



AGRONOMY PROGRESS REPORT

Agricultural Experiment Station

Cooperative Extension

January 2020 # 328

CALIFORNIA RICE VARIETIES

DESCRIPTION AND PERFORMANCE SUMMARY OF THE 2019 AND MULTI-YEAR STATEWIDE RICE VARIETY TESTS IN CALIFORNIA

B. A. Linqvist, W. B. Brim-DeForest, L. A. Espino, M. M. Leinfelder-Miles, and J. R. Stogsdill*

University of California Cooperative Extension rice variety evaluation tests were conducted in the Sacramento Valley in 2019. This program, a cooperative effort involving the California Cooperative Rice Research Foundation, Inc. (CCRRF) 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 CCRRF 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.

California rice acres decreased in 2019 with a total of 498,000 acres planted and 496,000 acres harvested when compared to 2018 with 506,000 acres planted and 504,000 acres harvested. The estimated statewide yield was 8,450 lbs./acre, a decrease from 2018 (8,620 lbs./acre).

EXPERIMENTAL PROCEDURE

Cultivars and Locations

Field experiments were conducted at eight farm locations in the rice growing counties of California. Three classes of tests were conducted at each site: 1) Four-replication advanced tests consisting of advanced breeding lines and commercial varieties; 2) Two-replication advance test consisting of advance breeding lines and commercial varieties; and 3) Two-replication preliminary tests consisting of new lines to be evaluated on a statewide basis.

* Extension Agronomist, Department of Plant Sciences, UC Cooperative Extension Farm Advisors for (Sutter/Yuba, Placer/Sacramento), (Butte/Glenn), (San Joaquin), Counties, respectively, and Staff Research Associate, Department of Plant Sciences, UC Davis.

All tests were conducted in three groups, Very Early Zone 3, Early Zone 2, and Intermediate/Late Zone 1. Advanced and preliminary lines from the three groups were also evaluated at the Rice Experiment Station (RES), Biggs, California, for a total of 13 statewide tests. The four-replication advanced tests were arranged in randomized complete block designs, the two-replication advance test were arranged in randomized complete block designs, and the two-replication preliminary were planted in randomized complete block designs. Seed for the tests was provided by the RES. Groups, test locations, and commercial standards in each test were as follows:

Very Early Zone 3

Ten commercial varieties and four advanced breeding lines were evaluated in the four-replication advanced test at each of the following locations.

	Date Planted	Date Harvested
• Butte County (RES)	05/13	09/25
• Sutter County (Lauppe)	05/15	10/8
• Yolo County (Gallagher)	05/20	10/15
• Yuba County (Bosworth)	06/03	10/21
• South Yolo County (Rehman)	05/15	10/17

Commercial varieties in the four-replication advanced test included S102, S202, CA201, M105, M206, M209, A202, CJ201, L206, and L207. The two-replication advanced test included fourteen entries (4 commercial varieties and 10 breeding lines). The two-replication preliminary tests included 28 entries (four commercial varieties as checks and 24 preliminary breeding lines).

Early Maturity Zone 2

Ten commercial varieties and four advanced breeding lines were evaluated in the four-replication advanced test at each of the following locations.

	Date Planted	Date Harvested
• Butte County (RES)	05/13	09/24
• Butte County (Larrabee)	05/11	10/02
• Colusa County (Dennis)	05/03	09/23

The four-replication advanced test included commercial varieties S102, S202, CA201, M105, M206, M209, A202, CJ201, L206, and L207. The two-replication advance test included four commercial varieties and ten breeding lines. The two-replication preliminary evaluated four commercial varieties and 24 preliminary lines. All advanced and preliminary experimental lines were entries from the RES breeding program

Intermediate-Late Zone 3

Ten commercial varieties and four advanced lines were evaluated in the four-replication advanced test at each of the locations listed below.

	Date Planted	Date Harvested
• Butte County (RES)	05/13	09/25
• Glenn County (Wiley)	05/13	10/16
• Butte County (Schohr)	05/11	09/24

Commercial varieties in the four-replication advanced test included S102, S202, CA201, M105, M206, M209, A202, CJ201, L206, and L207. The two-replication advanced test included fourteen entries (4 commercial varieties and 10 breeding lines). The two-replication preliminary tests included 28 entries (four commercial varieties as checks and 24 preliminary breeding lines).

Planting and Harvesting

Individual plots were water-seeded by hand at a planting rate of 150 lbs./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 of crop emergence through 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 at time of harvest on a scale of 0 (no lodging) to 100 (all plants completely lodged).

Variety trial harvest was completed in late October. The University of California Davis' ALMACO combine harvested most of the trials with the Rice Experiment Station's ALMACO combine harvesting the trials at the Butte County (RES) locations. Harvested areas were 155ft² (UCD ALMACO) and 140ft² (RES ALMACO). Grain moisture was assessed at harvest and yields were adjusted to 14% moisture.

SUMMARY OF THE VERY EARLY ZONE 3 RICE VARIETY TESTS

A five-location combined yield and agronomic performance summary is given in Table 3. Agronomic performance data for individual entries at each Very Early Zone 3 location are presented in Tables 4-8. Entries are ranked by grain yield with the highest yielding entry appearing first. A 5-year yield summary of selected Very Early commercial rice varieties by location and year (2015-2019) is presented in Table 9.

Grain yields in the four-replication advanced tests averaged 8,790 overall, 9,260 lbs./ac at Biggs-RES, 9,620 lbs./ac at Sutter, 9,220 lbs./ac at Yolo, 8,470 lbs./ac at South Yolo, 7,390 lbs./ac at Yuba (Tables 3-8). The three highest yielding entries, on average, were long grain line 14Y1006, long grain L207, and short grain S202 (10,170, 9,590, and 9,380 lbs./ac respectively). The top yielding commercial varieties L207, S202, L206 and M105 ranked second, third, fourth, and fifth respectively. In the two-replication advanced test the highest yielding experimental line was 18Y117

at 9,400 lbs./ac, and the top commercial variety was CM203 at 9,360 lbs./ac. Averaged across five locations, cultivar yields in the preliminary tests ranged from 9,460 to 6,190 lbs./ac (Table 3). The average grain moisture at harvest was 15.8%, average lodging 38%, average days to 50% heading 88 days, average seedling vigor 4.8, and average plant height 95 cm. Field preparation and planting were mixed this year with most of planting occurring before May 15th however heavy rain in the middle of May caused fields to be delayed. Both the Yolo and Yuba trials were affected by rain. Harvest was completed within the normal time frame but yields in the four-replication advance test was down 6.8% from 2018.

Table 9 is a 5-year summary of very early commercial rice variety yields compared by locations and over years. Over the 5-year period and across locations M105, M206, and L206 were the three highest yielding varieties (Table 9).

SUMMARY OF THE EARLY ZONE 2 RICE VARIETY TESTS

A three-location combined yield summary are presented in Table 10. Agronomic performance data for individual entries at each location are presented in Tables 11-13. Entries are ranked by grain yield with the highest yielding entry appearing first. A 5-year yield summary of selected early commercial rice varieties by location and year (2015-2019) is found in Table 14.

Yields in the four-replication advanced line tests averaged 9,540 lbs./ac overall, 9,530 lbs./ac at the RES, 9,460 lbs./ac at Butte, and 9,620 lbs./ac at Colusa (Tables 11-13). Advanced long grain 14Y1006 was the highest yielding entry (11,380 lbs./ac) when averaged over three locations in 2019 (Table 10). Long grain L207, short grain S202, and medium grain 12Y2175 yielded second, third, and fourth respectively. The yield of commercial varieties M105, A202, CJ201, M206, and L206 ranked fifth, sixth, seventh, eighth, and ninth across all locations (Table 10). Average days to 50% heading was 86 days. The commercial standard M206 averaged 86 days over three locations. In the preliminary tests M210 was the highest yielding commercial variety with thirteen experimental lines yielding higher.

Table 14 is a 5-year summary of early commercial rice variety yields compared by locations and over years. L207 was the highest yielding commercial variety (10,340 lbs./ac) followed by M209 (9,520 lbs./ac) and M206 (9,410 lbs./ac) when averaged over the last 5 years and across locations.

SUMMARY OF THE INTERMEDIATE-LATE RICE VARIETY TESTS

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

A three-location combined yield summary is given in Table 15. Agronomic performance data for individual entries at each location are presented in Tables 16-18. Entries are ranked by grain yield with the highest yielding entry appearing first. A 5-year yield summary of selected intermediate-late commercial rice varieties by location and year (2015-2019) is found in Table 19.

Yields in the four-replication advanced line tests averaged 9,450 lbs./ac overall, 9,720 lbs./ac at the RES, 9,090 lbs./ac at Butte, and 9,730 lbs./ac at Glenn (Tables 16-18). The 2019 advanced

over location average yield decreased 450 lbs./ac (4.6%) compared to the 2018 average. In the four-replication advanced tests, S202 was the highest yielding commercial variety (10,430 lbs./ac), ranking second overall. L207 and L206 were the next highest yielding commercial varieties across locations, ranking third and fourth respectively (Table 15). The long grain entry 14Y1006 was the highest yielding advanced entry across all locations at 10,700 lbs./ac. Average days to 50% heading was 87. Medium grain M209 was the latest variety at 92 days to reach 50% heading at all locations.

Averaged over the last 5 years and across locations, L206 is the highest yielding (9,490 lbs./ac) commercial variety followed by M209 at 9,370 lbs./ac (Table 19).

ACKNOWLEDGEMENTS

The authors and the RES plant breeders are indebted to the Rice Research Board for partial funding of this program, and to the rice growers who cooperated in this on-farm research.

Table 1. Characteristics of Public California Rice Varieties-2019

CHARACTERISTICS OF PUBLIC CALIFORNIA RICE VARIETIES - 2019						
Grain Type	Maturity	Year Seed Widely Available	Stem Rot Score ¹	Seedling Vigor ²	Comments	
Short Grain						
S-102 ⁶	Very Early ³	1998	5.6	4.3	Very high yield potential. Good resistance to blanking with a very large grain. Rough leaves and hulls, grain dries down rapidly during ripening. Susceptible to stem rot.	
Medium Grains						
M-104 ^{6,7}	Very Early ³	2002	5.4	4.4	Replacement for M-103 in 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-105 ^{6,7}	Very Early	2013	4.8	4.2	New release, earlier maturing than M-206 but not as early as M-104. The yield potential of M-105 is less than M-206 but greater than M-104. Very high stable milling yields. Not as cold tolerant as M-104 as a choice for cold areas or late plantings.	
M-205 ^{6,7}	Early	2002	4.9	4.1	Very high yield potential. Primary adaptation area west of Highway 70 and north of Highway 20. Susceptible to blanking. Matures 4-7 days later than M-202. Improved milling yields and lodging tolerance relative to M-202. Not recommended for Escalon, Delta region or other cool areas.	
M-206 ^{6,7}	Very Early to Early	2005	4.8	4.3	Very high yield potential. Adapted to entire rice area. Comparable to other medium grains. Improved resistance to blanking and improved milling yield. Four days later than M-104 and four days earlier than M-202. Avoid late planting in the Escalon/Delta areas.	
M-208 ^{6,7}	Early	2008	6.6	4.3	Calrose cultivar released with IG-1 blast resistance. Released for blast problems areas of Glenn and Colusa Counties. Primarily adapted to north of the Yolo-Colusa County line and west of Hwy 70. Production practices comparable to M-206.	
M-209 ^{6,7}	Early	2015	4.9	4.9	Very high yield potential. Heads 5-6 days later than M-206. Has improved stem rot and aggregate sheath spot compared to M-206 and M-208. Judged to be superior in grain quality. Production practices comparable to M-206. Avoid late planting and cool production areas to reduce blanking.	
Long Grains						
L-206 ^{6,7}	Very Early to Early	2008	5.5	4.4	Conventional long grain with improved cooking quality. Very high yield potential. Four days earlier than L-205 and M-202. Considerably shorter than L-205 and M-202. Average head rice yield 62%. Adapted to most areas except in coldest and warmest rice growing regions. Harvest at 17 - 18% grain moisture.	
L-207 ^{6,7}	Early	2018	4.8	4.6	It has shown significant advantages over L-206 in yield potential and milling. Taller plants and head four days later than L-206. Not adapted to cold regions.	
Premium Quality						
M-401	Late	1983	5.1	4.3	<i>Premium quality</i> 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 ^{6,7}	Late	2001	4.7	4.2	<i>Premium quality</i> 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 ^{5,6,7}	Early	2001	6.0	5.0	<i>Premium quality</i> 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.	
Calhikari-202 ^{5,6,7}	Early	2012	4.8	4.8	<i>Premium quality</i> short grain developed for the Japanese premium short-grain market. Similar to CH-201 in most characteristics but has higher grain and head rice yields and improved milling quality. Not recommended for cold locations. Cold temperatures delay maturity and increases blanking. Use low nitrogen to maximize market quality.	
Specialty Rices⁵						
Calmochi-101 ⁵	Very Early ^{3,4}	1987	5.3	4.2	Glutinous (sweet, waxy) rice. Excellent blanking resistance. Has rough leaves and hulls, no awns. Grain dries down rapidly during ripening.	
Calmochi-203 ^{5,6,7}	Early ⁴	2015	5.3	4.9	Glutinous (sweet, waxy) rice. Less blanking resistance than CA-101. Has glabrous (smooth) hulls. shape. Yields significantly higher, has larger seed and matures later than CA-101. Not adapted to cool temperature areas.	
Calmati-202 ^{5,6,7}	Early ⁴	2008	6.0	4.4	A basmati type long grain with improved cooking quality and more slender grain. Excellent seedling vigor. Yield potential is 10% lower than CT-201. Pubescent leaves and hull. Average milling yield 58 - 60%. Susceptible to blanking and should not be grown in cool areas. Avoid excessive nitrogen. Harvest at 17-18% grain moisture.	
A-202 ^{6,7}	Early ⁴	2014	4.6	4.7	An aromatic smooth hulled long grain with very high yield potential and high head rice yield. Improved seedling vigor and similar lodging compared to A-301. Susceptible to blanking and should not be grown in cool areas. Is a replacement for A-301 and is well adapted for organic production systems.	

