

**ANNUAL REPORT**  
**COMPREHENSIVE RESEARCH ON RICE**

January 1, 2022 – March 31, 2023

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

**PROJECT LEADER:**

Bruce A. Linquist, Specialist in UCCE, UC Davis

**PRINCIPAL UC INVESTIGATORS:**

W.B. Brim-DeForest, UCCE Farm Advisor, Placer, Sacramento, Sutter, Yuba

L.A. Espino, UCCE Farm Advisor, Butte, Glenn

M.M. Leinfelder-Miles, UCCE Farm Advisor, San Joaquin

J.R. Stogsdill, Staff Research Associate, UCCE/UC Davis

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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 zones 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.

**Zone 1:** One uniform on-farm test was conducted at the Gordon Ranch (Glenn County). The four-replication advanced test at this site included 13 entries (seven commercial varieties and six advanced breeding lines). The two-replication advance test included 23 entries (eight commercial varieties and 15 breeding lines). The preliminary test included 21 entries (2 commercial varieties and 19 preliminary breeding lines) in two replications.

**Zone 2:** Uniform tests were conducted at each of the following on-farm sites: the Larrabee Ranch (Glenn/Butte County) and the Schohr Ranch (south Butte County). One additional trial consisting of a four-replication advanced, two-replication advanced, and two-replication preliminary, was conducted at the RES. The four-replication advanced tests at each site included 13 entries (seven commercial varieties and six advanced breeding lines). The two-replication advance tests included twenty-three entries (8 commercial varieties and 15 breeding lines). The preliminary tests included 21 entries (two commercial varieties and 19 preliminary breeding lines) in two replications.

**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 Del Rio Ranch (San Joaquin County), and the Rue Ranch (District 10, Yuba County). The Del Rio Ranch is the only drill seeded test in the Statewide Variety Trials. The four-replication advanced tests at each site included 13 entries (7 commercial varieties and six advanced breeding lines). The two-replication advanced tests included twenty-three entries (8 commercial varieties and 15 breeding lines). The two-replication preliminary tests included 21 entries (two commercial varieties as checks and 19 preliminary breeding lines).

## 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 applications, 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 15 trials including the 6 variety tests. Equipment from the UCCE-based pool for planting and harvesting field experiments was used at 9 sites at different times during the season. The most heavily used piece of equipment was the ALMACO combine. Both rice combines were maintained according to the established maintenance schedules.

## Objective III

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

## SUMMARY OF 2022 RESEARCH BY OBJECTIVE

### Objective I - Rice Variety Evaluation

Six 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 one additional test. 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 provides single-location yield summaries for the advanced and preliminary line tests, and one over-location agronomic performance summary for all locations. For quick reference, grain yields of selected commercially available varieties tested in all zone tests and across years and locations are summarized in Table 9. An Agronomy Progress Report, to be published early next year, will provide agronomic performance results for all entries in each experiment.

**Zone 1 Tests:** Seven commercial varieties and six advanced breeding lines were evaluated at a single location in a four-replication advanced test. Eight commercial and 15 breeding lines were evaluated in a two-replication advance test. The two-replication preliminary test evaluated two commercial varieties and 19 preliminary lines at the location. Commercial varieties at each location included S102, S202, CA201, CH201, CH202, CM101, CM203, M105, M206, M209, M210, M211, A202, CJ201, CT202, L207, and L208.

Yields in the four-replication advanced line test averaged 8,760 lbs./ac at Glenn (Table 2). In the four-replication advanced test, M211 was the highest yielding commercial variety (8,740 lbs./ac), ranking first overall. M206 and M210 were the next highest yielding commercial varieties at the single location, ranking third and fifth respectively (Table 2). The long grain entry 19Y1071 was the highest yielding advanced entry at the Glenn location with 10,630 lbs./ac. Average days to 50% heading was 94 days. Medium grain M211 was the latest variety at 99 days to reach 50% heading.

**Zone 2 Tests:** Seven commercial varieties and six advanced breeding lines were evaluated in three four-replication advanced tests, and eight commercial and 15 breeding lines were evaluated in three two-replication advance tests. The two-replication preliminary tests evaluated two commercial varieties and 19 preliminary lines at each location. Commercial varieties at each location included S102, S202, CA201, CH201, CH202, CM101, CM203, M105, M206, M209, M210, M211, A202, CJ201, CT202, L207, and L208.

Yields in the four-replication advanced line tests averaged 8,430 lbs./ac overall, 8,440 lbs./ac at the RES/Biggs, 8,060 lbs./ac at North Butte, and 8,800 lbs./ac at South Butte (Tables 3-5). Medium grain M11 was the highest yielding entries at the RES and North Butte locations with 9,850 lbs./ac and 9,260 lbs./ac. Advance breeding line short grain 17Y2087 was the highest yielding variety at the South Butte location. Average days to 50% heading was 92 days. The commercial standard M206 averaged 90 days over the three locations.

**Zone 3 Tests:** Seven commercial varieties and six advanced breeding lines were compared in three four-replication advanced tests. Eight commercial and 15 breeding lines were compared in three two-replication advance tests. The two-replication preliminary tests compared two commercial varieties and 19 preliminary lines at each location. Commercial varieties at each location included S102, S202, CA201, CH201, CH202, CM101, CM203, M105, M206, M209, M210, M211, A202, CJ201, CT202, L207, and L208.

Grain yields in the four-replication advanced tests averaged 8,480 lbs./ac overall, 8,600 lbs./ac at Sutter, 8,650 lbs./ac at San Joaquin, and 8,180 lbs./ac at Yuba (Tables 6-8). The South Yolo test was planted but lost to an infestation of Rice Seed Midge. The three highest yielding entries at each location were advance breeding lines 16Y2028 (9,240 lbs./ac), 19Y1071 (9,170 lbs./ac), and 18Y3018 (9,040 lbs./ac) at Sutter, advance breeding lines 17Y2087 (9,910 lbs./ac), 16Y2028 (9,790 lbs./ac), and commercial variety M206 (9,150 lbs./ac) at San Joaquin, and advance breeding line 17Y2087 (9,050 lbs./ac), commercial variety M206 (8,710 lbs./ac), and advance breeding line 16Y2028 (8,680 lbs./ac) at Yuba. The average grain moisture at harvest was 17.4%, average lodging 5%, average days to 50% heading 97 days, average seedling vigor 4.8, and average plant height 89 cm. Field preparation and planting was completed early this year with most plantings occurring in early May. The total rice acres were cut in half this year because of major water shortage. The Sacramento River had a near zero water allocation and the Feather River had around 50% water allocation. Rice harvest was completed in late October.

