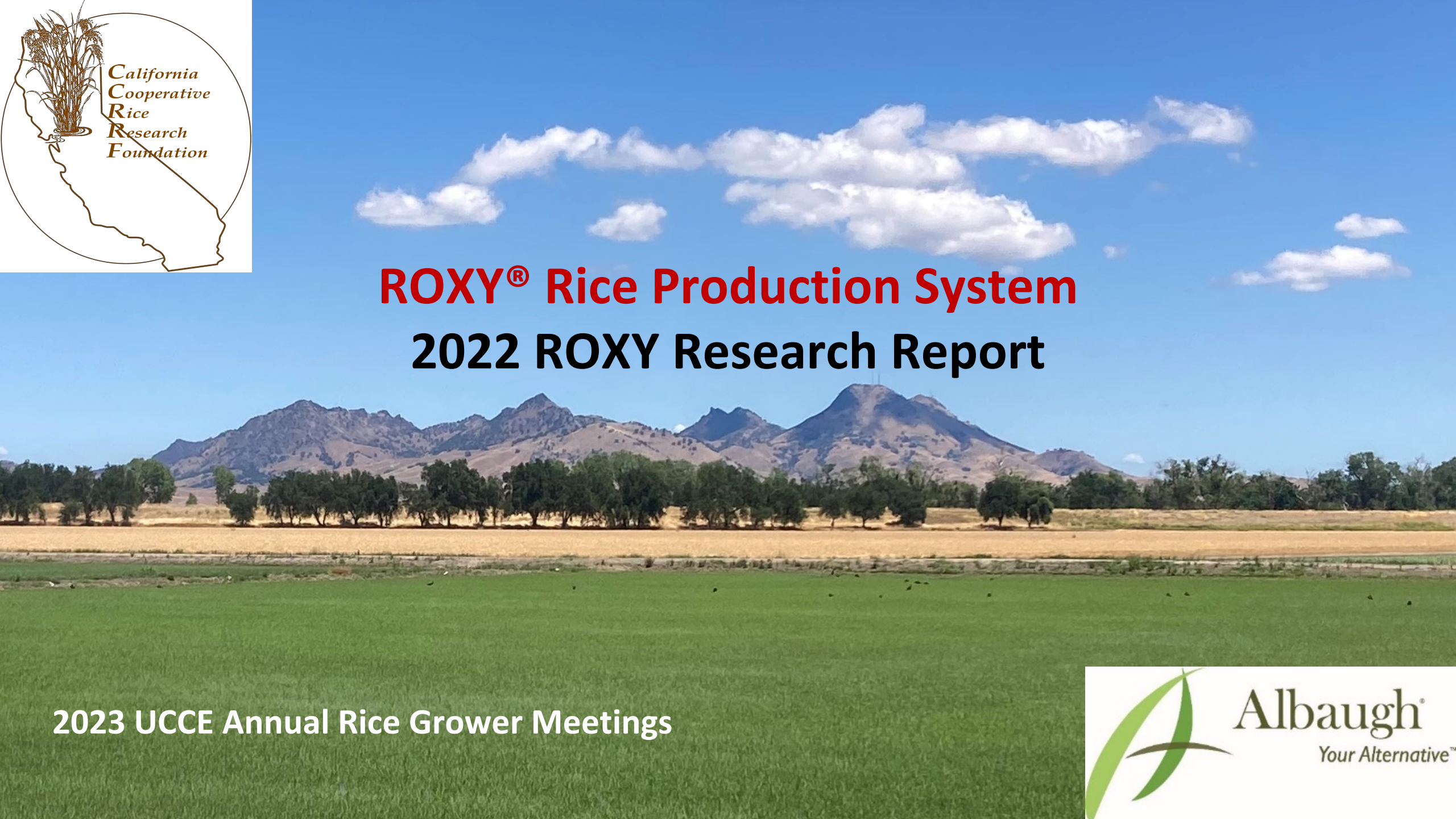
2023 UCCE Annual Rice Grower Meetings



California Cooperative Rice Research Foundation

ROXY® Rice Production System

2022 ROXY Research Report

2023 UCCE Annual Rice Grower Meetings

Albaugh® Your Alternative™

Summary

2022 presented difficult challenges is conducting ROXY® research at RES and Albaugh sponsored efficacy testing.

- Drought condition and water restrictions reduced availability and suitability for off-station testing and had contractors struggling to find research sites.
- In addition, application and water management challenges impacted experiments off-station as well and at RES.
- Lodging and harvesting issues also were encountered in the RES ROXY® nursery and some off-station sites and grain yields were somewhat disappointing this year.
- However overall, the performance of the ROXY® Rice Production System using 19Y4000 gave historically consistent weed control results and was very effective as a base program for rice weed control as it has been envisioned. A post-emergence herbicide application (e.g., propanil) was included in the program in the 2022 testing.