1 Average stem rot score over last five 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.

5 These varieties are considered varieties of Commercial Impact (Tier 1) and are subject to production regulations.

6 Protected in the Plant Variety Protection Act and only to be sold as a class of certified seed.

7 Utility Patent

Table 2. 2019 Weather Data - Daily Maximums and Minimums (°F)

	Sutter (VE Z3)		Yolo (VE Z3)		South Yolo (VE Z3)		Yuba (VE Z3)		Butte (E Z2)		Colusa (E Z2)		Butte (HL Z1)		Glenn (HL Z1)			
	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max		
May 01																		
May 02																		
May 03											67	82						
May 04											57	81						
May 05											52	81						
May 06											53	75						
May 07											53	80						
May 08											55	84						
May 09											58	85						
May 10											61	86						
May 11									71	82								
May 12									58	84								
May 13									57	82			63	87		69	82	
May 14									56	73		55	73		52	80	56	73
May 15	59	67			59	65			58	64		57	63		54	77	58	64
May 16	53	61			51	61			53	61		52	61		54	69	52	62
May 17	51	68			50	69			52	67		50	67		59	80	49	67
May 18	51	58			50	59			51	59		51	58		57	86	51	57
May 19	48	59			47	59			51	59		50	58		58	83	49	59
May 20	47	68	54	68	45	68			49	67		47	69		53	76	48	69
May 21	53	67	50	67	50	67			52	68		54	68		55	83	53	71
May 22	51	74	50	74	50	75			50	74		50	77		57	81	57	77
May 23	59	77	60	78	58	77			60	79		62	80		57	76	57	79
May 24	57	75	55	80	54	75			59	76		58	76		53	80	58	77
May 25	55	72	54	73	54	72			58	72		56	73		55	65	58	73
May 26	52	62	51	62	50	62			51	62		52	64		57	73	53	66
May 27	54	72	52	71	51	70			55	69		55	69		59	87	56	69
May 28	55	82	53	81	51	82			58	83		60	83		65	93	60	83
May 29	59	85	57	84	56	87			63	83		63	84		67	95	64	84
May 30	57	81	56	83	54	80			64	82		64	81		57	77	63	80
May 31	62	86	62	87	55	87			60	88		62	87		53	73	60	88
Jun 01	67	90	67	90	58	89												
Jun 02	59	84	59	88	55	83												
Jun 03	59	89	60	90	55	88												
Jun 04	66	95	67	96	59	95												
Jun 05	72	95	74	96	65	96												
Jun 06	61	83	62	86	57	82												
Jun 07	54	77	58	77	50	76												
Jun 08	59	82	59	81	60	82												
Jun 09	59	89	61	89	63	89												
Jun 10	67	100	65	98	66	96												
Jun 11	73	102	71	100	68	101												
Jun 12	75	99	74	100	68	100												
Jun 13	64	87	64	92	60	86												
Jun 14	58	86	58	89	55	85												
Jun 15	56	78	56	83	54	78												
Jun 16	55	85	56	89	51	85												
Jun 17	59	94	62	93	56	90												
Jun 18	68	97	71	99	60	97												
Jun 19	63	92	65	96	58	91												
Jun 20	58	84	59	89	57	84												
Jun 21	60	82	65	84	56	84												
Jun 22	61	85	65	88	58	88												
Jun 23	62	93	63	92	58	92												
Jun 24	62	90	62	91	58	89												
Jun 25	61	86	61	90	58	86												
Jun 26	58	77	59	81	55	77												
Jun 27	54	79	54	78	51	76												
Jun 28	60	84	60	83	58	83												
Jun 29	52	87	54	85	53	85												
Jun 30	59	86	58	86	56	86												
Jul 01	57	84	56	86	54	84												
Jul 02	58	85	57	85	55	85												
Jul 03	59	85	59	86	56	85												
Jul 04	58	89	59	90	55	89												
Jul 05	62	89	62	91	57	89												
Jul 06	61	88	59	88	56	88												
Jul 07	60	80	60	84	57	81												
Jul 08	56	78	56	80	55	78												
Jul 09	56	82	56	85	54	83												
Jul 10	61	88	61	89	59	86												
Jul 11	61	90	60	91	59	89												
Jul 12	62	92	61	91	58	91												
Jul 13	61	90	60	92	58	90												
Jul 14	62	86	60	89	57	86												
Jul 15	63	90	63	91	59	91												
Jul 16	63	89	63	88	60	89												
Jul 17	60	94	60	89	57	90												
Jul 18	63	83	64	87	60	84												
Jul 19	59	84	59	86	57	83												
Jul 20	59	83	59	85	56	82												
Jul 21	59	90	59	87	55	89												
Jul 22	64	93	64	91	59	93												
Jul 23	63	89	62	89	59	89												
Jul 24	61	96	61	93	56	94												
Jul 25	64	93	65	91	60	92												
Jul 26	62	89	62	89	59	87												
Jul 27	62	98	62	100	55	99												
Jul 28	67	101	67	94	62	97												
Jul 29	61	84	61	87	59	84												
Jul 30	58	87	57	85	56	82												
Jul 31	58	95	58	88	53	91												
Aug 01	59	86	58	86	57	84												
Aug 02	60	95	61	90	58	91												
Aug 03	63	98	62	92	59	94												
Aug 04	61	94	59	92	59	89												
Aug 05	60	97	60	93	57	93												
Aug 06	64	99	62	92	60	93												
Aug 07	59	89	59	87	57	87												
Aug 08	58	82	57	82	56	81												
Aug 09	57	89	58	82	55	86												
Aug 10	61	85	62	84	60	83												
Aug 11	59	86	60	87	58	87												
Aug 12	59	90	61	90	57	95												
Aug 13	62	94	61	91	57	97												
Aug 14	63	96	63	95	60	101												
Aug 15	64	100	66	95	64	103												
Aug 16	66	97	67	95	64	99												
Aug 17	61	85	62	87	60	85												
Aug 18	58	82	57	83	56	83												
Aug 19	57	84	57	84	55	84												
Aug 20	58	87	57	84	57	85												
Aug 21	59	91	58	89	56	92												
Aug 22	64	91	65	91	65	92												
Aug 23	64	94	63															

Table 2. 2019 Weather Data - Daily Maximums and Minimums (°F)

	Sutter (VE Z3)		Yolo (VE Z3)		South Yolo (VE Z3)		Yuba (VE Z3)		Butte (E Z2)		Colusa (E Z2)		Butte (OL Z1)		Glenn (OL Z1)	
	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max
Sep 01	59	94	59	92	59	94	60	96	58	91	61	91	55	87	61	90
Sep 02	60	92	59	92	59	94	62	91	57	90	60	90	55	89	60	89
Sep 03	59	89	58	89	58	91	58	89	54	89	55	90	55	89	57	88
Sep 04	59	89	58	92	58	92	58	92	55	94	59	93	55	88	59	91
Sep 05	60	84	61	87	60	88	62	87	60	86	60	88	54	86	61	87
Sep 06	58	89	57	88	57	88	56	88	53	87	54	89	50	85	57	85
Sep 07	57	75	57	80	57	77	57	77	53	79	53	81	50	91	57	80
Sep 08	55	82	55	80	55	82	55	80	52	80	52	81	53	87	54	80
Sep 09	55	83	55	80	53	83	55	81	55	83	53	82	52	89	56	80
Sep 10	54	80	53	78	53	80	55	79	53	81	51	80	51	87	53	78
Sep 11	54	82	52	82	54	83	52	84	52	85	52	86	51	86	54	85
Sep 12	53	87	52	88	52	88	53	92	49	91	50	91	48	79	53	88
Sep 13	54	91	54	91	53	93	54	91	51	91	50	95	52	81	52	93
Sep 14	54	93	54	90	57	94	53	91	52	91	53	92	43	81	55	88
Sep 15	54	81	55	87	56	83	53	82	49	85	49	88	50	77	53	83
Sep 16	56	75	54	77	55	76	55	72	52	76	57	75	44	80	54	74
Sep 17	50	80	49	78	52	79	49	78	47	80	47	81	40	91	48	78
Sep 18	56	76	54	78	55	78	55	74	50	77	52	79	43	91	52	76
Sep 19	51	74	48	75	51	75	48	75	46	77	46	78	42	90	46	76
Sep 20	50	79	51	79	49	80	50	80	48	82	52	85	45	98	51	80
Sep 21	47	83	53	83	54	82	48	84	53	87	55	87	43	98	55	84
Sep 22	51	84	50	84	50	87	51	81	49	83	50	86	44	95	49	82
Sep 23	52	84	55	82	56	85	52	84	58	86	50	81	45	96	55	84
Sep 24	53	90	58	88	59	90	56	90	59	94			42	89	63	92
Sep 25	55	94	61	91	58	95	57	93	66	96					70	93
Sep 26	61	88	62	92	60	89	56	87	59	93					61	92
Sep 27	55	74	55	77	56	74	55	73	57	74					53	71
Sep 28	46	70	49	72	47	71	46	68	47	75					45	73
Sep 29	41	69	41	68	41	70	42	66	37	67					39	66
Sep 30	41	66	42	66	42	67	45	65	42	65					42	66
Oct 01	37	72	40	71	39	73	37	72	37	74						
Oct 02	38	76	38	77	39	77	39	76	37	67						
Oct 03	39	77	39	77	42	78	43	74								
Oct 04	40	74	42	74	38	75	43	74								
Oct 05	38	79	41	79	40	80	40	79								
Oct 06	42	83	44	83	45	84	45	84								
Oct 07	44	88	44	87	49	88	46	86								
Oct 08	45	68	44	87	45	87	47	85								
Oct 09			44	72	47	73	44	73								
Oct 10			44	74	49	75	46	77								
Oct 11			38	75	39	77	39	78								
Oct 12			35	78	37	79	41	79								
Oct 13			37	79	41	79	43	79								
Oct 14			38	81	37	82	38	81								
Oct 15			36	55	38	80	42	81								
Oct 16					39	75	43	75								
Oct 17					51	72	48	72								
Oct 18							40	73								
Oct 19							45	73								
Oct 20							46	76								
Oct 21							48	74								
Oct 22																
Oct 23																
Oct 24																
Oct 25																
Oct 26																
Oct 27																
Oct 28																
Oct 29																
Oct 30																
Oct 31																