Comparing the commercial standard medium grain entries over a 5-year period and across locations M105, M211, and M210 were the three highest yielding varieties (Table 9).

## **Objective II - Assistance to Other Projects**

Both the UC SWECO and ALMACO plot combines were serviced and maintained during the harvest season. The rice equipment pool including a 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 2022. Equipment from the UCCE-based pool for planting and harvesting field experiments was used at 9 sites at different times during the season. The ALMACO combine was used to harvest 6 variety tests, various trials around the rice growing region, and at the RES. Over 2,400 experimental plots were harvested in 2022. 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 winter rice growers meetings, the Rice Field Day, the annual Rice Breeder's field tour, and to the several UC held Rice Research Board meetings.

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

1. The Annual Agronomy Progress Report No. 334 “California Rice Varieties: Description and Performance Summary of the 2021 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:**

Six 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. One similar test was conducted at the RES in Biggs, CA. Average yield across varieties and locations in the four-replication advanced line tests was 8,300 lbs./acre. A second consecutive dry winter and water shortage allowed field preparation and planting to be completed in early May. All statewide tests were planted by May 21<sup>st</sup>. Several advanced lines in 2022 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 9 trial sites throughout the rice growing area. 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. 2022 Seven Location Variety Trials

## 4 Rep Advanced Lines and Varieties

		Single Location Yields															
		Over All Ave Grain Yield at 14% Moisture lbs/ac		Glenn		Biggs/RES		North Butte		South Butte		Sutter		San Joaquin		Yuba	
Variety	Grain Type	Yield	Rank	Yield	Rank	Yield	Rank	Yield	Rank	Yield	Rank	Yield	Rank	Yield	Rank	Yield	Rank
M-211	M	9070	1	8740	1	9850	1	9260	1	9050	7	8970	4	7810	11	8250	8
18Y3018	M	8840	2	8590	4	8790	5	8850	2	9390	3	9040	3	8940	7	8330	6
19Y1071	L	8810	3	8700	2	9740	2	7610	11	8190	11	9170	2	8710	9	7660	12
17Y2087	S	8640	4	6900	9	8420	7	8230	4	9570	1	8810	5	9910	1	9050	1
M-210	M	8570	5	8440	5	8320	9	8200	5	9330	4	8780	6	9060	5	8350	5
16Y2028	S	8500	6	5490	11	8600	6	8180	6	9300	5	9240	1	9790	2	8680	3
CJ-201	L	8440	7	8160	6	9060	3	7960	9	8940	9	8370	12	7110	12	8220	9
19Y4000	M	8410	8	7770	7	8330	8	8130	7	8970	8	8610	10	8990	6	8260	7
M-206	M	8380	9	8600	3	7670	12	7840	10	9460	2	8660	7	9150	3	8710	2
M-105	M	8050	10	7170	8	7840	11	8490	3	9090	6	8640	9	9070	4	8530	4
18Y2070	S	8040	11	5950	10	8790	4	7360	12	8150	12	8420	11	8390	10	7720	11
CH-202	S	7810	12	4530	13	7920	10	8010	8	8270	10	8660	8	8880	8	8160	10
CA-201	S	6340	13	5390	12	6300	13	6660	13	6720	13	6400	13	6620	13	6390	13
MEAN		8300		7260		8440		8060		8800		8600		8650		8180	
CV		12		14		9		7		5		4		5		3	
LSD (.05)		477		1430		602		810		628		446		658		321	

## 2 Rep Advanced Lines and Varieties

19Y1018	L	10120	1	9520	4	10010	3	10540	1	11520	1	9600	7	10680	4	9210	3
L-208	L	9950	2	9990	2	9330	9	9820	2	11350	2	10270	2	11050	3	9100	5
20Y2001	S	9630	3	8070	13	9090	11	9550	3	10510	3	10420	1	11050	2	9820	1
L-207	L	9550	4	10730	1	9410	7	9420	4	10240	5	9760	5	9470	5	8110	16
19Y3128	M	9370	5	8440	12	10130	1	8820	10	8940	15	9760	4	8890	11	9100	4
19Y3105	M	9250	6	7850	17	10080	2	9180	7	8610	17	9250	11	9140	9	8940	6
20Y2124	S	9020	7	7380	19	9920	4	8550	15	8670	16	9690	6	9160	7	8000	18
S-202	S	8920	8	5190	23	8670	15	9230	5	10370	4	8180	20	11880	1	9380	2
19Y3127	M	8890	9	8980	6	9880	5	8670	12	7460	23	9270	10	7790	16	8190	15
19Y3119	M	8880	10	8940	7	9790	6	8590	14	8050	21	9270	9	6990	19	8730	8
M-209	M	8850	11	9530	3	9390	8	8960	8	9180	11	8220	19	7200	18	8390	12
18Y3102	M	8710	12	8580	11	8420	16	9210	6	9910	6	8500	14	8530	13	8430	11
CM-203	S	8570	13	7140	20	8040	20	8360	17	9900	7	9860	3	8900	10	8850	7
19Y3035	M	8550	14	8010	14	8050	19	8620	13	9630	8	9150	12	9330	6	8050	17
20Y3039	M	8540	15	8880	8	8900	12	8890	9	9300	10	8220	18	6480	23	8440	10
20Y3131	M	8540	16	9170	5	8810	13	8820	11	9450	9	8370	16	6670	21	7920	19
18Y3130	M	8470	17	8670	10	9330	10	7800	20	8250	19	8470	15	6740	20	8290	13
19Y4048	M	8460	18	7910	16	8780	14	8460	16	9070	13	8360	17	7770	17	8220	14
20Y4033	M	8330	19	7440	18	8110	18	7500	22	8960	14	9310	8	8760	12	8690	9
CH-201	S	8090	20	8000	15	8170	17	7500	21	7950	22	8810	13	8220	15	7800	20
20Y4036	M	7870	21	8700	9	7570	21	8210	18	9120	12	7900	21	6600	22	7540	22
S-102	S	7510	22	6260	21	7230	22	8180	19	8060	20	6650	23	9150	8	7580	21
CM-101	S	7200	23	5240	22	6940	23	6710	23	8470	18	7730	22	8350	14	7520	23
MEAN		8750		8200		8870		8680		9260		8910		8640		8450	
CV		11		9		9		6		9		4		4		3	
LSD (.05)		650		1600		906		1060		1650		778		632		527	

