
64	78-y-73	M	7550	19.6	108	90	2
68	79-y-423	M	7400	18.7	106	93	10
84	80-y-307-1	L	7380	14.0	104	79	1
63	M-302	M	7180	16.9	103	86	5
61	M7	M	6920	17.4	106	88	2
65	78-y-413	M	6900	19.2	107	88	2
82	80-y-483	L	6870	14.6	106	83	1
83	80-y-84-1	L	6580	14.4	102	84	1
72	80-y-384	M	6520	16.1	107	81	1
GRAND MEAN			7700	17.5	107	87	7
CV			10.1	7.1	0.8	5.7	144.7
LSD (.05)			1090	1.8	1.2	7.0	14.9

Cooperator and location: O'Banion Ranch  
 Planting date: May 6, 1981.

<sup>1</sup>S = short; M = medium; L = long.

<sup>2</sup>Subjective rating of 1-99 where 1 = none and 99 = 100% lodged.



Table 16. Performance Summary of Late Rice Experimental Lines and Varieties, Sutter County, 1981

1981 entry no.	Variety description	Grain type <sup>1</sup>	Grain yield @ 14% H <sub>2</sub> O (lbs/acre)	Grain moisture at harvest (%)	Seedling vigor 1-5 <sup>2</sup>	Days to 50% heading	Plant height (cm)	Lodging 1-99 <sup>3</sup>
64	78-y-73	M	11740	20.7	4.5	111	99	13
62	M-401	M	11620	20.5	4.0	113	98	33
75	80-y-426	M	11530	19.7	4.5	109	97	18
68	79-y-423	M	11500	19.5	4.5	109	96	1
77	80-y-443	M	11500	18.7	4.3	112	96	6
76	80-y-432	M	11450	18.9	4.3	113	94	1
65	78-y-413	M	11390	20.3	4.8	107	94	1
79	80-y-455	M	11280	21.9	4.8	112	105	78
74	80-y-394	M	11280	21.0	4.3	109	102	39
73	80-y-393	M	11200	20.0	4.5	110	99	24
71	80-y-373	M	11170	20.0	4.0	104	97	27
66	78-y-392	M	11150	19.1	4.3	113	98	1
67	79-y-402	M	11070	19.5	4.8	114	98	2
78	80-y-448	M	11070	20.2	4.8	112	98	20
69	79-y-438	S	10920	19.8	4.5	114	89	1
70	80-y-186	M	10820	17.6	4.8	103	91	11
81	80-y-82	L	10690	17.1	4.0	110	81	1
63	M-302	M	10550	18.9	4.0	105	95	8
80	Calrose 76 C	M	10360	16.9	4.0	115	95	1
72	80-y-384	M	10350	17.6	5.0	114	95	1
83	80-y-841	L	10300	16.6	3.8	103	94	1
61	M7 CK	M	10030	19.1	4.3	114	94	1
84	80-y-307-1	L	9740	16.0	3.8	102	82	1
82	80-y-483	L	9710	16.4	4.0	103	85	1
85	NFD-76-5	M	8120	18.1	3.0	115	95	1
GRAND MEAN			10760	18.8	4.2	110	95	11
CV			4.8	4.5	10.1	1.4	2.9	163.0
LSD (.05)			730	1.2	0.60	2.1	3.9	25.7

Cooperator and location: Juisti Ranch, Sutter Basin.  
 Planting date: April 29, 1981.

<sup>1</sup>S = short; M = medium; L = long.

<sup>2</sup>Subjective rating of 1-5 where 1 = poor and 5 = excellent emergence at approximately 28 days after planting.

<sup>3</sup>Subjective rating of 1-99 where 1 = none and 99 = 100% lodged.

Table 17. Performance Summary of Late Rice Experimental Lines and Varieties, Means of Four Locations 1981 (Butte, Glenn, Merced and Sutter counties).