Table 3. 2019 Five Location Very Early Rice Variety Trials

4 Rep Advanced Lines and Varieties

Variety	Grain Type	Single Location Yields											
		Over All Ave Grain Yield at 14% Moisture lbs/ac		Biggs		Sutter		Yolo		South Yolo		Yuba	
		Yield	Rank	Yield	Rank	Yield	Rank	Yield	Rank	Yield	Rank	Yield	Rank
14Y1006	L	10170	1	10940	1	11100	1	10230	2	9820	1	8770	1
L-207	L	9590	2	10360	2	10820	2	9470	6	8790	5	8500	2
S-202	S	9380	3	9890	4	9890	6	10270	1	9300	2	7540	6
L-206	L	9100	4	9770	5	10010	5	9510	5	8010	11	8180	3
M-105	M	8970	5	9590	7	9770	8	9720	3	8590	6	7170	9
12Y2175	M	8890	6	9350	10	10160	4	9650	4	8220	8	7070	10
15Y2100	S	8790	7	9410	9	9850	7	9170	8	8790	4	6720	12
CJ-201	L	8760	8	9960	3	10320	3	8090	14	8220	9	7200	8
A-202	L	8740	9	9440	8	9630	9	9200	7	7770	13	7640	5
M-206	M	8620	10	8710	12	9150	12	8940	10	8510	7	7760	4
17Y3000	M	8610	11	9290	11	9430	10	8910	11	8130	10	7280	7
M-209	M	8580	12	9640	6	9370	11	9120	9	7780	12	6990	11
S-102	S	8130	13	7700	13	8400	13	8670	12	9290	3	6590	13
CA-201	S	6760	14	5620	14	6710	14	8160	13	7280	14	6040	14
MEAN		8790		9260		9620		9220		8470		7390	
CV		7.3		11.3		3.4		6.0		6.8		5.9	
LSD (.05)		730		1490		470		790		830		620	

2 Rep Advanced Lines and Varieties

18Y117	S	9400	1	10230	3	9690	5	9860	4	9710	1	7490	3
16Y1154	L	9380	2	9010	10	11000	1	9430	8	9630	2	7830	2
CM-203	S	9360	3	9840	7	9760	4	10980	1	9260	3	6970	6
16Y2028	S	9260	4	10110	5	9650	7	10070	3	9200	4	7280	5
17Y1027	L	9260	5	10450	1	10920	2	9510	5	8600	8	6820	9
15Y2135	S	9060	6	9030	9	9640	8	10100	2	8470	9	8060	1
17Y1083	L	8940	7	10190	4	10060	3	9100	10	8430	10	6910	8
17Y3047	M	8620	8	10000	6	9360	10	9480	7	7660	12	6590	11
M-104	M	8550	9	8880	11	9040	12	8900	12	8980	5	6930	7
19Y4000	M	8510	10	8520	13	9460	9	8440	13	8760	6	7370	4
17Y3158	M	8380	11	10410	2	9670	6	8320	14	7540	13	5980	14
M-205	M	8320	12	8610	12	9300	11	9290	9	7730	11	6650	10
15Y2112	S	8290	13	9650	8	7240	13	9510	6	8740	7	6320	13
CH-202	S	7520	14	8150	14	6760	14	9060	11	7140	14	6500	12
MEAN		8770		9500		9400		9430		8560		6980	
CV		7.6		10.1		4.4		5.9		9.2		6.8	
LSD (.05)		870		2080		900		1200		1700		1030	

2 Rep Preliminary Lines and Varieties

17Y2048	M	9460	1	9930	4	9570	12	9270	12	10000	1	8540	1
17Y1007	L	9240	2	9490	11	10400	2	10540	1	8870	5	7140	16
17Y1087	L	9150	3	10280	1	10670	1	8610	23	8680	9	7490	12
18Y2014	S	9100	4	8230	22	10210	5	9970	5	8550	11	8540	2
17Y1100	L	8970	5	9850	5	10220	4	9380	10	7830	19	7590	9
18Y2004	S	8970	6	8400	20	9600	9	9670	7	9310	2	7890	4
17Y2087	S	8920	7	9440	13	8970	21	9990	3	8250	16	7950	3
17Y1002	L	8850	8	9410	14	10300	3	8560	25	9050	3	6940	19
18Y108	M	8800	9	8560	18	9580	10	9350	11	8680	8	7850	6
16Y3046	M	8790	10	7810	24	9960	6	9890	6	8650	10	7660	7
18Y151	M	8740	11	9640	8	8660	23	9980	4	8830	6	6610	23
18Y2011	S	8740	12	8510	19	9290	16	9510	9	8470	13	7890	5
17Y3086	M	8720	13	9520	10	9660	8	9070	14	8270	15	7080	17
18Y3012	M	8690	14	8850	16	9770	7	8840	19	8910	4	7060	18
18Y3020	M	8590	15	9790	6	8780	22	9000	16	7910	18	7500	11
M-210	M	8530	16	8110	23	9300	15	9050	15	8740	7	7450	13
17Y3081	M	8530	17	9670	7	9450	13	8780	21	8020	17	6710	21
17Y2039	M	8520	18	8830	17	9120	17	10020	2	7430	20	7180	15
18Y152	M	8460	19	9470	12	8520	24	9510	8	7210	24	7620	8
17Y3082	M	8430	20	8370	21	9330	14	8790	20	8440	14	7230	14
17Y3014	M	8410	21	9980	3	9060	18	8610	24	6790	27	7580	10
16Y3112	M	8380	22	9630	9	9570	11	9160	13	7230	22	6900	20
16Y3112	M	8240	23	9190	15	9050	19	8870	18	7210	23	6320	25
17Y2142	S	8050	24	9990	2	8970	20	7950	26	7200	25	6130	26
CH-201	S	7640	25	7220	25	8170	25	8900	17	7410	21	6520	24
CM-101	S	7320	26	6170	28	7340	27	7930	27	8500	12	6650	22
18Y2048	S	7220	27	7210	26	7390	26	8680	22	6890	26	5950	27
CT-202	L	6190	28	6650	27	6890	28	7650	28	4620	28	5130	28
MEAN		8480		8860		9210		9130		8070		7180	
CV(%)		8.4		13.6		4.1		4.6		10.2		5.0	
LSD(0.05)		840		2470		770		860		1690		730	

S = short; M = medium; L = long.

Table 4. 2019 Biggs Very Early Rice Variety Trials

4 Rep Advanced Lines and Varieties

Variety	Grain Type	Grain Yield at 14% Moisture lbs/ac		Rank	Grain Moisture at Harvest (%)	Seedling Vigor (1-5)	Days to 50% Heading	Lodging (0-100)	Plant Height (cm)
		Yield	Rank						
14Y1006	L	10940	1	15.9	4.7	80	0	99	
L-207	L	10360	2	14.8	4.7	82	3	107	
CJ-201	L	9960	3	14.8	4.7	84	3	90	
S-202	S	9890	4	13.8	4.9	77	27	92	
L-206	L	9770	5	13.9	4.7	78	0	89	
M-209	M	9640	6	18.8	4.8	84	0	100	
M-105	M	9590	7	17.9	4.7	77	23	100	
A-202	L	9440	8	15.5	4.8	82	6	98	
15Y2100	S	9410	9	11.4	4.9	80	11	97	
12Y2175	M	9350	10	18.5	4.8	83	0	104	
17Y3000	M	9290	11	18.6	4.8	77	16	96	
M-206	M	8710	12	18.8	4.8	77	29	98	
S-102	S	7700	13	9.8	5.0	71	29	96	
CA-201	S	5620	14	14.1	4.8	81	46	90	
MEAN		9260		15.5	4.8	79	14	97	
CV		11.3		4.8	2.0	1.7	127.0	5.2	
LSD (.05)		1490		1.1	0.14	2.0	24.9	7.2	

2 Rep Advanced Lines and Varieties

17Y1027	L	10450	1	16.3	4.8	81	0	101
17Y3158	M	10410	2	17.6	5.0	83	0	105
18Y117	S	10230	3	14.3	5.0	77	30	95
17Y1083	L	10190	4	15.1	4.7	84	0	90
16Y2028	S	10110	5	13.6	5.0	79	69	111
17Y3047	M	10000	6	16.4	5.0	80	0	99
CM-203	S	9840	7	15.1	4.8	78	9	100
15Y2112	S	9650	8	18.4	5.0	84	39	103
15Y2135	S	9030	9	16.3	5.0	79	4	98
16Y1154	L	9010	10	14.0	4.7	81	0	100
M-104	M	8880	11	15.6	4.9	71	8	100
M-205	M	8610	12	17.1	5.0	84	0	99
19Y4000	M	8520	13	18.1	4.9	75	9	101
CH-202	S	8150	14	14.6	4.9	78	10	105
MEAN		9500		15.9	4.9	79	13	100
CV		10.1		9.9	1.3	1.6	133.7	7.1
LSD (.05)		2080		3.4	0.14	2.8	36.4	15.4

2 Rep Preliminary Lines and Varieties

17Y1087	L	10280	1	14.2	4.7	79	0	99
17Y2142	S	9990	2	15.6	5.0	83	0	111
17Y3014	M	9980	3	18.3	4.8	77	25	102
17Y2048	M	9930	4	15.8	5.0	75	1	97
17Y1100	L	9850	5	14.9	5.0	82	0	101
18Y3020	M	9790	6	17.0	4.8	77	6	99
17Y3081	M	9670	7	17.2	4.9	80	0	102
18Y151	M	9640	8	17.2	5.0	84	0	97
16Y3112	M	9630	9	18.2	4.9	82	5	108
17Y3086	M	9520	10	17.2	4.8	81	0	110
17Y1007	L	9490	11	14.2	4.7	77	0	100
18Y152	M	9470	12	18.5	4.9	83	13	109
17Y2087	S	9440	13	16.3	5.0	77	5	91
17Y1002	L	9410	14	14.6	4.7	79	0	96
16Y3112	M	9190	15	18.2	5.0	81	13	111
18Y3012	M	8850	16	17.1	4.8	78	0	100
17Y2039	M	8830	17	16.4	5.0	84	5	109
18Y108	M	8560	18	16.3	4.9	75	8	97
18Y2011	S	8510	19	13.4	4.8	76	0	99
18Y2004	S	8400	20	16.9	5.0	77	25	103
17Y3082	M	8370	21	18.0	4.8	77	0	100
18Y2014	S	8230	22	13.9	5.0	71	33	100
M-210	M	8110	23	17.5	4.9	76	6	101
16Y3046	M	7810	24	18.4	4.9	78	0	100
CH-201	S	7220	25	11.4	4.8	81	30	91
18Y2048	S	7210	26	16.7	5.0	80	60	108
CT-202	L	6650	27	13.4	4.7	82	0	92
CM-101	S	6170	28	10.8	5.0	74	34	98
MEAN		8860		16.0	4.9	79	10	101
CV(%)		13.6		10.5	0.0	1.5	158.9	5.2
LSD(0.05)		2470		3.4	0.11	2.5	31.8	10.7

S = short; M = medium; L = long.

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

Subjective rating of 0-100 where 0 = none and 100 = completely lodged.