## 2 Rep Preliminary Lines and Varieties

20Y1029	L	9920	1	10970	1	10220	1	10100	2	9700	4	9570	4	9420	3	8830	4
20Y1008	L	9840	2	8960	8	9940	4	10210	1	9990	1	9760	1	11170	1	8660	7
20Y1117	L	9420	3	9650	4	10170	3	9010	7	9700	3	9110	10	9570	2	8730	6
20Y1058	L	9400	4	10120	2	10170	2	8440	16	9040	12	9710	2	8110	12	8650	8
20Y1101	L	9330	5	9540	5	9880	5	8770	10	9670	5	9210	8	8650	4	9060	1
21Y3145	M	9060	6	9940	3	9220	14	9130	5	9420	6	8840	11	7530	17	9030	2
21Y3102	M	8980	7	8900	10	9410	9	8520	14	9170	10	9320	6	8130	11	8580	9
21Y3135	M	8930	8	8910	9	9750	6	8460	15	8510	15	9310	7	7490	19	8420	11
21Y3108	M	8870	9	8830	13	9730	7	8860	9	7920	20	9170	9	8370	7	7970	15
21Y3143	M	8790	10	6860	20	9250	10	9480	3	8370	17	9690	3	8010	15	8960	3
21Y1002	L	8780	11	9020	7	8960	17	9090	6	9400	7	8610	13	8310	8	7980	14
21Y3105	M	8770	12	8870	11	9220	13	9150	4	9040	13	8150	20	7620	16	8440	10
21Y3133	M	8760	13	9330	6	9070	16	8870	8	8300	18	8610	15	8250	9	8420	12
21Y3099	M	8670	14	8840	12	8860	18	8230	17	9380	8	8720	12	7500	18	8830	5
21Y3098	M	8600	15	7570	18	9230	11	8090	19	9250	9	8610	14	8240	10	7920	16
20Y1080	L	8550	16	8280	17	9520	8	8610	12	9090	11	8300	18	8410	5	7610	19
21Y3103	M	8500	17	7120	19	9230	12	8120	18	8380	16	9370	5	8010	14	7780	17
20Y3054	M	8460	18	8760	15	9070	15	8590	13	7990	19	8480	16	6970	20	8140	13
20Y1102	L	8320	19	8800	14		21	8070	20	8700	14	8310	17	8390	6	7610	18
A-202	L	8270	20	8480	16	7910	19	8690	11	9950	2	8180	19	8070	13	7310	20
CT-202	L	6130	21	6160	21	6230	20	6080	21	6580	21	6070	21	5670	21	5920	21
MEAN		8740		8760		9250		8690		8930		8810		8190		8230	
CV(%)		9		8		8		6		5		5		5		6	
LSD(0.05)		543		1470		820		1112		1014		980		923		1033	

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

Table 2. 2022 Glenn Zone 1 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					
M-211	M	8740	1	15	4.8	99	68	96
19Y1071	L	8700	2	15	4.8	99	45	105
M-206	M	8600	3	15	4.8	92	98	94
18Y3018	M	8590	4	16	4.8	99	73	98
M-210	M	8440	5	15	4.9	93	85	95
CJ-201	L	8160	6	11	4.8	97	15	83
19Y4000	M	7770	7	15	4.8	93	98	91
M-105	M	7170	8	14	4.8	90	100	100
17Y2087	S	6900	9	17	4.8	92	100	85
18Y2070	S	5950	10	15	4.8	93	88	98
16Y2028	S	5490	11	14	4.7	91	100	95
CA-201	S	5390	12	14	4.7	93	100	91
CH-202	S	4530	13	11	4.7	90	100	85
MEAN		7260		14.0	4.8	94	82	94
CV		14		16	0.9	1	25	4
LSD (.05)		1430		3	0.1	1	29	5

*2 Rep Advanced Lines and Varieties*

L-207	L	10730	1	12	4.8	89	50	100
L-208	L	9990	2	13	4.9	87	80	90
M-209	M	9530	3	16	4.8	97	90	91
19Y1018	L	9520	4	14	4.9	87	93	86
20Y3131	M	9170	5	16	4.8	98	68	89
19Y3127	M	8980	6	17	4.8	101	50	96
19Y3119	M	8940	7	16	4.8	98	83	103
20Y3039	M	8880	8	16	4.7	98	30	88
20Y4036	M	8700	9	16	4.8	95	60	89
18Y3130	M	8670	10	16	4.7	98	95	92
18Y3102	M	8580	11	16	4.8	91	93	87
19Y3128	M	8440	12	16	4.8	98	95	102
20Y2001	S	8070	13	14	4.8	90	100	87
19Y3035	M	8010	14	16	4.8	92	100	92
CH-201	S	8000	15	14	4.8	94	100	85
19Y4048	M	7910	16	16	4.8	95	95	91
19Y3105	M	7850	17	15	4.8	97	100	99
20Y4033	M	7440	18	17	4.8	93	100	99
20Y2124	S	7380	19	14	4.6	91	80	103
CM-203	S	7140	20	15	4.9	89	100	94
S-102	S	6260	21	13	4.8	86	100	95
CM-101	S	5240	22	12	4.8	88	100	89
S-202	S	5190	23	17	4.1	92	100	90
MEAN		8200		15	4.8	93	85	93
CV		9		8	1.0	1	17	5
LSD (.05)		1600		2	0.1	2	29	10

