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COMPREHENSIVE RESEARCH ON RICE
 January 1, 2019 – March 31, 2020

PROJECT TITLE: Cooperative Extension Rice Variety Adaptation and Cultural Practice Research

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OBJECTIVES AND EXPERIMENTS CONDUCTED BY LOCATION TO ACCOMPLISH OBJECTIVES:

Objective I

To evaluate newly developed cultivars and existing varieties in on-farm trials under grower conditions in cooperation with the Rice Experiment Station for the purpose of new variety development and release. Cultivar trials were conducted by maturity group at different locations in the Sacramento Valley. Several experimental cultivars were evaluated at each location within these groups to compare their performance in different environments of the rice-growing region. All sites were water seeded.

Very Early Maturity Group Zone 3: Uniform trials for each of the advanced and experimental lines were conducted at the following on-farm sites: the Lauppe Ranch (south Sutter County), the Erdman Ranch (District 108, Yolo County), the Rehman Ranch (south Yolo County), and the Bosworth Ranch (District 10, Yuba County). In addition to the five on-farm sites, an additional tests were conducted at the Rice Experiment Station (RES) in Butte County. The four-replication advanced test at each site included 14 entries (10 commercial varieties and four advanced breeding lines). The two-replication advanced test included fourteen entries (4 commercial varieties 10 breeding lines). The two-replication preliminary tests included 28 entries (four commercial varieties as checks and 24 preliminary breeding lines).

Early Maturity Group Zone 2: Uniform tests were conducted at each of the following on-farm sites: the Larrabee Ranch (Glenn County) and the Dennis Ranch (Colusa County). One additional trial consisting of a four-replication advanced, two-replication advanced, and two-replication preliminary, were conducted at the RES. The four-replication advanced test at each site included 14 entries (ten commercial varieties and 4 advanced breeding lines). The two-replication advance included fourteen entries (4 commercial varieties and 10 breeding lines). The preliminary tests included 28 entries (four commercial varieties and 24 preliminary breeding lines) in two replications.

Intermediate and Late Maturity Group Zone 1: Uniform tests were conducted at each of the following on-farm sites: the Wiley Ranch (Glenn County) and the Schohr Ranch (Butte County). One additional test was conducted at the RES. The four-replication advanced test at each site included 14 entries (10 commercial varieties and four advanced breeding lines). The two-replication advance included 14 entries (four commercial varieties and 10 breeding lines). The preliminary tests included 28 entries (four commercial varieties and 24 preliminary breeding lines) in two replications.

Objective II

Extension-Based Equipment and Service: A centrally based equipment pool is maintained by Project RM-2 to provide services for planting, fertilizing, treatment application, and harvesting of rice. The RM-2 project provides professional and technical assistance to UC researchers engaged in rice.

To provide professional and technical assistance to other UC research project leaders, we assisted in approximately 20 trials including the 8 variety tests. Equipment from the UCCE-based pool for planting and harvesting field experiments was used at 12 sites at different times during the season. The most heavily used equipment was the ALMACO combine. Both of the rice combines were maintained according to the established maintenance schedules.

The ALMACO rice combine was used to harvest all 8 statewide trials, and RES trials were harvested with their ALMACO combine. The SWECO harvester was used to harvest a small trial of test plots at the RES.

Objective III

Extension Education: We disseminated research-based information to California rice producers, dryer operators, millers and the general public through four winter grower meetings, field demonstrations, personal communication, and other printed material. We hosted the annual Rice Breeder's Field Tour. The UCCE rice website is online and new materials are being added as they become available.

SUMMARY OF 2019 RESEARCH BY OBJECTIVE

Objective I - Rice Variety Evaluation

Eight uniform breeding line trials consisting of four-replication advance, two-replication advance, and two-replication preliminary were conducted throughout the major rice producing areas of California. The rice breeders at the RES conducted three additional tests, one from each of the three growing zones. Many of the experimental lines have been tested and screened in previous years and many lines were in advanced stages (2 or more years) of testing. The RES provided the seed for public varieties and experimental cultivars. No proprietary lines were tested.

The following analyses provide single-location yield summaries for the advanced and preliminary line tests and over-location agronomic performance summaries for each entry in each maturity category. For quick reference, grain yields of selected commercially available varieties tested in very early zone 3, early zone 2, and intermediate-late zone 1 tests across years and locations are summarized in Tables 7, 12 and 17. An Agronomy Progress Report, to be published early next year, will provide agronomic performance results for all entries in each experiment.

Very Early Zone 3 Tests: Ten commercial varieties and four advanced breeding lines were compared in five four-replication advanced tests. Four commercial and 10 breeding lines were compared in five two replication advance tests. The two-replication preliminary tests evaluated four commercial varieties and 24 preliminary lines at each location. Commercial varieties at each location included S102, S202, CA201, CH201, CH202, CM101, CM203, M104, M105, M205, M206, M209, M210, A202, CJ201, CT202, L206, and L207.

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 1-6). 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 1). 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.

Comparing the commercial standard entries over a 5-year period and across locations M105, M206, and L206 were the three highest yielding varieties (Table 7).

Early Maturity Tests Zone 2: Ten commercial varieties and four advanced breeding lines were compared in three four-replication advanced tests, and four commercial and 10 breeding lines were compared in three two-replication advance tests. The two-replication preliminary tests evaluated four commercial varieties and 24 preliminary lines at each location. Commercial varieties at each location included S102, S202, CA201, CH201, CH202, CM101, CM203, M104, M105, M205, M206, M209, M210, A202, CJ201, CT202, L206, and L207.