Table 5. 2019 Sutter Very Early Rice Variety Trials

4 Rep Advanced Lines and Varieties

Variety	Grain Type	Grain Yield at 14% Moisture lbs/ac		Grain Moisture at Harvest (%)	Seedling Vigor (1-5)	Days to 50% Heading	Lodging (0-100)	Plant Height (cm)
		Yield	Rank					
14Y1006	L	11100	1	18.8	4.8	84	26	89
L-207	L	10820	2	15.6	4.8	87	1	100
CJ-201	L	10320	3	15.3	4.8	93	1	91
12Y2175	M	10160	4	20.2	4.8	92	0	95
L-206	L	10010	5	16.3	4.8	86	3	86
S-202	S	9890	6	20.6	4.7	85	91	94
15Y2100	S	9850	7	17.9	4.8	90	41	94
M-105	M	9770	8	19.9	4.8	84	43	92
A-202	L	9630	9	17.9	4.8	91	1	91
17Y3000	M	9430	10	20.8	4.8	88	4	98
M-209	M	9370	11	20.6	4.8	92	4	91
M-206	M	9150	12	20.2	4.8	87	3	93
S-102	S	8400	13	15.8	4.8	82	86	93
CA-201	S	6710	14	16.7	4.8	95	70	94
MEAN		9620		18.3	4.8	88	27	93
CV		3.4		7.7	0.5	1.2	45.8	1.5
LSD (.05)		470		2.0	0.06	1.5	17.5	1.9

2 Rep Advanced Lines and Varieties

16Y1154	L	11000	1	16.2	4.8	88	0	100
17Y1027	L	10920	2	17.4	4.8	86	0	94
17Y1083	L	10060	3	18.8	4.7	98	0	86
CM-203	S	9760	4	22.4	4.7	87	68	96
18Y117	S	9690	5	19.4	4.8	86	0	90
17Y3158	M	9670	6	22.2	4.8	91	3	93
16Y2028	S	9650	7	22.1	4.8	87	90	99
15Y2135	S	9640	8	20.6	4.8	92	5	93
19Y4000	M	9460	9	21.2	4.8	87	0	89
17Y3047	M	9360	10	19.7	4.8	86	8	86
M-205	M	9300	11	21.1	4.7	98	3	86
M-104	M	9040	12	18.8	4.7	83	80	87
15Y2112	S	7240	13	24.8	4.8	95	100	86
CH-202	S	6760	14	18.2	4.9	91	100	87
MEAN		9400		20.2	4.8	89	33	91
CV		4.4		8.5	0.0	1.1	24.8	2.9
LSD (.05)		900		3.7	0.08	2.1	17.4	5.7

2 Rep Preliminary Lines and Varieties

17Y1087	L	10670	1	16.3	4.8	89	0	97
17Y1007	L	10400	2	17.1	4.8	83	0	98
17Y1002	L	10300	3	17.4	4.8	85	0	100
17Y1100	L	10220	4	17.9	4.8	94	0	96
18Y2014	S	10210	5	18.5	4.8	88	55	93
16Y3046	M	9960	6	23.0	4.8	91	0	94
18Y3012	M	9770	7	20.9	4.8	86	38	94
17Y3086	M	9660	8	21.3	4.8	89	0	94
18Y2004	S	9600	9	20.4	4.8	91	95	92
18Y108	M	9580	10	18.5	4.8	91	0	95
16Y3112	M	9570	11	21.7	4.8	95	0	94
17Y2048	M	9570	12	18.0	4.8	89	58	88
17Y3081	M	9450	13	20.1	4.8	91	0	93
17Y3082	M	9330	14	21.3	4.8	89	5	92
M-210	M	9300	15	21.9	4.8	87	0	94
18Y2011	S	9290	16	20.5	4.8	88	0	87
17Y2039	M	9120	17	22.2	4.8	96	0	84
17Y3014	M	9060	18	22.9	4.8	90	3	99
16Y3112	M	9050	19	22.0	4.8	94	3	94
17Y2142	S	8970	20	24.5	4.8	92	10	61
17Y2087	S	8970	21	21.4	4.8	94	8	88
18Y3020	M	8780	22	19.8	4.8	87	0	90
18Y151	M	8660	23	22.5	4.8	97	0	90
18Y152	M	8520	24	22.6	4.8	97	0	85
CH-201	S	8170	25	16.4	4.9	97	0	86
18Y2048	S	7390	26	21.1	4.8	94	98	94
CM-101	S	7340	27	16.0	4.8	85	78	87
CT-202	L	6890	28	15.9	4.7	98	0	86
MEAN		9210		20.1	4.8	91	16	91
CV(%)		4.1		6.9	0.2	2.0	82.0	14.9
LSD(0.05)		770		2.9	0.09	3.8	26.9	27.8

S = short; M = medium; L = long.

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

Subjective rating of 0-100 where 0 = none and 100 = completely lodged.

Table 6. 2019 Yolo Very Early Rice Variety Trials

4 Rep Advanced Lines and Varieties

Variety	Grain Type	Grain Yield at 14% Moisture lbs/ac		Grain Moisture at Harvest (%)	Seedling Vigor (1-5)	Days to 50% Heading	Lodging (0-100)	Plant Height (cm)
		Yield	Rank					
S-202	S	10270	1	16.6	4.7	87	49	91
14Y1006	L	10230	2	15.7	4.7	91	15	101
M-105	M	9720	3	18.1	4.8	87	1	99
12Y2175	M	9650	4	17.5	4.8	92	3	99
L-206	L	9510	5	15.5	4.7	88	30	90
L-207	L	9470	6	15.0	4.7	93	45	105
A-202	L	9200	7	17.6	4.7	93	19	102
15Y2100	S	9170	8	14.6	4.8	92	76	99
M-209	M	9120	9	17.4	4.8	93	18	101
M-206	M	8940	10	18.3	4.7	88	3	97
17Y3000	M	8910	11	18.5	4.8	89	5	96
S-102	S	8670	12	14.7	4.7	85	23	93
CA-201	S	8160	13	14.3	4.7	89	28	91
CJ-201	L	8090	14	15.2	4.7	97	16	90
MEAN		9220		16.4	4.7	90	23	97
CV		6.0		5.5	0.4	1.1	89.3	2.3
LSD (.05)		790		1.3	0.07	1.4	30.0	3.2

2 Rep Advanced Lines and Varieties

CM-203	S	10980	1	18.2	4.8	91	78	101
15Y2135	S	10100	2	18.3	4.8	91	0	96
16Y2028	S	10070	3	18.7	4.8	90	78	102
18Y117	S	9860	4	17.4	4.8	90	28	91
17Y1027	L	9510	5	16.5	4.7	92	5	98
15Y2112	S	9510	6	20.5	4.8	89	90	95
17Y3047	M	9480	7	16.7	4.7	90	3	92
16Y1154	L	9430	8	16.8	4.8	93	30	105
M-205	M	9290	9	18.8	4.8	93	3	94
17Y1083	L	9100	10	17.9	4.9	97	40	96
CH-202	S	9060	11	16.5	4.8	88	45	92
M-104	M	8900	12	16.7	4.8	86	3	91
19Y4000	M	8440	13	18.0	4.8	88	8	94
17Y3158	M	8320	14	18.6	4.8	89	38	98
MEAN		9430		17.8	4.8	90	32	96
CV		5.9		8.4	0.6	1.4	68.9	3.6
LSD (.05)		1200		3.2	0.14	2.7	47.3	7.5

2 Rep Preliminary Lines and Varieties

17Y1007	L	10540	1	15.5	4.8	94	33	97
17Y2039	M	10020	2	16.8	4.8	94	28	93
17Y2087	S	9990	3	17.0	4.8	90	3	98
18Y151	M	9980	4	17.5	4.7	93	65	97
18Y2014	S	9970	5	16.3	4.8	87	20	95
16Y3046	M	9890	6	17.4	4.8	91	40	99
18Y2004	S	9670	7	18.9	4.8	90	90	100
18Y152	M	9510	8	20.6	4.8	92	40	101
18Y2011	S	9510	9	17.5	4.8	90	3	102
17Y1100	L	9380	10	15.5	4.8	94	3	96
18Y108	M	9350	11	18.6	4.7	82	0	98
17Y2048	M	9270	12	17.5	4.7	86	5	89
16Y3112	M	9160	13	15.6	4.8	92	83	98
17Y3086	M	9070	14	18.5	4.8	92	33	100
M-210	M	9050	15	17.8	4.8	89	0	96
18Y3020	M	9000	16	18.2	4.7	90	0	90
CH-201	S	8900	17	16.9	4.8	89	45	95
16Y3112	M	8870	18	16.5	4.8	92	65	97
18Y3012	M	8840	19	18.3	4.7	90	10	96
17Y3082	M	8790	20	20.1	4.8	88	0	101
17Y3081	M	8780	21	17.8	4.8	92	43	102
18Y2048	S	8680	22	17.6	4.8	91	85	97
17Y1087	L	8610	23	14.4	4.8	97	0	108
17Y3014	M	8610	24	19.9	4.8	87	5	106
17Y1002	L	8560	25	18.1	4.8	91	20	103
17Y2142	S	7950	26	16.7	4.8	93	78	115
CM-101	S	7930	27	14.9	4.7	87	10	98
CT-202	L	7650	28	15.0	4.7	95	0	98
MEAN		9130		17.3	4.8	90	29	98
CV(%)		4.6		5.3	0.0	1.8	51.3	1.3
LSD(0.05)		860		1.9	0.08	3.3	30.2	2.7

S = short; M = medium; L = long.

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

Subjective rating of 0-100 where 0 = none and 100 = completely lodged.

Table 7. 2019 South Yolo Very Early Rice Variety Trials

4 Rep Advanced Lines and Varieties

Variety	Grain Type	Grain Yield at 14% Moisture lbs/ac			Grain Moisture at Harvest (%)	Seedling Vigor (1-5)	Days to 50% Heading	Lodging (0-100)	Plant Height (cm)
		Yield	Rank	Rank					
14Y1006	L	9820	1	13.3	4.8	96	31	93	
S-202	S	9300	2	13.2	4.8	99	78	90	
S-102	S	9290	3	12.9	4.8	93	44	91	
15Y2100	S	8790	4	11.8	4.8	98	94	93	
L-207	L	8790	5	14.5	4.8	98	45	94	
M-105	M	8590	6	12.9	4.8	97	81	94	
M-206	M	8510	7	13.5	4.8	100	73	93	
12Y2175	M	8220	8	12.7	4.8	103	93	95	
CJ-201	L	8220	9	13.7	4.8	103	15	89	
17Y3000	M	8130	10	12.7	4.8	100	84	94	
L-206	L	8010	11	13.8	4.8	100	36	88	
M-209	M	7780	12	15.0	4.8	104	33	92	
A-202	L	7770	13	16.2	4.8	103	5	91	
CA-201	S	7280	14	13.7	4.8	102	55	92	
MEAN		8470		13.6	4.8	100	55	92	
CV		6.8		7.0	0.5	1.2	36.8	1.3	
LSD (.05)		830		1.4	0.02	1.7	28.7	1.7	

2 Rep Advanced Lines and Varieties

18Y117	S	9710	1	14.2	4.8	96	48	90
16Y1154	L	9630	2	13.5	4.8	98	50	89
CM-203	S	9260	3	12.2	4.8	97	100	95
16Y2028	S	9200	4	12.9	4.8	97	85	94
M-104	M	8980	5	13.8	4.8	98	93	92
19Y4000	M	8760	6	13.4	4.8	99	65	92
15Y2112	S	8740	7	14.9	4.8	102	90	86
17Y1027	L	8600	8	13.8	4.8	99	20	90
15Y2135	S	8470	9	12.6	4.8	103	85	88
17Y1083	L	8430	10	14.6	4.8	102	3	87
M-205	M	7730	11	13.8	4.8	104	48	87
17Y3047	M	7660	12	14.1	4.8	100	65	87
17Y3158	M	7540	13	14.3	4.8	104	65	90
CH-202	S	7140	14	13.6	4.8	102	85	93
MEAN		8560		13.7	4.8	100	64	90
CV		9.2		9.1	0.0	1.0	35.4	1.3
LSD (.05)		1700		2.7	0.00	2.1	49.1	2.4

2 Rep Preliminary Lines and Varieties

17Y2048	M	10000	1	14.4	4.8	93	30	89
18Y2004	S	9310	2	13.6	4.8	101	85	95
17Y1002	L	9050	3	14.7	4.8	94	90	92
18Y3012	M	8910	4	13.6	4.8	97	60	86
17Y1007	L	8870	5	14.6	4.8	97	10	92
18Y151	M	8830	6	13.9	4.8	103	50	90
M-210	M	8740	7	13.2	4.8	99	78	92
18Y108	M	8680	8	12.9	4.8	102	88	91
17Y1087	L	8680	9	13.4	4.8	99	28	90
16Y3046	M	8650	10	12.7	4.8	98	83	91
18Y2014	S	8550	11	13.1	4.8	98	95	94
CM-101	S	8500	12	12.5	4.8	95	53	90
18Y2011	S	8470	13	13.2	4.8	96	35	90
17Y3082	M	8440	14	13.6	4.8	100	83	88
17Y3086	M	8270	15	13.8	4.8	101	70	100
17Y2087	S	8250	16	14.8	4.8	101	65	96
17Y3081	M	8020	17	12.6	4.8	101	88	94
18Y3020	M	7910	18	14.2	4.8	99	68	85
17Y1100	L	7830	19	13.9	4.8	102	70	99
17Y2039	M	7430	20	14.6	4.8	105	25	90
CH-201	S	7410	21	13.4	4.8	103	85	94
16Y3112	M	7230	22	12.4	4.8	102	95	96
16Y3112	M	7210	23	12.7	4.8	104	90	96
18Y152	M	7210	24	13.8	4.8	103	48	92
17Y2142	S	7200	25	12.9	4.8	98	83	108
18Y2048	S	6890	26	12.2	4.8	98	100	97
17Y3014	M	6790	27	13.5	4.8	100	93	94
CT-202	L	4620	28	13.9	4.8	104	5	84
MEAN		8070		13.5	4.8	100	66	92
CV(%)		10.2		7.0	0.0	1.9	23.9	1.7
LSD(0.05)		1690		2.0	0.00	3.8	32.4	3.1

S = short; M = medium; L = long.