*2 Rep Preliminary Lines and Varieties*

20Y1029	L	10970	1	12	4.8	88	5	98
20Y1058	L	10120	2	14	4.8	98	70	97
21Y3145	M	9940	3	16	4.7	98	35	100
20Y1117	L	9650	4	12	4.8	96	5	88
20Y1101	L	9540	5	12	4.8	99	45	98
21Y3133	M	9330	6	16	4.8	99	45	106
21Y1002	L	9020	7	16	4.9	95	8	89
20Y1008	L	8960	8	14	4.8	87	63	90
21Y3135	M	8910	9	17	4.7	97	75	96
21Y3102	M	8900	10	15	4.8	97	73	100
21Y3105	M	8870	11	17	4.8	99	5	93
21Y3099	M	8840	12	14	4.8	94	70	99
21Y3108	M	8830	13	17	4.7	97	70	103
20Y1102	L	8800	14	11	4.8	95	25	98
20Y3054	M	8760	15	16	4.7	99	65	99
A-202	L	8480	16	15	4.8	94	30	95
20Y1080	L	8280	17	12	4.7	98	13	85
21Y3098	M	7570	18	17	4.8	98	80	96
21Y3103	M	7120	19	15	4.8	98	85	101
21Y3143	M	6860	20	15	4.7	97	100	103
CT-202	L	6160	21	13	4.8	99	0	87
MEAN		8760		15	4.8	96	46	96
CV(%)		8		6	1.2	1	40	4
LSD(0.05)		1470		2	0.1	2	39	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. 2022 Biggs Zone 2 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					
M-211	M	9850	1	16.3	4.9	90	2	103
19Y1071	L	9740	2	14.4	5.0	94	3	108
CJ-201	L	9060	3	13.2	5.0	87	5	94
18Y2070	S	8790	4	13.0	4.9	85	12	109
18Y3018	M	8790	5	17.4	4.9	88	0	99
16Y2028	S	8600	6	14.1	4.9	83	88	104
17Y2087	S	8420	7	14.0	4.9	86	0	91
19Y4000	M	8330	8	17.9	4.9	83	7	100
M-210	M	8320	9	16.9	4.9	83	8	101
CH-202	S	7920	10	10.1	4.9	83	16	87
M-105	M	7840	11	16.1	4.8	81	10	99
M-206	M	7670	12	18.0	4.9	83	10	101
CA-201	S	6300	13	11.1	4.9	84	39	94
MEAN		8440		14.8	4.9	85	15	99
CV		9		16.2	1.3	2	115	5
LSD (.05)		602		1.9	0.1	1	14	4

*2 Rep Advanced Lines and Varieties*

19Y3128	M	10130	1	17.0	4.9	90	0	103
19Y3105	M	10080	2	16.9	4.9	90	17	112
19Y1018	L	10010	3	15.0	4.9	80	2	102
20Y2124	S	9920	4	16.6	4.8	86	22	103
19Y3127	M	9880	5	18.1	4.9	95	0	104
19Y3119	M	9790	6	16.6	4.9	91	0	99
L-207	L	9410	7	14.8	5.0	84	6	106
M-209	M	9390	8	16.2	4.9	90	0	97
18Y3130	M	9330	10	16.6	4.9	89	2	100
L-208	L	9330	9	15.4	5.0	81	5	102
20Y2001	S	9090	11	14.6	4.9	83	21	91
20Y3039	M	8900	12	15.7	4.9	89	2	96
20Y3131	M	8810	13	16.7	4.9	89	0	98
19Y4048	M	8780	14	16.7	4.9	86	2	96
S-202	S	8670	15	16.8	0.8	91	6	90
18Y3102	M	8420	16	17.1	4.9	84	0	101
CH-201	S	8170	17	11.9	5.0	88	42	93
20Y4033	M	8110	18	19.9	4.9	82	17	100
19Y3035	M	8050	19	17.3	4.9	83	17	101
CM-203	S	8040	20	15.4	5.0	80	17	100
20Y4036	M	7570	21	17.4	4.9	86	0	94
S-102	S	7230	22	7.5	4.9	78	6	95
CM-101	S	6940	23	10.7	4.9	79	11	92
MEAN		8870		15.7	4.7	86	8	99
CV		9		13.2	5.4	2	270	5
LSD (.05)		906		2.4	0.3	2	26	5

*2 Rep Preliminary Lines and Varieties*

20Y1029	L	10220	1	13.8	4.9	83	15	108
20Y1058	L	10170	2	15.1	4.9	93	0	98
20Y1117	L	10170	3	14.5	5.0	89	0	99
20Y1008	L	9940	4	15.1	4.9	82	29	105
20Y1101	L	9880	5	15.1	4.9	92	0	99
21Y3135	M	9750	6	17.6	4.8	91	0	100
21Y3108	M	9730	7	18.3	4.8	87	16	105
20Y1080	L	9520	8	14.2	5.0	92	0	109
21Y3102	M	9410	9	16.2	4.9	87	0	104
21Y3143	M	9250	10	18.7	4.9	88	0	104
21Y3098	M	9230	11	16.3	4.9	85	3	96
21Y3103	M	9230	12	15.8	4.9	88	23	106
21Y3105	M	9220	13	16.5	4.9	92	0	97
21Y3145	M	9220	14	16.8	4.9	91	2	101
20Y3054	M	9070	15	17.1	4.9	91	0	99
21Y3133	M	9070	16	16.2	4.8	91	0	101
21Y1002	L	8960	17	13.0	4.9	89	0	95
21Y3099	M	8860	18	15.4	4.9	88	0	103
A-202	L	7910	19	15.5	5.0	85	42	112
CT-202	L	6230	20	13.5	4.9	85	0	95
20Y1102	L		21					
MEAN		9250		15.5	4.9	87	12	103
CV(%)		8		10.7	1.1	2	151	5
LSD(0.05)		820		1.9	0.1	2	21	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 4. 2022 N. Butte Zone 2 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					
M-211	M	9260	1	16.7	4.8	97	28	106
18Y3018	M	8850	2	17.4	4.7	94	23	104
M-105	M	8490	3	14.8	4.8	86	94	101
17Y2087	S	8230	4	17.4	4.8	89	78	95
M-210	M	8200	5	16.1	4.8	89	70	98
16Y2028	S	8180	6	12.5	4.7	88	100	107
19Y4000	M	8130	7	15.6	4.8	89	60	103
CH-202	S	8010	8	14.3	4.8	87	100	93
CJ-201	L	7960	9	11.6	4.8	94	18	89
M-206	M	7840	10	15.8	4.8	90	88	101
19Y1071	L	7610	11	14.2	4.8	94	13	111
18Y2070	S	7360	12	16.7	4.8	91	94	107
CA-201	S	6660	13	11.9	4.8	89	100	101
MEAN		8060		15.0	4.8	91	66	101
CV		7		6.9	1.3	1	31	5
LSD (.05)		810		1.5	0.1	1	29	7