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 7-11). Advanced long grain 14Y1006 was the highest yielding entry (11,380 lbs./ac) when averaged over three locations in 2019 (Table 7). 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 7). 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.

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 (Table 12).

Intermediate-Late Maturity Tests Zone 1: Ten commercial varieties and four advanced breeding lines were compared in three four-replication advanced tests. Four commercial and 10 breeding lines were compared in three two replication advance tests. The two-replication preliminary tests evaluated four commercial varieties and 24 preliminary lines at each location. Commercial varieties at each location included S102, S202, CA201, CH201, CH202, CM101, CM203, M104, M105, M205, M206, M209, M210, A202, CJ201, CT202, L206, and L207.

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 13-16). 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 13). 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 17).

Objective II - Assistance to Other Projects

Both the UC SWECO and ALMACO plot combines were serviced and maintained during the harvest season. The ALMACO was used to harvest all rice trials, with the SWECO was not used to harvest any trials in 2019.

The rice equipment pool including a precision Clampco fertilizer applicator, SWECO 324 plot combine, ALMACO SP40 plot combine, moisture meters, remote temperature stations, and other equipment were available for use along with personnel to provided technical assistance for numerous field experiments in 2019. Equipment from the UCCE-based pool for planting and harvesting field experiments was used at 12 sites at different times during the season. The ALMACO was used to harvest 8 variety tests and various trials around the rice growing region and at the RES. Over 1,800 experimental plots were harvested in 2019. In addition to equipment assistance to other projects, labor from this project was used to plant, collect samples, and monitor growth in several field experiments. Assistance was also provided to four winter rice growers meetings, the RES Rice Field Day, the annual Rice Breeder's field tour, and to the several UC campus based Rice Research Board meetings held each year.

The following extension education materials were designed, formatted and printed with support from this project:

1. The Annual Agronomy Progress Report No. 327 "California Rice Varieties: Description and Performance Summary of the 2018 Multiyear Statewide Rice Variety Tests in California".
2. The UCCE website is online and is continually being updated.

Recent relevant Publications and Reports:

1. Espe, M. H. Yang, K.G. Cassman, N. Guilpart, H. Sharifi, and B.A. Linquist (2016) Estimating yield potential in temperate high-yielding, direct-seeded rice US rice production systems. *Field Crops Research* 193:123-132.
2. Espe, M, K.G. Cassman, H. Yang, N. Guilpart, P. Grassini, J. Van Wart, M. Anders, D. Beighley, D. Harrell; S. Linscombe, K. McKenzie, R. Mutters, L.T. Wilson, B.A. Linquist. (2016) Yield gap analysis of US rice production systems shows opportunities for improvement. *Field Crops Research* 196:276-283.
3. Sharifi, H., R.J. Hijmans, J.E. Hill, B. Linquist. (2017) Using stage-dependent temperature parameters to improve phenological model prediction accuracy in rice (*Oryza sativa*) models. *Crop Science* 57:444-453.
4. Espe, M.B., J.E. Hill, K. McKenzie, R.J. Hijmans, L.A. Espino, R. Mutters, M. Lienfelder-Miles; C. van Kessel, B.A. Linquist. (2017) Point stresses during reproductive stage rather than warming seasonal temperature determines yield in temperate rice. *Global Change Biology* 23:4386-4395 DOI: 10.1111/gcb.13719.

CONCISE GENERAL SUMMARY OF CURRENT YEAR'S RESULTS:

Eight on-farm rice variety evaluation trials were conducted throughout the rice growing region of California, with standard varieties compared to preliminary and advanced lines across a range of environments, cultural practices, and disease levels. Three similar tests were conducted at the RES in Biggs, CA. Average yields across varieties and locations in the four-replication advanced line tests ranged from 9,540 lbs./acre in the early zone 2 tests to 8,790 lbs./acre in the very early zone 3 tests. In the intermediate/late zone 1 tests the four-replication advanced lines average yield was 9,450 lbs./acre. Field preparation and planting were mixed this year because of heavy rain in the middle of May. Rice was planted

into the second week of June in 2019. Several advanced lines in 2019 produced high yields as well as demonstrating important breeding goals aside from yield (disease resistance, grain quality, specialty types, etc.). Testing advanced and preliminary lines under a variety of conditions remains a critical aspect of releasing varieties adapted to changing cultural practices, markets, and pests.

Project RM-2 was involved in the planting, sampling and harvesting of more than 12 trial sites throughout the rice growing areas. This project was also involved in several educational activities including the winter rice grower meetings, the RES rice field day, promoting work through fact sheets and publications, and updating of the UCCE rice website.

Table 1. 2019 Five Location Very Early Rice Variety Trials

4 Rep Advanced Lines and Varieties

Variety	Grain Type	Over All Ave Grain Yield at 14% Moisture lbs/ac		Single Location Yields									
		Yield	Rank	Biggs		Sutter		Yolo		South Yolo		Yuba	
				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 2. 2019 Biggs 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	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 3. 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
CI-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 4. 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 5. 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					
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 6. 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 7. 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 8. 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 9. 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 10. 2019 Butte 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	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 11. 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 12. 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 13. 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 14. 2019 Biggs 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					
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 15. 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 16. 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 17. 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
<u>Location Mean</u>		9536	9908	10018
Butte	2016	9110	9010	9530
	2017	8550	8480	8980
	2018	9200	9580	9530
	2019	8740	9120	8890
<u>Location Mean</u>		8900	9048	9233
Glenn	2015	9420	9700	9910
	2016	8490	8520	9290
	2017	8500	8200	7560
	2018	9840	9990	9260
	2019	10080	9310	10080
<u>Location Mean</u>		9266	9144	9220
Loc/Years Mean		9234	9367	9490