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

Subjective rating of 0-100 where 0 = none and 100 = completely lodged.

Table 8. 2019 Yuba Very Early Rice Variety Trials

4 Rep Advanced Lines and Varieties

Variety	Grain Type	Grain Yield at 14% Moisture lbs/ac		Grain Moisture at Harvest (%)	Seedling Vigor (1-5)	Days to 50% Heading	Lodging (0-100)	Plant Height (cm)
		Yield	Rank					
14Y1006	L	8770	1	14.7	4.7	83	19	96
L-207	L	8500	2	13.9	4.7	85	45	103
L-206	L	8180	3	14.5	4.7	83	50	88
M-206	M	7760	4	15.0	4.7	83	84	100
A-202	L	7640	5	17.2	4.8	86	53	97
S-202	S	7540	6	17.0	4.7	82	75	96
17Y3000	M	7280	7	15.6	4.7	84	84	96
CJ-201	L	7200	8	13.7	4.7	91	20	87
M-105	M	7170	9	15.4	4.7	82	96	99
12Y2175	M	7070	10	15.3	4.7	90	91	101
M-209	M	6990	11	15.7	4.7	90	68	96
15Y2100	S	6720	12	12.9	4.7	87	96	94
S-102	S	6590	13	13.2	4.7	80	99	95
CA-201	S	6040	14	16.4	4.7	85	88	93
MEAN		7390		15.0	4.7	85	69	96
CV		5.9		8.2	0.2	1.7	32.3	1.7
LSD (.05)		620		1.8	0.04	2.0	31.9	2.3

2 Rep Advanced Lines and Varieties

15Y2135	S	8060	1	15.8	4.7	84	98	98
16Y1154	L	7830	2	12.5	4.7	85	75	106
18Y117	S	7490	3	15.2	4.7	84	100	97
19Y4000	M	7370	4	15.3	4.7	84	90	98
16Y2028	S	7280	5	14.8	4.7	84	100	104
CM-203	S	6970	6	15.0	4.7	84	100	106
M-104	M	6930	7	18.4	4.7	81	88	94
17Y1083	L	6910	8	20.1	4.8	91	5	89
17Y1027	L	6820	9	14.9	4.7	86	43	103
M-205	M	6650	10	16.3	4.7	91	75	97
17Y3047	M	6590	11	16.0	4.7	87	75	92
CH-202	S	6500	12	15.7	4.7	83	100	97
15Y2112	S	6320	13	21.4	4.7	85	100	96
17Y3158	M	5980	14	13.1	4.7	88	75	98
MEAN		6980		16.0	4.7	85	80	98
CV		6.8		11.4	0.5	1.6	11.7	3.3
LSD (.05)		1030		3.9	0.07	2.9	20.2	7.0

2 Rep Preliminary Lines and Varieties

17Y2048	M	8540	1	15.6	4.8	82	98	101
18Y2014	S	8540	2	13.3	4.8	79	100	100
17Y2087	S	7950	3	19.3	4.8	84	90	93
18Y2004	S	7890	4	15.8	4.9	83	100	97
18Y2011	S	7890	5	15.4	4.8	83	95	104
18Y108	M	7850	6	16.3	4.8	84	90	88
16Y3046	M	7660	7	16.0	4.8	84	98	103
18Y152	M	7620	8	17.2	4.9	89	95	95
17Y1100	L	7590	9	15.0	4.8	87	13	96
17Y3014	M	7580	10	17.0	4.7	85	100	112
18Y3020	M	7500	11	16.3	4.7	84	80	100
17Y1087	L	7490	12	15.2	4.8	85	18	102
M-210	M	7450	13	15.5	4.7	83	85	97
17Y3082	M	7230	14	14.6	4.7	84	88	93
17Y2039	M	7180	15	16.7	4.8	91	60	92
17Y1007	L	7140	16	13.6	4.8	82	43	100
17Y3086	M	7080	17	15.9	4.8	87	93	102
18Y3012	M	7060	18	16.2	4.7	84	90	91
17Y1002	L	6940	19	13.1	4.8	81	40	104
16Y3112	M	6900	20	14.5	4.8	90	93	101
17Y3081	M	6710	21	16.2	4.7	84	95	98
CM-101	S	6650	22	14.6	4.8	81	98	99
18Y151	M	6610	23	16.7	4.8	91	90	88
CH-201	S	6520	24	13.6	4.8	84	100	96
16Y3112	M	6320	25	16.4	4.8	91	90	100
17Y2142	S	6130	26	16.1	4.8	87	95	99
18Y2048	S	5950	27	13.9	4.8	83	100	103
CT-202	L	5130	28	15.6	4.8	91	5	100
MEAN		7180		15.6	4.8	85	80	98
CV(%)		5.0		7.1	0.2	1.1	13.7	1.1
LSD(0.05)		730		2.3	0.10	2.0	22.4	2.2

S = short; M = medium; L = long.

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

Subjective rating of 0-100 where 0 = none and 100 = completely lodged.

Table 9. Grain Yield (lb/acre @14% moisture) Summary of Very Early Rice Varieties by Location and Year (2015-2019)

Location	Year	M104	M105	M206	Calmochi		
					101	S102	L206
Biggs (RES)	2015	8580	8150	9350	7940	9520	8910
	2016		10380	10250	7490	8960	10100
	2017	8790	9270	9680	8140	9260	9850
	2018	7670	8600	9090	6390	7890	9770
	2019	8800	9590	8710	6170	7700	9770
Location Mean		8460	9198	9416	7226	8666	9680
Sutter	2015	9520	10350	9900	7990	9190	9820
	2016		11630	11110	9420	10720	9260
	2017	9030	9380	9240	7250	8770	8580
	2018	9390	9540	9250	7110	9260	9330
	2019	9040	9770	9150	7340	8400	10010
Location Mean		9245	10134	9730	7822	9268	9400
Yolo	2015	8150	7210	7490	5560	6940	7740
	2016		10420	10980	9290	9530	10090
	2017	9670	8550	8890	7790	8360	9250
	2018	9780	10010	10090	8500	9490	9890
	2019	8900	9720	8940	7930	8670	9510
Location Mean		9125	9182	9278	7814	8598	9296
South Yolo	2017	8240	8590	7530	8570	8610	6860
	2018	8830	8210	7640	8020	8330	7260
	2019	8980	8590	8510	8500	9290	8010
Location Mean		8683	8463	7893	8363	8743	7377
Yuba	2015		9970	9940	7840	8740	9840
	2016		9110	9090	7470	8300	8670
	2017	7880	8370	8770	7090	8170	7670
	2018	8720	9450	9350	7740	8170	8930
	2019	6930	7170	7760	6650	6590	8180
Location Mean		7843	8814	8982	7358	7994	8658
Loc/Years Mean		8671	9158	9060	7717	8654	8882

Table 10. 2019 Three Location Early Rice Variety Trials

4 Rep Advanced Lines and Varieties

Variety	Grain Type	Single Location Yields							
		Over All Ave Grain Yield at 14% Moisture lbs/ac		Biggs		Butte		Colusa	
		Yield	Rank	Yield	Rank	Yield	Rank	Yield	Rank
14Y1006	L	11380	1	11430	1	11420	1	11300	1
L-207	L	10570	2	10430	2	10390	2	10890	2
S-202	S	10110	3	10320	3	10050	4	9980	4
12Y2175	M	9880	4	9750	6	10060	3	9830	7
M-105	M	9800	5	10160	4	9820	5	9430	8
A-202	L	9770	6	9910	5	9500	8	9890	6
CJ-201	L	9600	7	9360	9	9230	9	10210	3
M-206	M	9420	8	9210	11	9660	7	9380	9
L-206	L	9400	9	9510	8	8720	13	9970	5
M-209	M	9340	10	9520	7	9180	11	9320	10
17Y3000	M	9200	11	9060	12	9750	6	8780	13
15Y2100	S	9130	12	9250	10	9200	10	8940	11
S-102	S	8890	13	8970	13	8840	12	8870	12
CA-201	S	7050	14	6580	14	6650	14	7930	14
MEAN		9540		9530		9460		9620	
CV		5.6		7.3		4.6		7.4	
LSD (.05)		640		1000		620		1020	

2 Rep Advanced Lines and Varieties

17Y1027	L	11040	1	11790	1	10730	1	10610	1
16Y1154	L	10760	2	11130	2	10630	2	10520	2
18Y117	S	10020	3	10090	4	10470	4	9500	5
17Y1083	L	9910	4	9740	7	10160	5	9840	4
15Y2112	S	9650	5	9020	12	9620	9	10320	3
CM-203	S	9620	6	10470	3	9960	6	8430	13
16Y2028	S	9540	7	9600	9	10580	3	8460	12
17Y3047	M	9540	8	9700	8	9860	7	9060	9
15Y2135	S	9440	9	9440	11	9640	8	9250	7
19Y4000	M	9330	10	9540	10	9390	10	9070	8
M-205	M	9330	11	9760	6	9260	12	8960	11
CH-202	S	9060	12	8810	13	9010	13	9340	6
M-104	M	8990	13	8600	14	9380	11	8980	10
17Y3158	M	8900	14	10020	5	8410	14	8270	14
MEAN		9650		9840		9790		9330	
CV		8.6		8.2		5.3		11.6	
LSD (.05)		930		1740		1120		2340	

2 Rep Preliminary Lines and Varieties

18Y1024	L	10510	1	10510	1	10430	1	10590	2
18Y3102	M	10050	2	10090	8	10140	2	9920	5
17Y1085	L	9950	3	10220	4	9690	9	9930	4
18Y3018	M	9890	4	10040	10	9660	12	9960	3
18Y3075	M	9880	5	10000	11	9840	5	9790	7
18Y3098	M	9870	6	10310	3	9670	11	9620	9
17Y3075	M	9740	7	9840	13	9950	4	9440	10
18Y3127	M	9690	8	10180	6	9180	19	9710	8
18Y2025	S	9680	9	9800	14	9840	6	9390	11
18Y3022	M	9670	10	8920	24	9400	17	10680	1
18Y3065	M	9630	11	10340	2	9840	7	8720	19
18Y3126	M	9600	12	9690	15	9740	8	9380	12
18Y3092	M	9600	13	10090	9	9410	16	9290	13
M-210	M	9540	14	9510	21	10020	3	9100	16
18Y3021	M	9490	15	9300	23	9350	18	9820	6
18Y3011	M	9420	16	9610	17	9420	15	9220	14
18Y3010	M	9390	17	10200	5	9550	14	8430	22
18Y2070	S	9350	18	9550	19	9690	10	8800	18
18Y3123	M	9300	19	9620	16	9580	13	8700	20
16Y3088	M	9160	20	9430	22	9000	24	9030	17
17Y3089	M	9110	21	10150	7	8040	25	9130	15
17Y3144	M	9000	22	9580	18	9020	23	8410	23
18Y2016	S	8990	23	9920	12	9100	20	7950	27
18Y2012	S	8940	24	9540	20	9060	21	8210	26
18Y2045	S	8700	25	8840	25	9030	22	8220	25
CM-101	S	7940	26	7640	26	7830	26	8330	24
CH-201	S	7700	27	7090	27	7480	27	8530	21
CT-202	L	6450	28	6430	28	6410	28	6520	28
MEAN		9290		9520		9260		9100	
CV(%)		6.8		3.8		6.6		9.3	
LSD(0.05)		810		750		1250		1730	

S = short; M = medium; L = long.