*2 Rep Advanced Lines and Varieties*

19Y1018	L	10540	1	12.4	4.9	86	3	95
L-208	L	9820	2	15.2	5.0	85	3	102
20Y2001	S	9550	3	15.4	4.8	87	100	100
L-207	L	9420	4	12.6	4.8	91	0	107
S-202	S	9230	5	15.8	4.1	89	75	100
18Y3102	M	9210	6	16.7	4.8	89	33	100
19Y3105	M	9180	7	16.0	4.7	94	88	109
M-209	M	8960	8	16.9	4.7	96	13	111
20Y3039	M	8890	9	16.6	4.8	95	5	100
19Y3128	M	8820	10	17.5	4.8	96	58	111
20Y3131	M	8820	11	16.8	4.7	97	5	100
19Y3127	M	8670	12	17.1	4.7	98	8	110
19Y3035	M	8620	13	15.1	4.8	87	80	105
19Y3119	M	8590	14	17.1	4.8	96	20	114
20Y2124	S	8550	15	13.7	4.6	87	100	102
19Y4048	M	8460	16	16.5	4.7	93	13	102
CM-203	S	8360	17	13.2	4.8	86	100	107
20Y4036	M	8210	18	16.2	4.7	92	25	106
S-102	S	8180	19	11.6	4.8	84	100	102
18Y3130	M	7800	20	16.8	4.8	97	23	103
20Y4033	M	7500	22	15.9	4.9	89	95	107
CH-201	S	7500	21	13.3	4.9	92	100	97
CM-101	S	6710	23	14.5	4.8	84	98	97
MEAN		8680		15.3	4.7	91	50	103
CV		5.9		4.7	1.5	1	35	4
LSD (.05)		1060		1.5	0.1	1	36	9

*2 Rep Preliminary Lines and Varieties*

20Y1008	L	10210	1	13.0	4.8	86	3	102
20Y1029	L	10100	2	12.0	4.8	88	3	98
21Y3143	M	9480	3	15.5	4.7	94	100	102
21Y3105	M	9150	4	17.1	4.7	97	0	109
21Y3145	M	9130	5	17.1	4.6	97	10	111
21Y1002	L	9090	6	15.0	4.8	93	8	95
20Y1117	L	9010	7	13.7	4.9	94	0	93
21Y3133	M	8870	8	17.3	4.8	97	0	110
21Y3108	M	8860	9	16.7	4.8	93	20	108
20Y1101	L	8770	10	16.4	4.8	97	3	110
A-202	L	8690	11	16.3	4.9	90	25	100
20Y1080	L	8610	12	13.0	4.9	93	3	94
20Y3054	M	8590	13	17.4	4.7	97	0	106
21Y3102	M	8520	14	16.4	4.7	92	50	106
21Y3135	M	8460	15	17.1	4.7	96	35	106
20Y1058	L	8440	16	16.3	4.8	96	13	106
21Y3099	M	8230	17	14.9	4.8	90	0	100
21Y3103	M	8120	18	16.4	4.7	93	40	111
21Y3098	M	8090	19	16.7	4.7	93	90	95
20Y1102	L	8070	20	12.2	4.8	91	25	96
CT-202	L	6080	21	13.4	4.9	93	0	93
MEAN		8690		15.4	4.8	93	20	102
CV(%)		6		7.0	1.0	1	66	4
LSD(0.05)		1112		2.3	0.1	2	28	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 5. 2022 S. Butte Zone 2 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					
17Y2087	S	9570	1	16.7	4.8	98	100	99
M-206	M	9460	2	15.5	4.8	97	100	101
18Y3018	M	9390	3	16.5	4.8	102	98	103
M-210	M	9330	4	16.3	4.8	97	100	101
16Y2028	S	9300	5	15.6	4.8	97	100	105
M-105	M	9090	6	15.7	4.8	95	98	103
M-211	M	9050	7	13.5	4.8	104	98	105
19Y4000	M	8970	8	15.1	4.8	97	100	99
CJ-201	L	8940	9	12.6	4.8	103	69	93
CH-202	S	8270	10	15.3	4.8	97	100	95
19Y1071	L	8190	11	15.3	4.8	102	99	110
18Y2070	S	8150	12	14.3	4.8	100	100	86
CA-201	S	6720	13	14.7	4.8	98	100	99
MEAN		8800		15.2	4.8	99	97	100
CV		5		8.5	1.1	1	9	14
LSD (.05)		628		1.8	0.1	1	12	21