RES ROXY® Nursery

1. ALB 2023 herbicide rate studies gave very good weed control of grassy weeds. Ricefield bullrush (heavy pressure at RES) emerged in open areas and plot alley ways. Increasing rate from 1.5 to 2.0 pints/acre all gave good control compared to the Abolish check. The delay in rice emergence increased with increasing ALB 2023 rates to 6 days at the highest rate. 50% heading was 3 days later at the 2 and 2.5 pts./acre rate but not significantly different from the Abolish check at the lower rates. Grain yields were low and not significantly different in any of the treatments, except for the susceptible M-206 entry at the higher rates of ALB 2023. Lodging was severe by harvest, and there was a “lot of rice on the ground” that was not recovered by the plot harvester.
2. Application of ProGib (gibberellic acid) did not enhance seedling emergence in a rate study in the nursery and in strip trials in the foundation breeder seed and off-station small plots.
3. ALB 7000, a proprietary biological seed soak, did show a slight “visual” enhancement in seedling vigor score at ALB 2023 treatments of 1.75 to 2.5 pts. and there was a slight yield advantage at 2.0 pts./acre.
4. Inspection of “weedy red rice simulations plots” with 20 % Koshihikari mixtures found only 3 plants at the 1.5 pts./acre, and none were found in the 1.75 to 2.5 pts./acre basins. Third year of control results.
5. A test of breeding lines that contained two separate ROXY mutations that was conducted at a 2.5 pts./acre identified a two-gene line* that had significantly better seedling vigor score (emergence) than 19Y4000 at this high rate and its yields were higher but not significantly different. This vigor advantage was also observed in small plot seedings in the Albaugh tests at the CCFS Meridian and Willows sites.

Albaugh Testing

1. **Colusa County Farm Supply**

   BCF 19 – COLUSA Site lost to silting of seed and reseeding lost to birds.

   ST22 – MERIDIAN Leveling, water distribution, and wind issues, 1.75 pts./acre 20% behind untreated, SuperWham for final control of grass and some Sprangletop present. Yield test areas samplings were in the 100 cwt./acre range and quality sampling for 19Y4000 and the M-210 in adjacent field were in the 100 cwt./acres range. All US No. 1 graded

   QR4 - WILLOWS ALB 2023 1.75 pts./acre treated 20% behind untreated, sprinkling of water grass emerged and 2 SuperWham applications used in grower's field as well. Yield sampling in ROXY seeded area were 73 and 96 for the grower standard and 86 and 80 cwt./acre in the ALB 2023 treated area. Yield quality samplings were 99 for M-210 in adjacent field and 91 cwt./acre for the treated 19Y4000.

   DC5 – YOLO Small plot test, ALB 2023 1.75 pts./acre treated 20% behind untreated, no weeds in ROXY plots, ALB 2023, ALB2023 + Butte, ALB 2023 + Cliffhanger yielded 87, 95, 91 cwt./acre respectively, with M-211 Butte + Cerano 87 cwt./acre.

Albaugh Testing

2. **GrowWest**

   SUTTER-YUBA CITY Delayed emergence, heavy grass pressure, very good weed control with a post emergence application of propanil. Cut ~0.1-acre samples with RES Mitsubishi for yields/quality. Yield of 19Y4000 at 2.0 pts/acre was calculated at 123 and the M-206 in the adjacent check 91 cwt./acre.

   PLACER- BASELINE RD. Good weed control on a lighter soil, propanil follow up, harvested with commercial combine yield at 111 compared to an adjacent field of M-206 yielding 112 cwt./acre.

3. **Helena**

   YUBA- MARYSVILLE Early planting, delayed emergence, lighter soil with high herbicide activity, basin with post combinations, very good weed control, preharvest rain, severe lodging and delayed harvest (<12%). ALB2023 and other products combinations averaged 91 and other products/combinations 75 cwt./acre.

   BUTTE-GRIDLEY Typical rice soil, delay emergence, tested higher rates with combination vs. M-206 , good weed control, ALB2023 averaged 92 (99 if you drop the last Abolish treatment combination) and the other herbicides combination average 97 cwt./acre for M-206.

Albaugh Testing

4. **UC Davis**

   BUTTE-RES HAMILTON RD. Replicated plot experiments, multiple rates, and herbicide combination. Emergence delay with increasing rates, algae issues, very good weed control, lodging and delayed harvest. Yield not significantly different, treatment averages 69 to 88 cw.t./acre.

5. **Wilbur Ellis**

   BUTTE-HAMILTON RD. Red soil site 2nd year, applied a single 2.0 pt./acre treatment (judged too high first year) 12-day emergence delay, deep water, sloping field, weed pressure light but control very good, with severe lodging and delayed harvest. 79, 94 and 90 cwt./acre for Grower Std., Butte, and ALB2023, respectively.

6. **BUCRA**

   BUTTE- NICHOLS RES. FARM Heavy weed pressure site, herbicide application and rate uncertainties, algae and emergence delays in small basins, midge, water management difficulties, limited post emergence treatment, and harvest issues. Un-replicated small plot yields were 75 cwt./acre for Abolish and the ALB2023 combinations went 69 to 95 cwt./acre.

Continuing to move ROXY®RPS forward for California

- EPA has requested and accepted a PRIA Extension – June 2023
- 2022 ROXY RPS weed control performance in California trials was excellent
- Albaugh continues to position the ROXY RPS with ALB2023 as a base program utilizing best management practices for weed control and weed resistance management
- 2023 ROXY RPS trials will continue with strategic partners to help position and educate market on performance, establish ROXY RPS BMP's and prepare the market for the 2024 launch of the ROXY RPS
- 19Y4000 Non-GM Herbicide Tolerant Calrose variety approved for release