Table 11. 2019 Biggs Early Rice Variety Trials

4 Rep Advanced Lines and Varieties

Variety	Grain Type	Grain Yield at 14% Moisture lbs/ac		Grain Moisture at Harvest (%)	Seedling Vigor (1-5)	Days to 50% Heading	Lodging (0-100)	Plant Height (cm)
		Yield	Rank					
14Y1006	L	11430	1	17.2	4.8	78	2	101
L-207	L	10430	2	16.0	4.9	79	1	115
S-202	S	10320	3	18.5	4.8	77	33	96
M-105	M	10160	4	19.5	4.8	78	23	104
A-202	L	9910	5	16.5	4.9	79	12	103
12Y2175	M	9750	6	21.1	4.8	82	1	105
M-209	M	9520	7	20.5	4.9	84	1	102
L-206	L	9510	8	14.1	4.8	76	16	92
CJ-201	L	9360	9	15.2	4.9	81	1	96
15Y2100	S	9250	10	15.3	4.8	79	26	101
M-206	M	9210	11	21.0	4.8	78	44	107
17Y3000	M	9060	12	18.9	4.9	76	26	100
S-102	S	8970	13	9.9	5.0	72	63	98
CA-201	S	6580	14	13.0	4.8	79	54	96
MEAN		9530		16.9	4.9	78	22	101
CV		7.3		12.2	0.1	2.2	102.9	5.1
LSD (.05)		1000		2.9	0.13	2.4	31.9	7.4

2 Rep Advanced Lines and Varieties

17Y1027	L	11790	1	18.6	4.8	81	0	107
16Y1154	L	11130	2	17.0	4.7	80	0	109
CM-203	S	10470	3	19.0	4.7	79	21	95
18Y117	S	10090	4	16.6	5.0	75	20	95
17Y3158	M	10020	5	19.2	5.0	83	1	107
M-205	M	9760	6	21.8	4.8	84	0	98
17Y1083	L	9740	7	13.7	5.0	78	1	91
17Y3047	M	9700	8	18.4	5.0	83	3	98
16Y2028	S	9600	9	15.6	4.9	76	75	108
19Y4000	M	9540	10	17.7	4.9	76	23	91
15Y2135	S	9440	11	15.7	5.0	79	0	99
15Y2112	S	9020	12	20.3	4.9	80	19	105
CH-202	S	8810	13	11.2	5.0	74	4	89
M-104	M	8600	14	16.6	4.9	71	30	97
MEAN		9840		17.2	4.9	78	14	99
CV		8.2		12.5	1.6	2.0	138.0	6.7
LSD (.05)		1740		4.6	0.16	3.4	41.8	14.3

2 Rep Preliminary Lines and Varieties

18Y1024	L	10510	1	14.7	4.8	78	0	90
18Y3065	M	10340	2	18.6	4.9	83	0	102
18Y3098	M	10310	3	21.2	4.9	78	14	106
17Y1085	L	10220	4	15.8	4.8	82	0	93
18Y3010	M	10200	5	19.1	4.9	82	0	109
18Y3127	M	10180	6	20.8	4.7	84	0	104
17Y3089	M	10150	7	22.6	4.8	85	0	105
18Y3102	M	10090	8	17.6	4.9	78	0	105
18Y3092	M	10090	9	18.4	4.9	84	0	99
18Y3018	M	10040	10	20.5	4.9	80	3	104
18Y3075	M	10000	11	20.9	5.0	82	3	97
18Y2016	S	9920	12	17.6	4.9	81	16	100
17Y3075	M	9840	13	20.6	4.8	79	0	106
18Y2025	S	9800	14	20.8	5.0	85	0	98
18Y3126	M	9690	15	20.8	4.8	82	0	105
18Y3123	M	9620	16	19.4	4.9	80	0	94
18Y3011	M	9610	17	19.0	4.8	82	0	103
17Y3144	M	9580	18	18.6	4.9	81	0	102
18Y2070	S	9550	19	16.8	4.9	79	5	102
18Y2012	S	9540	20	16.4	5.0	79	26	107
M-210	M	9510	21	17.6	4.9	77	44	103
16Y3088	M	9430	22	19.6	4.9	83	13	105
18Y3021	M	9300	23	18.3	5.0	81	3	95
18Y3022	M	8920	24	16.5	4.9	77	0	96
18Y2045	S	8840	25	15.2	4.9	78	6	106
CM-101	S	7640	26	12.7	4.9	74	48	99
CH-201	S	7090	27	14.6	4.8	88	90	105
CT-202	L	6430	28	14.2	5.0	86	1	95
MEAN		9520		18.2	4.9	81	10	101
CV(%)		3.8		12.7	0.2	2.2	171.0	5.6
LSD(0.05)		750		4.7	0.16	3.7	33.8	11.6

S = short; M = medium; L = long.

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

Subjective rating of 0-100 where 0 = none and 100 = completely lodged.

Table 12. 2019 Butte Early Rice Variety Trials

4 Rep Advanced Lines and Varieties

Variety	Grain Type	Grain Yield at 14% Moisture lbs/ac						
		Yield	Rank	Grain Moisture at Harvest (%)	Seedling Vigor (1-5)	Days to 50% Heading	Lodging (0-100)	Plant Height (cm)
14Y1006	L	11420	1	13.1	4.7	85	44	98
L-207	L	10390	2	13.2	4.7	88	31	103
12Y2175	M	10060	3	16.1	4.8	98	85	101
S-202	S	10050	4	14.5	4.7	87	99	99
M-105	M	9820	5	15.2	4.7	89	91	106
17Y3000	M	9750	6	17.2	4.8	91	85	101
M-206	M	9660	7	16.9	4.7	89	81	104
A-202	L	9500	8	14.9	4.8	90	28	101
CJ-201	L	9230	9	12.9	4.7	95	45	92
15Y2100	S	9200	10	13.3	4.7	94	89	102
M-209	M	9180	11	16.8	4.8	97	78	99
S-102	S	8840	12	12.6	4.7	85	93	104
L-206	L	8720	13	13.5	4.7	87	56	92
CA-201	S	6650	14	13.1	4.8	90	91	93
MEAN		9460		14.5	4.7	90	71	100
CV		4.6		3.6	0.1	1.9	16.9	1.9
LSD (.05)		620		0.7	0.07	2.5	17.2	2.7

2 Rep Advanced Lines and Varieties

17Y1027	L	10730	1	14.0	4.8	88	15	104
16Y1154	L	10630	2	13.8	4.8	89	15	103
16Y2028	S	10580	3	13.6	4.8	89	100	111
18Y117	S	10470	4	16.0	4.7	87	93	97
17Y1083	L	10160	5	15.1	4.8	96	3	94
CM-203	S	9960	6	15.9	4.8	88	95	101
17Y3047	M	9860	7	16.5	4.7	96	50	101
15Y2135	S	9640	8	17.7	4.9	95	85	101
15Y2112	S	9620	9	17.1	4.8	95	100	95
19Y4000	M	9390	10	16.8	4.8	89	50	99
M-104	M	9380	11	14.8	4.7	85	93	99
M-205	M	9260	12	17.2	4.8	99	65	95
CH-202	S	9010	13	13.8	4.7	92	100	93
17Y3158	M	8410	14	17.5	4.8	97	58	105
MEAN		9790		15.7	4.7	92	66	100
CV		5.3		5.7	0.2	1.3	20.6	2.0
LSD (.05)		1120		1.9	0.12	2.6	29.2	4.2

2 Rep Preliminary Lines and Varieties

18Y1024	L	10430	1	15.0	4.7	87	5	93
18Y3102	M	10140	2	18.2	4.8	89	5	99
M-210	M	10020	3	17.3	4.9	89	33	102
17Y3075	M	9950	4	18.7	4.8	89	65	106
18Y3075	M	9840	5	19.6	4.7	96	15	100
18Y2025	S	9840	6	17.2	4.8	96	63	98
18Y3065	M	9840	7	18.7	4.8	97	28	101
18Y3126	M	9740	8	18.2	4.8	96	40	98
17Y1085	L	9690	9	15.5	4.7	95	18	95
18Y2070	S	9690	10	17.4	4.7	89	48	100
18Y3098	M	9670	11	19.4	4.8	96	48	103
18Y3018	M	9660	12	19.9	4.8	98	13	102
18Y3123	M	9580	13	19.2	4.7	96	8	97
18Y3010	M	9550	14	18.5	4.8	96	43	102
18Y3011	M	9420	15	17.4	4.8	97	5	100
18Y3092	M	9410	16	18.5	4.8	98	5	101
18Y3022	M	9400	17	19.5	4.8	95	5	97
18Y3021	M	9350	18	17.7	4.8	95	20	95
18Y3127	M	9180	19	18.8	4.8	98	58	98
18Y2016	S	9100	20	16.5	4.9	95	90	97
18Y2012	S	9060	21	15.3	4.8	93	93	99
18Y2045	S	9030	22	15.9	4.7	88	65	100
17Y3144	M	9020	23	19.6	4.8	97	75	99
16Y3088	M	9000	24	16.8	4.8	97	50	101
17Y3089	M	8040	25	20.8	4.7	97	15	101
CM-101	S	7830	26	13.1	4.8	86	98	100
CH-201	S	7480	27	13.8	4.9	97	93	101
CT-202	L	6410	28	13.8	4.8	97	5	98
MEAN		9260		17.5	4.8	94	39	99
CV(%)		6.6		5.2	0.2	0.9	54.6	1.8
LSD(0.05)		1250		1.9	0.13	1.8	44.1	3.6

S = short; M = medium; L = long.

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

Subjective rating of 0-100 where 0 = none and 100 = completely lodged.

Table 13. 2019 Colusa Early Rice Variety Trials

4 Rep Advanced Lines and Varieties

Variety	Grain Type	Grain Yield at 14% Moisture lbs/ac		Grain Moisture at Harvest (%)	Seedling Vigor (1-5)	Days to 50% Heading	Lodging (0-100)	Plant Height (cm)
		Yield	Rank					
14Y1006	L	11300	1	16.3	4.7	87	14	99
L-207	L	10890	2	16.1	4.8	93	23	106
CJ-201	L	10210	3	15.8	4.8	98	6	95
S-202	S	9980	4	17.2	4.7	95	93	95
L-206	L	9970	5	15.2	4.8	91	18	91
A-202	L	9890	6	16.3	4.8	94	4	103
12Y2175	M	9830	7	20.4	4.7	98	33	105
M-105	M	9430	8	19.5	4.7	86	86	105
M-206	M	9380	9	19.3	4.7	90	53	104
M-209	M	9320	10	20.0	4.8	99	13	102
15Y2100	S	8940	11	18.5	4.7	97	71	100
S-102	S	8870	12	16.0	4.7	89	88	103
17Y3000	M	8780	13	19.7	4.8	90	53	98
CA-201	S	7930	14	15.9	4.8	89	95	97
MEAN		9620		17.6	4.7	92	46	100
CV		7.4		3.8	0.2	1.8	36.8	2.8
LSD (.05)		1020		1.0	0.08	2.3	24.3	4.0