*2 Rep Advanced Lines and Varieties*

19Y1018	L	11520	1	13.2	4.8	91	98	100
L-208	L	11350	2	13.8	4.9	92	100	95
20Y2001	S	10510	3	14.2	4.8	96	100	96
S-202	S	10370	4	10.5	4.0	99	98	100
L-207	L	10240	5	12.9	4.8	95	98	105
18Y3102	M	9910	6	18.2	4.7	99	55	106
CM-203	S	9900	7	16.6	4.8	95	100	106
19Y3035	M	9630	8	15.8	4.7	97	100	104
20Y3131	M	9450	9	15.4	4.8	104	98	102
20Y3039	M	9300	10	16.6	4.8	104	35	101
M-209	M	9180	11	15.2	4.8	104	100	97
20Y4036	M	9120	12	16.5	4.8	100	100	97
19Y4048	M	9070	13	16.3	4.7	99	95	98
20Y4033	M	8960	14	8.5	4.8	96	100	104
19Y3128	M	8940	15	15.2	4.8	104	100	107
20Y2124	S	8670	16	10.9	4.8	98	100	110
19Y3105	M	8610	17	16.4	4.8	104	85	109
CM-101	S	8470	18	12.2	4.7	93	100	101
18Y3130	M	8250	19	13.0	4.8	103	100	101
S-102	S	8060	20	11.4	4.8	91	100	105
19Y3119	M	8050	21	16.3	4.8	104	100	100
CH-201	S	7950	22	12.6	4.7	100	75	95
19Y3127	M	7460	23	14.5	4.8	105	75	105
MEAN		9260		14.2	4.7	99	92	102
CV		9		18.3	1.0	1	16	3
LSD (.05)		1650		5.4	0.1	1	30	6

*2 Rep Preliminary Lines and Varieties*

20Y1008	L	9990	1	13.1	4.8	92	100	97
A-202	L	9950	2	14.5	4.8	96	100	101
20Y1029	L	9700	4	13.5	4.8	95	93	99
20Y1117	L	9700	3	10.7	4.7	99	100	97
20Y1101	L	9670	5	10.5	4.8	100	100	104
21Y3145	M	9420	6	15.2	4.8	105	100	103
21Y1002	L	9400	7	14.3	4.8	99	100	97
21Y3099	M	9380	8	15.8	4.8	101	100	102
21Y3098	M	9250	9	16.0	4.7	100	100	100
21Y3102	M	9170	10	16.7	4.7	100	100	108
20Y1080	L	9090	11	15.0	4.8	101	100	95
20Y1058	L	9040	12	12.2	4.8	101	100	105
21Y3105	M	9040	13	15.4	4.8	105	100	98
20Y1102	L	8700	14	12.3	4.7	99	100	101
21Y3135	M	8510	15	15.0	4.8	105	100	101
21Y3103	M	8380	16	16.8	4.8	101	100	108
21Y3143	M	8370	17	12.8	4.8	104	100	105
21Y3133	M	8300	18	14.6	4.8	105	98	107
20Y3054	M	7990	19	14.0	4.8	105	93	105
21Y3108	M	7920	20	17.1	4.8	101	100	107
CT-202	L	6580	21	13.9	4.7	101	45	95
MEAN		8930		14.2	4.8	101	97	101
CV(%)		5		9.8	0.9	1	2	4
LSD(0.05)		1014		2.9	0.1	2	4	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. 2022 Sutter Zone 3 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					
16Y2028	S	9240	1	15.9	4.7	90	4	94
19Y1071	L	9170	2	17.1	4.8	99	0	97
18Y3018	M	9040	3	17.2	4.7	96	0	91
M-211	M	8970	4	16.6	4.8	97	0	92
17Y2087	S	8810	5	16.6	4.8	89	0	81
M-210	M	8780	6	16.8	4.8	91	0	87
CH-202	S	8660	8	16.5	4.8	89	46	79
M-206	M	8660	7	17.2	4.8	91	0	90
M-105	M	8640	9	16.7	4.7	89	0	91
19Y4000	M	8610	10	17.0	4.8	91	0	89
18Y2070	S	8420	11	16.4	4.7	91	0	101
CJ-201	L	8370	12	14.3	4.8	97	0	78
CA-201	S	6400	13	15.7	4.8	89	0	83
MEAN		8600		16.5	4.8	92	4	89
CV		4		2.3	1.3	1	196	4
LSD (.05)		446		0.5	0.1	1	11	5

## 2 Rep Advanced Lines and Varieties

20Y2001	S	10420	1	16.5	4.7	91	0	85
L-208	L	10270	2	16.3	4.7	90	0	86
CM-203	S	9860	3	16.5	4.9	90	0	91
19Y3128	M	9760	4	17.3	4.7	99	0	95
L-207	L	9760	5	16.5	4.7	90	0	100
20Y2124	S	9690	6	16.9	4.7	91	0	95
19Y1018	L	9600	7	16.3	4.8	89	0	80
20Y4033	M	9310	8	17.1	4.8	93	0	86
19Y3119	M	9270	9	16.8	4.8	98	0	91
19Y3127	M	9270	10	17.5	4.7	101	0	99
19Y3105	M	9250	11	16.8	4.8	98	0	98
19Y3035	M	9150	12	16.9	4.8	91	0	91
CH-201	S	8810	13	14.6	4.8	94	3	86
18Y3102	M	8500	14	16.5	4.8	91	0	94
18Y3130	M	8470	15	16.5	4.8	97	0	84
20Y3131	M	8370	16	16.8	4.7	99	0	87
19Y4048	M	8360	17	16.9	4.8	94	0	87
20Y3039	M	8220	18	16.5	4.8	98	0	84
M-209	M	8220	19	16.9	4.8	97	0	87
S-202	S	8180	20	16.6	4.0	96	0	83
20Y4036	M	7900	21	17.0	4.8	95	0	80
CM-101	S	7730	22	13.1	4.7	88	15	86
S-102	S	6650	23	15.0	4.8	88	0	88
MEAN		8910		16.4	4.7	94	1	89
CV		4		2.5	1.5	1	585	4
LSD (.05)		778		0.9	0.1	2	9	7