1981 entry no.	Variety description	Grain type <sup>1</sup>	Grain yield @ 14% H <sub>2</sub> O (lbs/acre)	Duncan's test <sup>2</sup>	Grain moisture at harvest (%)	Seedling vigor 1-53	Days to 50% heading	Plant height (cm)	Lodging 1-994
79	80-y-455	S	9990	a	21.0	4.6	112	106	59
75	80-y-426	M	9920	a	19.6	4.4	108	101	15
77	80-y-443	M	9920	a	19.8	4.3	112	100	11
67	79-y-402	M	9910	ab	19.8	4.6	112	98	6
78	80-y-448	M	9870	abc	20.7	4.5	111	99	11
73	80-y-393	M	9870	abc	20.3	4.5	110	100	23
66	78-y-392	M	9820	abcd	20.3	4.4	113	100	14
76	80-y-432	M	9820	abcd	19.7	4.4	112	96	4
62	M-401	M	9780	abcde	20.5	4.3	112	100	40
64	78-y-73	M	9750	abcde	21.2	4.4	111	100	12
68	79-y-423	M	9670	abcde	20.2	4.5	110	98	13
69	79-y-438	S	9550	abcdef	21.4	4.4	115	93	1
81	80-y-82	L	9370	abcdefg	17.2	4.3	107	86	1
65	78-y-413	M	9360	abcdefg	20.6	4.6	109	97	2
80	Calrose 76C	M	9300	abcdefgh	18.7	4.2	114	97	2
70	80-y-186	M	9190	bcdefgh	18.3	4.5	104	94	22
74	80-y-394	M	9170	cdefgh	20.7	4.4	110	102	30
61	M7	M	9150	cdefgh	20.1	4.2	114	97	1
63	M-302	M	9080	efgh	19.1	4.3	105	96	17
71	80-y-373	M	9000	fgh	19.6	4.3	102	94	38
72	80-y-384	M	8970	fgh	19.0	4.7	113	96	2
82	80-y-483	L	8930	fgh	16.3	4.2	103	89	2
83	80-y-841-1	L	8720	gh	16.6	4.1	103	94	2
84	80-y-307-1	L	8620	h	15.4	4.0	101	85	3
GRAND MEAN			9450		19.4	4.4	109	97	14
CV %			7.4		4.5	6.8	1.2	4.1	126.6
LSD (.05) for varieties			486		0.6	0.24	1.0	2.7	12.2
varieties x location			970			.4	1.9	5.5	24.4

1S = short; M = medium; L = long.  
2Yields followed by the same letter do not differ at the 5% level of significance.  
3Subjective rating of 1-5 where 1 = poor and 5 = excellent emergence at approximately 28 days after planting.  
4Subjective rating of 1-99 where 1 = none and 99 = 100% lodged.

Table 18. Grain Yield Summary of Late Maturing Rice Varieties and Experimental Lines by Location and Year.

County location	Year	Varieties and Experimental Lines			
		M-7	Calrose 76	M-302	M-401
Butte	1977	9170	8800	--	--
	1978	5340	5790	7160	5970
	1979	8040	7820	7650	7310
	1980	9690	9320	9170	10570
	1981	10130	9740	9680	10030
Location mean		8470	8290	8410	8470
Glenn	1977	7420	7880	--	--
	1978	7540	6440	6920	8070
	1979	9380	9120	9540	11240
	1980	9260	8540	9390	10110
	1981	9530	9390	8920	9910
Location mean		8630	8270	8690	9830
Merced	1977	--	--	--	--
	1978	7130	6890	7480	7440
	1979	7220	6780	6250	7180
	1980	--	--	--	--
	1981	6920	7700	7180	7560
Location mean		7090	7120	6970	7390
Sutter	1977	8720	8740	--	--
	1978	8460	8210	8340	7700
	1979	8130	7610	7630	8000
	1980	9560	8990	9370	9430
	1981	10030	10360	10550	11620
Location mean		8980	8780	8970	9190
Over location-years mean		8430	8230	9080	8810
Yield as percent of M-7 <sup>1</sup>		100	98	99	105
Number of tests		--	18	15	15

<sup>1</sup>Based on equivalent location-year means and may not reflect all locations and years of M-7.