2 Rep Advanced Lines and Varieties

17Y1027	L	10610	1	16.1	4.8	93	3	104
16Y1154	L	10520	2	17.4	4.7	92	0	108
15Y2112	S	10320	3	21.4	4.8	95	95	94
17Y1083	L	9840	4	18.1	4.7	97	5	94
18Y117	S	9500	5	20.2	4.8	91	88	97
CH-202	S	9340	6	16.9	4.7	89	95	92
15Y2135	S	9250	7	22.9	4.8	97	60	98
19Y4000	M	9070	8	19.2	4.8	89	18	101
17Y3047	M	9060	9	19.9	4.8	96	0	94
M-104	M	8980	10	18.5	4.8	84	93	94
M-205	M	8960	11	21.0	4.8	99	20	94
16Y2028	S	8460	12	18.6	4.8	94	93	110
CM-203	S	8430	13	24.4	4.8	94	95	109
17Y3158	M	8270	14	22.1	4.8	96	60	101
MEAN		9330		19.8	4.8	93	52	99
CV		11.6		3.4	0.3	1.3	14.3	3.1
LSD (.05)		2340		1.4	0.10	2.6	16.0	6.7

2 Rep Preliminary Lines and Varieties

18Y3022	M	10680	1	19.7	4.8	95	5	99
18Y1024	L	10590	2	15.9	4.7	94	3	89
18Y3018	M	9960	3	21.6	4.8	94	13	106
17Y1085	L	9930	4	16.7	4.8	97	3	91
18Y3102	M	9920	5	21.3	4.8	92	5	100
18Y3021	M	9820	6	20.1	4.7	94	55	101
18Y3075	M	9790	7	21.0	4.8	94	10	101
18Y3127	M	9710	8	21.9	4.7	99	25	98
18Y3098	M	9620	9	22.2	4.7	93	63	105
17Y3075	M	9440	10	20.8	4.8	90	38	105
18Y2025	S	9390	11	23.6	4.9	97	93	98
18Y3126	M	9380	12	20.7	4.7	95	8	103
18Y3092	M	9290	13	22.4	4.7	98	0	98
18Y3011	M	9220	14	19.5	4.7	96	0	97
17Y3089	M	9130	15	21.0	4.7	97	10	104
M-210	M	9100	16	19.6	4.8	89	45	103
16Y3088	M	9030	17	21.4	4.8	94	18	102
18Y2070	S	8800	18	21.1	4.8	95	45	104
18Y3065	M	8720	19	20.7	4.7	98	10	101
18Y3123	M	8700	20	20.6	4.8	97	0	99
CH-201	S	8530	21	17.4	4.8	96	90	94
18Y3010	M	8430	22	21.9	4.7	96	28	101
17Y3144	M	8410	23	21.3	4.8	98	20	99
CM-101	S	8330	24	16.6	4.7	90	85	102
18Y2045	S	8220	25	19.7	4.8	95	53	102
18Y2012	S	8210	26	20.3	4.8	96	90	104
18Y2016	S	7950	27	23.3	4.9	96	93	103
CT-202	L	6520	28	15.1	4.8	97	0	90
MEAN		9100		20.3	4.7	95	32	100
CV(%)		9.3		4.3	0.0	0.8	45.1	2.7
LSD(0.05)		1730		1.8	0.09	1.7	29.8	5.5

S = short; M = medium; L = long.

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

Subjective rating of 0-100 where 0 = none and 100 = completely lodged.

Table 14. Grain Yield (lb/acre @14% moisture) Summary of Early Rice Varieties by Location and Year (2015-2019)

Location	Year	Calhikari						
		201	S102	M105	M205	M206	M209	L207
Biggs (RES)	2015	8580	10050	8610	8720	9620	9490	10550
	2016	7310	9020	10380	10690	10780	10950	11220
	2017	9210	10460	10300	10640	9770	10490	11070
	2018	8510	8220	9360	9280	9050	10640	10120
	2019	8810	8970	10160	9760	9210	9520	10430
Location Mean		8484	9344	9762	9818	9686	10218	10678
Butte	2015	7180	8810	9350	7780	9370	8580	9130
	2016	8080	9480	10060	9640	10400	10220	10960
	2017	7810	8180	8910	9670	9330	9350	9750
	2018	6720	7980	8350	8540	8270	7990	9420
	2019	9010	8840	9820	9260	9660	9180	10390
Location Mean		7760	8658	9298	8978	9406	9064	9930
Colusa	2015	8940	9200	10500	10050	9850	10490	11160
	2016	8590	9050	10390	9730	9960	9600	10600
	2017	7610	6920	7390	8040	7530	7850	9410
	2018	7290	8010	8470	8540	8960	9120	10000
	2019	8530	8870	9430	8960	9380	9320	10890
Location Mean		8192	8410	9236	9064	9136	9276	10412
Loc/Years Mean		8145	8804	9432	9287	9409	9519	10340

Table 15. 2019 Three Location Intermediate-Late Variety Trials

4 Rep Advanced Lines and Varieties

Variety	Grain Type	Single Location Yields							
		Over All Ave Grain Yield at 14% Moisture lbs/ac		Biggs		Butte		Glenn	
		Yield	Rank	Yield	Rank	Yield	Rank	Yield	Rank
14Y1006	L	10700	1	11330	2	10130	1	10630	2
S-202	S	10430	2	10260	4	9970	2	11070	1
L-207	L	10320	3	11450	1	9750	3	9760	5
L-206	L	9660	4	10020	6	8890	11	10080	3
A-202	L	9650	5	10010	7	9220	5	9720	6
12Y2175	M	9520	6	10160	5	8930	10	9460	9
CJ-201	L	9480	7	10470	3	8510	13	9460	8
M-105	M	9460	8	9210	11	9220	6	9940	4
17Y3000	M	9420	9	9200	12	9420	4	9640	7
M-209	M	9360	10	9650	8	9120	7	9310	10
15Y2100	S	9250	11	9520	9	8950	9	9280	11
M-206	M	9130	12	9480	10	8970	8	8950	12
S-102	S	8800	13	8870	13	8750	12	8780	13
CA-201	S	7190	14	6400	14	7440	14	7740	14
MEAN		9450		9720		9090		9560	
CV		6.6		7.5		4.6		7.2	
LSD (.05)		820		1050		600		980	

2 Rep Advanced Lines and Varieties

17Y1027	L	10460	1	11370	1	9710	2	10300	3
16Y1154	L	10300	2	11140	2	9760	1	9970	6
CM-203	S	9850	3	9430	8	9360	3	10760	1
17Y1083	L	9590	4	9640	7	9140	7	10010	5
18Y117	S	9550	5	9100	13	9030	8	10520	2
15Y2135	S	9470	6	9670	6	9230	5	9500	10
19Y4000	M	9420	7	9380	9	9200	6	9680	7
17Y3158	M	9420	8	10020	3	8650	13	9590	9
16Y2028	S	9270	9	9860	5	9000	9	8950	13
17Y3047	M	9270	10	9910	4	8850	10	9050	12
M-104	M	9260	11	9190	10	9290	4	9310	11
CH-202	S	9040	12	9160	11	8280	14	9670	8
M-205	M	9010	13	8220	14	8740	12	10080	4
15Y2112	S	8900	14	9110	12	8830	11	8770	14
MEAN		9490		9660		9080		9730	
CV		8.1		9.2		4.1		9.3	
LSD (.05)		890		1930		810		1950	

2 Rep Preliminary Lines and Varieties

18Y3291	M	9750	1	9690	14	9240	8	10300	1
18Y3215	M	9740	2	10490	2	9240	9	9480	14
18Y3292	M	9730	3	10330	3	9250	6	9600	10
18Y3297	M	9690	4	10240	6	9120	13	9710	8
18Y3141	M	9680	5	10330	4	9240	7	9480	15
18Y3240	M	9680	6	9700	13	9120	12	10220	2
18Y3125	M	9600	7	9460	18	9130	11	10200	3
18Y3130	M	9540	8	10140	8	9160	10	9310	18
18Y3131	M	9520	9	10160	7	8470	23	9940	4
17Y3155	M	9470	10	9490	16	9360	5	9550	12
18Y3196	M	9470	11	9850	12	8790	20	9760	7
18Y3226	M	9460	12	10020	10	8580	22	9780	6
M-210	M	9410	13	8910	24	9820	1	9490	13
18Y3136	M	9410	14	10010	11	8940	16	9270	19
18Y3305	M	9340	15	10250	5	9000	15	8770	23
18Y3150	M	9320	16	8660	25	9400	3	9910	5
18Y3255	M	9310	17	8940	23	9410	2	9570	11
18Y3214	M	9290	18	9460	17	8750	21	9660	9
18Y3252	M	9240	19	9660	15	9370	4	8700	24
18Y3151	M	9210	20	10770	1	7850	26	9000	21
18Y3140	M	9210	21	9410	19	8860	19	9350	16
18Y3134	M	9170	22	9310	20	8870	18	9330	17
18Y3132	M	9120	23	9290	21	8920	17	9160	20
17Y2020	M	8990	24	10130	9	8140	25	8700	25
18Y3245	M	8980	25	9040	22	9060	14	8840	22
CH-201	S	8080	26	8140	27	8270	24	7820	27
CM-101	S	7750	27	7440	28	7590	27	8210	26
CT-202	L	7470	28	8460	26	7270	28	6680	28
MEAN		9240		9560		8870		9280	
CV(%)		6.6		6.7		4.2		8.2	
LSD(0.05)		860		1310		760		1570	

S = short; M = medium; L = long.

Table 16. 2019 Biggs Intermediate-Late Variety Trials

4 Rep Advanced Lines and Varieties

Variety	Grain Type	Grain Yield at 14% Moisture lbs/ac						
		Yield	Rank	Grain Moisture at Harvest (%)	Seedling Vigor (1-5)	Days to 50% Heading	Lodging (0-100)	Plant Height (cm)
L-207	L	11450	1	15.9	4.8	83	1	112
14Y1006	L	11330	2	16.1	4.8	77	10	104
CJ-201	L	10470	3	15.2	4.9	82	1	100
S-202	S	10260	4	16.2	4.8	76	7	97
12Y2175	M	10160	5	18.9	4.9	82	0	108
L-206	L	10020	6	15.5	4.8	78	10	96
A-202	L	10010	7	17.6	4.8	81	0	106
M-209	M	9650	8	19.5	4.8	83	0	100
15Y2100	S	9520	9	13.0	4.8	79	6	102
M-206	M	9480	10	18.5	4.9	76	24	104
M-105	M	9210	11	17.9	4.8	74	2	100
17Y3000	M	9200	12	19.0	4.8	76	9	103
S-102	S	8870	13	12.1	5.0	73	40	99
CA-201	S	6400	14	14.9	4.7	80	43	102
MEAN		9720		16.4	4.8	78	11	102
CV		7.5		11.8	0.0	2.5	131.1	5.1
LSD (.05)		1050		2.8	0.12	2.8	20.3	7.5

2 Rep Advanced Lines and Varieties

17Y1027	L	11370	1	17.2	4.8	80	0	107
16Y1154	L	11140	2	16.1	4.7	83	0	119
17Y3158	M	10020	3	18.2	4.9	81	0	103
17Y3047	M	9910	4	17.5	5.0	81	0	102
16Y2028	S	9860	5	12.6	4.8	77	48	104
15Y2135	S	9670	6	19.5	4.8	80	9	103
17Y1083	L	9640	7	14.2	4.8	81	0	86
CM-203	S	9430	8	13.2	4.9	76	9	97
19Y4000	M	9380	9	18.8	4.9	74	10	107
M-104	M	9190	10	17.4	4.8	73	21	103
CH-202	S	9160	11	15.0	4.9	77	25	98
15Y2112	S	9110	12	16.6	4.9	80	0	94
18Y117	S	9100	13	19.0	4.8	76	30	100
M-205	M	8220	14	16.1	5.0	83	0	92
MEAN		9660		16.5	4.8	78	11	101
CV		9.2		9.2	2.3	1.7	121.5	4.6
LSD (.05)		1930		3.3	0.24	2.9	28.4	10.0

2 Rep Preliminary Lines and Varieties

18Y3151	M	10770	1	20.4	4.7	84	0	107
18Y3215	M	10490	2	20.9	4.9	83	0	104
18Y3292	M	10330	3	18.4	4.9	84	0	103
18Y3141	M	10330	4	19.7	4.9	84	0	102
18Y3305	M	10250	5	18.9	4.9	83	0	110
18Y3297	M	10240	6	19.1	4.8	83	0	100
18Y3131	M	10160	7	20.6	4.8	84	0	108
18Y3130	M	10140	8	20.7	4.8	84	0	107
17Y2020	M	10130	9	17.5	4.8	83	0	104
18Y3226	M	10020	10	18.4	4.7	83	0	104
18Y3136	M	10010	11	18.4	4.9	83	0	104
18Y3196	M	9850	12	18.2	4.7	82	0	104
18Y3240	M	9700	13	19.0	4.8	83	0	101
18Y3291	M	9690	14	18.8	4.8	83	0	100
18Y3252	M	9660	15	16.9	4.9	85	18	96
17Y3155	M	9490	16	19.2	4.8	80	0	104
18Y3214	M	9460	17	17.8	4.9	82	0	96
18Y3125	M	9460	18	17.7	4.8	82	0	96
18Y3140	M	9410	19	17.5	4.8	84	0	100
18Y3134	M	9310	20	17.2	4.7	83	0	95
18Y3132	M	9290	21	16.8	4.8	84	0	99
18Y3245	M	9040	22	17.0	4.9	82	0	105
18Y3255	M	8940	23	17.0	4.9	82	0	101
M-210	M	8910	24	18.1	4.9	73	11	105
18Y3150	M	8660	25	16.9	5.0	81	0	99
CT-202	L	8460	26	15.1	4.7	83	3	101
CH-201	S	8140	27	14.5	4.8	82	55	98
CM-101	S	7440	28	12.6	4.9	75	48	98
MEAN		9560		18.0	4.8	82	5	102
CV(%)		6.7		10.6	0.2	1.3	283.2	5.0
LSD(0.05)		1310		3.9	0.18	2.3	27.8	10.4

S = short; M = medium; L = long.