## 2 Rep Preliminary Lines and Varieties

20Y1008	L	9760	1	16.4	4.8	89	0	85
20Y1058	L	9710	2	16.8	4.8	96	0	89
21Y3143	M	9690	3	16.9	4.8	98	0	97
20Y1029	L	9570	4	16.4	4.8	91	0	89
21Y3103	M	9370	5	16.8	4.7	96	0	95
21Y3102	M	9320	6	16.6	4.8	96	0	91
21Y3135	M	9310	7	16.9	4.7	98	0	89
20Y1101	L	9210	8	16.8	4.8	98	0	84
21Y3108	M	9170	9	17.5	4.7	97	0	96
20Y1117	L	9110	10	15.5	4.9	96	0	89
21Y3145	M	8840	11	17.4	4.8	99	0	90
21Y3099	M	8720	12	16.4	4.8	94	0	91
21Y1002	L	8610	13	15.8	4.8	95	0	84
21Y3098	M	8610	14	16.3	4.9	95	0	90
21Y3133	M	8610	15	17.3	4.8	100	0	93
20Y3054	M	8480	16	17.4	4.8	100	0	93
20Y1102	L	8310	17	15.8	4.8	95	0	89
20Y1080	L	8300	18	16.4	4.8	99	0	80
A-202	L	8180	19	16.4	4.8	92	0	86
21Y3105	M	8150	20	17.4	4.8	98	3	87
CT-202	L	6070	21	15.4	4.9	95	0	74
MEAN		8810		16.6	4.8	96	0	88
CV(%)		5		3.7	1.8	1	648	4
LSD(0.05)		980		1.3	0.2	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. 2022 San Joaquin Zone 3 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					
17Y2087	S	9910	1	16.8	4.8	112	0	85
16Y2028	S	9790	2	15.3	4.8	114	0	90
M-206	M	9150	3	16.5	4.8	111	0	82
M-105	M	9070	4	16.3	4.8	107	0	84
M-210	M	9060	5	15.9	4.9	111	0	85
19Y4000	M	8990	6	16.0	4.8	110	0	85
18Y3018	M	8940	7	17.5	4.7	117	0	84
CH-202	S	8880	8	16.1	4.5	109	0	79
19Y1071	L	8710	9	17.4	4.9	120	0	93
18Y2070	S	8390	10	16.3	4.8	110	0	91
M-211	M	7810	11	17.2	4.8	120	0	83
CJ-201	L	7110	12	13.4	4.8	120	0	75
CA-201	S	6620	13	14.9	4.8	107	0	81
MEAN		8650		16.1	4.8	113	0	84
CV		5		2.8	1.0	1	0	4
LSD (.05)		658		0.6	0.1	2	0	5

*2 Rep Advanced Lines and Varieties*

S-202	S	11880	1	16.4	4.7	107	0	84
20Y2001	S	11050	2	16.4	4.6	107	0	82
L-208	L	11050	3	15.4	4.9	106	0	78
19Y1018	L	10680	4	15.9	4.9	103	0	78
L-207	L	9470	5	14.7	4.9	110	0	84
19Y3035	M	9330	6	15.8	4.8	112	0	88
20Y2124	S	9160	7	16.4	4.7	111	0	87
S-102	S	9150	8	13.7	4.9	108	0	82
19Y3105	M	9140	9	17.0	4.8	118	0	94
CM-203	S	8900	10	16.4	4.9	108	0	89
19Y3128	M	8890	11	17.4	4.9	120	0	90
20Y4033	M	8760	12	16.4	4.8	110	0	80
18Y3102	M	8530	13	17.7	4.8	114	0	83
CM-101	S	8350	14	14.4	4.7	110	0	83
CH-201	S	8220	15	15.0	4.9	112	0	79
19Y3127	M	7790	16	19.8	4.8	126	0	90
19Y4048	M	7770	17	15.9	4.8	115	0	76
M-209	M	7200	18	18.3	4.8	122	0	82
19Y3119	M	6990	19	18.8	4.8	125	0	88
18Y3130	M	6740	20	18.0	4.8	123	0	83
20Y3131	M	6670	21	19.1	4.8	124	0	82
20Y4036	M	6600	22	17.3	4.8	118	0	81
20Y3039	M	6480	23	17.9	4.8	121	0	81
MEAN		8640		16.7	4.8	114	0	83
CV		4		3.5	1.2	2	0	4
LSD (.05)		632		1.2	0.1	4	0	6

*2 Rep Preliminary Lines and Varieties*

20Y1008	L	11170	1	15.0	4.8	105	0	80
20Y1117	L	9570	2	16.4	4.8	118	0	84
20Y1029	L	9420	3	14.8	4.9	109	0	89
20Y1101	L	8650	4	16.7	4.8	118	0	86
20Y1080	L	8410	5	16.7	4.8	122	0	80
20Y1102	L	8390	6	15.1	4.8	119	0	92
21Y3108	M	8370	7	16.5	4.8	111	0	87
21Y1002	L	8310	8	16.4	4.9	120	0	79
21Y3133	M	8250	9	17.2	4.8	119	0	84
21Y3098	M	8240	10	16.9	4.8	119	0	86
21Y3102	M	8130	11	16.4	4.8	115	0	86
20Y1058	L	8110	12	16.5	4.9	120	0	90
A-202	L	8070	13	16.9	4.9	111	0	83
21Y3103	M	8010	14	16.5	4.8	115	0	83
21Y3143	M	8010	15	17.3	4.8	118	0	86
21Y3105	M	7620	16	18.4	4.7	122	0	86
21Y3145	M	7530	17	17.8	4.7	123	0	82
21Y3099	M	7500	18	17.4	4.8	118	0	87
21Y3135	M	7490	19	17.4	4.8	119	0	78
20Y3054	M	6970	20	18.1	4.7	123	0	89
CT-202	L	5670	21	15.6	4.8	117	0	82
MEAN		8190		16.7	4.8	117	0	85
CV(%)		5		2.1	0.9	1	0	5
LSD(0.05)		923		0.7	0.1	3	0	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 8. 2022 Yuba Zone 3 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					
17Y2087	S	9050	1	19.5	4.8	84	3	88
M-206	M	8710	2	20.6	4.8	85	14	93
16Y2028	S	8680	3	18.5	4.7	85	40	103
M-105	M	8530	4	20.0	4.7	82	0	92
M-210	M	8350	5	20.4	4.8	85	1	93
18Y3018	M	8330	6	21.9	4.8	90	0	96
19Y4000	M	8260	7	20.2	4.8	85	1	94
M-211	M	8250	8	21.0	4.7	89	1	95
CJ-201	L	8220	9	17.2	4.9	88	0	86
CH-202	S	8160	10	18.0	4.8	83	71	82
18Y2070	S	7720	11	20.5	4.8	86	3	104
19Y1071	L	7660	12	19.0	4.8	89	0	102
CA-201	S	6390	13	18.4	4.8	84	18	89
MEAN		8180		19.6	4.8	86	12	94
CV		3		2.0	1.1	1	112	4
LSD (.05)		321		0.6	0.1	1	19	6