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

Subjective rating of 0-100 where 0 = none and 100 = completely lodged.

Table 17. 2019 Butte Intermediate-Late Variety Trials

4 Rep Advanced Lines and Varieties

Variety	Grain Type	Grain Yield at 14% Moisture lbs/ac		Grain Moisture at Harvest (%)	Seedling Vigor (1-5)	Days to 50% Heading	Lodging (0-100)	Plant Height (cm)
		Yield	Rank					
14Y1006	L	10130	1	15.8	4.8	87	41	94
S-202	S	9970	2	17.8	4.7	89	94	94
L-207	L	9750	3	15.9	4.8	91	59	104
17Y3000	M	9420	4	21.5	4.8	87	63	98
A-202	L	9220	5	17.4	4.8	90	26	100
M-105	M	9220	6	19.9	4.8	86	65	100
M-209	M	9120	7	21.2	4.8	95	15	100
M-206	M	8970	8	21.3	4.8	86	60	102
15Y2100	S	8950	9	16.8	4.8	93	88	98
12Y2175	M	8930	10	20.6	4.8	95	18	97
L-206	L	8890	11	15.2	4.8	89	54	93
S-102	S	8750	12	15.5	4.7	87	74	98
CJ-201	L	8510	13	13.7	4.8	94	59	92
CA-201	S	7440	14	15.9	4.9	91	88	97
MEAN		9090		17.7	4.8	90	57	97
CV		4.6		5.6	0.0	2.1	31.2	3.8
LSD (.05)		600		1.4	0.06	2.7	25.6	5.3

2 Rep Advanced Lines and Varieties

16Y1154	L	9760	1	15.7	4.8	94	63	107
17Y1027	L	9710	2	16.7	4.8	89	3	104
CM-203	S	9360	3	20.8	4.7	96	78	97
M-104	M	9290	4	16.8	4.7	83	68	95
15Y2135	S	9230	5	19.3	4.8	97	13	94
19Y4000	M	9200	6	20.9	4.8	86	68	102
17Y1083	L	9140	7	19.1	4.8	97	10	93
18Y117	S	9030	8	19.3	4.8	89	95	94
16Y2028	S	9000	9	18.2	4.8	91	95	101
17Y3047	M	8850	10	18.6	4.8	89	3	94
15Y2112	S	8830	11	21.6	4.8	95	98	93
M-205	M	8740	12	20.3	4.8	97	3	95
17Y3158	M	8650	13	20.3	4.8	89	38	101
CH-202	S	8280	14	18.0	4.7	89	95	92
MEAN		9080		19.0	4.8	91	52	97
CV		4.1		7.1	0.4	1.3	12.4	2.9
LSD (.05)		810		2.9	0.12	2.5	13.9	6.1

2 Rep Preliminary Lines and Varieties

M-210	M	9820	1	20.0	4.8	87	43	103
18Y3255	M	9410	2	20.8	4.8	94	10	99
18Y3150	M	9400	3	21.7	4.8	95	8	97
18Y3252	M	9370	4	21.3	4.8	97	5	103
17Y3155	M	9360	5	24.6	4.8	94	90	106
18Y3292	M	9250	6	21.7	4.8	95	3	99
18Y3141	M	9240	7	21.2	4.7	96	3	96
18Y3291	M	9240	8	22.4	4.7	96	5	97
18Y3215	M	9240	9	20.8	4.8	95	13	101
18Y3130	M	9160	10	22.6	4.8	95	20	102
18Y3125	M	9130	11	21.9	4.8	95	3	97
18Y3240	M	9120	12	20.9	4.8	96	5	99
18Y3297	M	9120	13	21.5	4.8	95	5	102
18Y3245	M	9060	14	20.8	4.8	96	10	104
18Y3305	M	9000	15	20.3	4.8	94	8	103
18Y3136	M	8940	16	23.4	4.8	95	3	105
18Y3132	M	8920	17	19.9	4.8	93	25	104
18Y3134	M	8870	18	20.6	4.7	94	10	100
18Y3140	M	8860	19	22.3	4.8	96	3	101
18Y3196	M	8790	20	21.7	4.8	96	5	94
18Y3214	M	8750	21	21.9	4.8	95	53	100
18Y3226	M	8580	22	22.5	4.8	94	15	103
18Y3131	M	8470	23	19.1	4.8	96	75	104
CH-201	S	8270	24	17.6	4.8	95	93	102
17Y2020	M	8140	25	22.1	4.8	95	58	99
18Y3151	M	7850	26	20.0	4.8	97	78	101
CM-101	S	7590	27	18.8	4.7	89	68	105
CT-202	L	7270	28	16.7	4.8	95	3	97
MEAN		8870		21.0	4.8	94	25	101
CV(%)		4.2		3.7	0.6	1.3	49.2	1.9
LSD(0.05)		760		1.6	0.12	2.5	25.7	3.9

S = short; M = medium; L = long.

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

Subjective rating of 0-100 where 0 = none and 100 = completely lodged.

Table 18. 2019 Glenn Intermediate-Late Variety Trials

4 Rep Advanced Lines and Varieties

Variety	Grain Type	Grain Yield at 14% Moisture lbs/ac		Grain Moisture at Harvest (%)	Seedling Vigor (1-5)	Days to 50% Heading	Lodging (0-100)	Plant Height (cm)
		Yield	Rank					
S-202	S	11070	1	12.7	4.7	94	93	95
14Y1006	L	10630	2	12.0	4.8	94	40	99
L-206	L	10080	3	12.9	4.8	94	46	94
M-105	M	9940	4	13.8	4.8	92	58	106
L-207	L	9760	5	12.2	4.8	92	56	105
A-202	L	9720	6	12.9	4.8	96	14	99
17Y3000	M	9640	7	13.8	4.8	92	55	100
CJ-201	L	9460	8	12.4	4.8	98	40	97
12Y2175	M	9460	9	13.8	4.8	97	53	104
M-209	M	9310	10	13.2	4.8	99	28	100
15Y2100	S	9280	11	12.2	4.8	95	56	99
M-206	M	8950	12	13.6	4.8	93	71	106
S-102	S	8780	13	12.8	4.8	86	81	98
CA-201	S	7740	14	12.2	4.8	94	60	96
MEAN		9560		12.9	4.8	94	54	100
CV		7.2		3.8	0.2	1.2	44.1	1.4
LSD (.05)		980		0.7	0.06	1.6	33.8	2.0

2 Rep Advanced Lines and Varieties

CM-203	S	10760	1	13.1	4.8	92	80	103
18Y117	S	10520	2	14.9	4.8	92	95	97
17Y1027	L	10300	3	12.4	4.8	93	13	104
M-205	M	10080	4	14.9	4.8	100	40	94
17Y1083	L	10010	5	12.6	4.8	95	3	95
16Y1154	L	9970	6	12.2	4.8	92	38	107
19Y4000	M	9680	7	13.2	4.7	93	25	101
CH-202	S	9670	8	12.8	4.8	94	100	93
17Y3158	M	9590	9	13.7	4.8	95	30	104
15Y2135	S	9500	10	13.8	4.8	95	80	101
M-104	M	9310	11	14.2	4.8	87	90	93
17Y3047	M	9050	12	13.6	4.8	94	5	99
16Y2028	S	8950	13	13.7	4.8	92	100	107
15Y2112	S	8770	14	15.6	4.8	95	100	93
MEAN		9730		13.6	4.8	93	57	99
CV		9.3		7.1	0.0	1.1	30.5	1.3
LSD (.05)		1950		2.1	0.04	2.2	37.5	2.8

2 Rep Preliminary Lines and Varieties

18Y3291	M	10300	1	13.9	4.7	99	63	99
18Y3240	M	10220	2	13.5	4.8	100	38	98
18Y3125	M	10200	3	14.0	4.8	98	35	100
18Y3131	M	9940	4	13.0	4.8	98	70	104
18Y3150	M	9910	5	13.2	4.8	99	10	97
18Y3226	M	9780	6	12.9	4.8	99	43	99
18Y3196	M	9760	7	13.2	4.8	97	8	96
18Y3297	M	9710	8	13.8	4.8	97	13	102
18Y3214	M	9660	9	14.1	4.8	98	25	99
18Y3292	M	9600	10	14.0	4.8	99	15	99
18Y3255	M	9570	11	13.5	4.8	99	3	104
17Y3155	M	9550	12	13.4	4.8	95	70	105
M-210	M	9490	13	13.7	4.8	91	23	103
18Y3215	M	9480	14	12.9	4.8	99	8	103
18Y3141	M	9480	15	13.0	4.8	100	20	97
18Y3140	M	9350	16	14.8	4.8	99	3	99
18Y3134	M	9330	17	14.0	4.8	99	5	97
18Y3130	M	9310	18	13.1	4.8	98	10	103
18Y3136	M	9270	19	13.4	4.8	100	13	105
18Y3132	M	9160	20	13.6	4.8	98	23	105
18Y3151	M	9000	21	14.7	4.8	101	80	103
18Y3245	M	8840	22	14.4	4.8	97	28	106
18Y3305	M	8770	23	13.3	4.7	99	18	102
18Y3252	M	8700	24	14.4	4.8	101	13	105
17Y2020	M	8700	25	14.0	4.8	99	85	101
CM-101	S	8210	26	12.4	4.8	87	90	100
CH-201	S	7820	27	12.5	4.9	95	85	99
CT-202	L	6680	28	12.1	4.8	96	0	95
MEAN		9280		13.5	4.8	98	32	101
CV(%)		8.2		5.5	0.5	1.4	44.3	1.3
LSD(0.05)		1570		1.5	0.10	2.8	28.9	2.6

S = short; M = medium; L = long.

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

Subjective rating of 0-100 where 0 = none and 100 = completely lodged.

Table 19. Grain Yield (lb/acre @14% moisture) Summary of Intermediate/Late Rice Varieties by Location and Year (2015-2019)

Location	Year	M205	M209	L206
Biggs (RES)	2015	9880	9880	9520
	2016	9460	9900	10490
	2017	10590	10350	10520
	2018	9530	9760	9540
	2019	8220	9650	10020
Location Mean		9536	9908	10018
Butte	2016	9110	9010	9530
	2017	8550	8480	8980
	2018	9200	9580	9530
	2019	8740	9120	8890
Location Mean		8900	9048	9233
Glenn	2015	9420	9700	9910
	2016	8490	8520	9290
	2017	8500	8200	7560
	2018	9840	9990	9260
	2019	10080	9310	10080
Location Mean		9266	9144	9220
Loc/Years Mean		9234	9367	9490