## 2 Rep Advanced Lines and Varieties

20Y2001	S	9820	1	18.5	4.8	84	10	90
S-202	S	9380	2	19.2	3.0	88	0	92
19Y1018	L	9210	3	17.8	4.8	80	0	88
19Y3128	M	9100	4	20.5	4.7	88	0	99
L-208	L	9100	5	17.7	4.8	81	0	87
19Y3105	M	8940	6	21.0	4.8	89	0	103
CM-203	S	8850	7	19.7	4.8	82	3	98
19Y3119	M	8730	8	21.8	4.7	89	0	93
20Y4033	M	8690	9	21.1	4.8	84	0	94
20Y3039	M	8440	10	20.8	4.7	88	0	88
18Y3102	M	8430	11	19.5	4.8	84	0	95
M-209	M	8390	12	21.5	4.7	88	0	91
18Y3130	M	8290	13	21.0	4.8	89	3	93
19Y4048	M	8220	14	20.2	4.7	86	0	93
19Y3127	M	8190	15	22.1	4.7	92	0	93
L-207	L	8110	16	18.4	4.8	87	0	95
19Y3035	M	8050	17	20.3	4.8	83	0	96
20Y2124	S	8000	18	18.8	4.7	84	13	99
20Y3131	M	7920	19	21.4	4.7	89	0	90
CH-201	S	7800	20	18.3	4.9	86	5	86
S-102	S	7580	21	15.8	4.9	80	0	90
20Y4036	M	7540	22	21.1	4.7	88	0	90
CM-101	S	7520	23	17.4	4.7	81	0	93
MEAN		8450		19.7	4.7	86	1	93
CV		3		2.6	1.0	1	271	3
LSD (.05)		527		1.0	0.1	1	8	7

## 2 Rep Preliminary Lines and Varieties

20Y1101	L	9060	1	18.9	4.8	89	0	95
21Y3145	M	9030	2	21.9	4.7	90	0	97
21Y3143	M	8960	3	21.0	4.7	89	0	99
20Y1029	L	8830	4	17.8	4.8	84	0	97
21Y3099	M	8830	5	20.6	4.9	87	0	98
20Y1117	L	8730	6	18.7	4.8	89	0	93
20Y1008	L	8660	7	18.7	4.7	80	0	88
20Y1058	L	8650	8	19.6	4.9	88	0	98
21Y3102	M	8580	9	21.2	4.8	88	0	98
21Y3105	M	8440	10	21.9	4.7	91	0	95
21Y3133	M	8420	12	21.8	4.7	89	0	97
21Y3135	M	8420	11	21.2	4.7	88	0	97
20Y3054	M	8140	13	21.5	4.6	91	0	101
21Y1002	L	7980	14	18.9	4.8	87	0	90
21Y3108	M	7970	15	21.4	4.8	88	0	106
21Y3098	M	7920	16	20.9	4.8	88	0	98
21Y3103	M	7780	17	21.4	4.8	88	0	105
20Y1080	L	7610	19	19.3	4.9	90	0	88
20Y1102	L	7610	18	17.4	4.8	87	0	90
A-202	L	7310	20	18.1	4.8	86	0	92
CT-202	L	5920	21	18.1	4.9	89	0	84
MEAN		8230		20.0	4.8	88	0	95
CV(%)		6		1.4	1.4	1	0	3
LSD(0.05)		1033		0.6	0.1	2	0	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 9. Grain Yield (lb./acre @14% moisture) Summary Rice Varieties by Location and Year (2018-2022)

Location	Year	M105	M206	M209	M210	M211
N. Butte	2018	8350	8270	7990	8290	9270
	2019	9820	9520	9260	10020	10060
	2020	10300	9570	10390	8840	10570
	2021	7620	7420	8460	8870	9200
	2022	8940	7840	8960	8200	9260
Location Mean		9006	8524	9012	8844	9672
S. Butte	2018	9990	10270	9580	9960	10960
	2019	9220	9120	8740	9820	8930
	2020	9640	9490	9630	9660	9910
	2021	9460	9260	9050	9510	8420
	2022	9090	9460	9180	9330	9050
Location Mean		9480	9520	9236	9656	9454
Colusa	2018	8470	8960	9120	8980	9570
	2019	9430	9320	8960	9100	9830
	2020	8850	8820	9040	8950	8760
	2021	10470	9690	10180	9480	9400
Location Mean		9305	9198	9325	9127.5	9390
Glenn	2018	9520	9300	9990	9160	10510
	2019	9940	9310	10080	9490	9460
	2020	9170	9500	9550	10240	8660
	2021	9670	9570	8340	9780	9630
	2022	7170	8600	9530	8440	8740
Location Mean		9094	9256	9498	9422	9400
Sutter	2018	9540	9250	9090	10110	9920
	2019	9770	9370	9300	9300	10160
	2020	9330	9380	8950	9450	9440
	2021	8750	9610	8400	9450	9160
	2022	8640	8660	8220	8780	8970
Location Mean		9206	9254	8792	9418	9530
Yolo	2018	10010	10090	9790	10020	10710
	2019	9720	9120	9290	9050	10100
	2020	10990	9550	10010	9150	10110
	2021	9350	9520	9620	9330	9930
Location Mean		10018	9570	9678	9388	10213
South Yolo	2018	8210	7640	7580	7830	7170
	2019	8590	7780	7730	8740	8220
Location Mean		8400	7710	7655	8285	7695
Yuba	2018	9450	9350	8400	9120	9140
	2019	7170	6990	6650	7450	7070
	2020	7820	7920	7630	7800	8580
	2021	6500	7050	7640	6550	6560
	2022	8530	8710	8390	8350	8250
Location Mean		7894	8004	7742	7854	7920
San Joaquin	2021	10700	10090	8590	9950	9940
	2022	9070	9150	7200	9060	7810
Location Mean		9885	9620	7895	9505	8875
Loc/Years Mean		9143	8962	8759	9055	9128