2019 fertility management update for California rice systems

Bruce Linquist January 13, 14 and 15, 2020







Colusa, Butte and Sutter/Yuba County rice

contain the same or similar content;

 Sutter/Vuba Counties, RICE NOTES San Joaquin County, FIELD NOTES

· Colusa County, RICE BRIEFS . Butte County, RICE LEAF

newsletters serve Sacramento Valley counties and may

Agronomy Reséarch & Information Center



continuing education units (CEUs) to complete your renewal application this year for the Department of Pesticide Regulation..

What would you like to see or

Degree Day Model

UC Rice Blog 2016 Annual Rice Grows

Added January 6, 2016

WHERE & WHEN Richvale:

Tuesday, Jan. 19, 8:30 am

Evangelical Church, 5219 Church St. Richvale

Glenn: Tuesday, Jan. 19.

2016 Rice Grower Winte

Evangelical Church, 5219

Church St., Richvale Glenn: Tuesday, Jan. 19,

1:30 pm, Glenn.,

Meetings - Save the Date

WHERE &

WHEN

Richvale

Tuesday 8:30 am

1:30 pm, Glenn...

Show More





OTHER CONTACTS





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Three items

- Remote Sensing to determine crop status at PI
- What to do when you can't apply aqua-N
- Considerations when straw is bailed

Opportunities to use remote sensing to identify mid-season N status

- Objective
 - Determine if top-dress N is necessary
 - Should it be planned on?
 - Identify tools to determine it necessity.
 - Focus on remote sensing
 - GreenSeeker and drones





Methodology

- Site years
 - 3 in 2016
 - **3** in 2017
 - 4 in 2018
 - 4 in 2019
- Preplant N rates
 - -ranged from 0 to excessive
- Each N rate receives top-dress N at PI
 - 30 lb/ac in 2018 and 2019
- NDVI (and NDRE in 2018, '19) taken at PI before top-dress

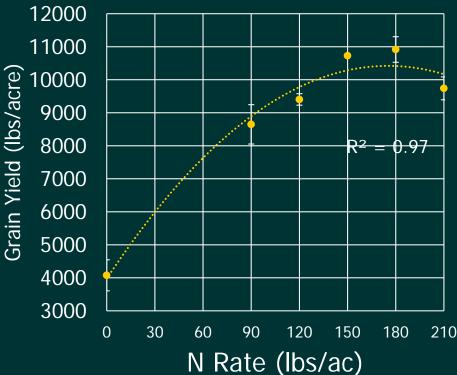


Response index

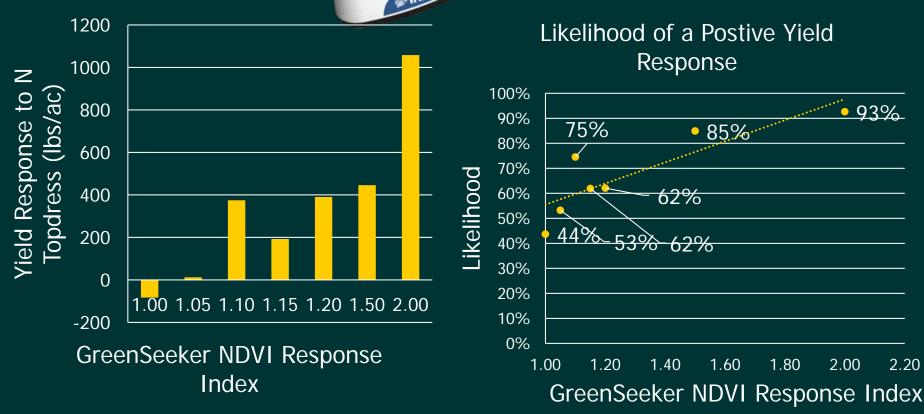
- Ratio of High N strip to test area
 - = NDVI High N / NDVI test
 - For example: 72/65 = 1.1



Arbuckle-19

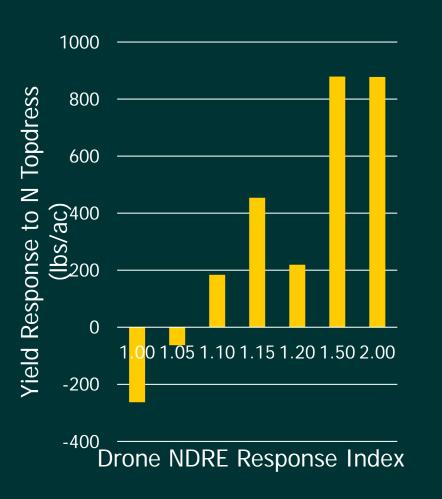


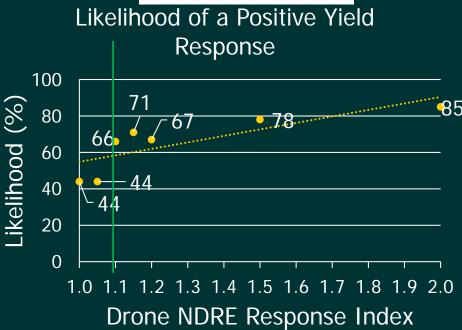
Grain yield response in relation to Response Index (2016-2019)



Response 93% • 85<u>%</u> 62% 2.00 1.40 1.60 1.80 2.20

Grain yield response in relation to Response Index (2016-2019)





What do you do when you can't apply aqua-ammonia?

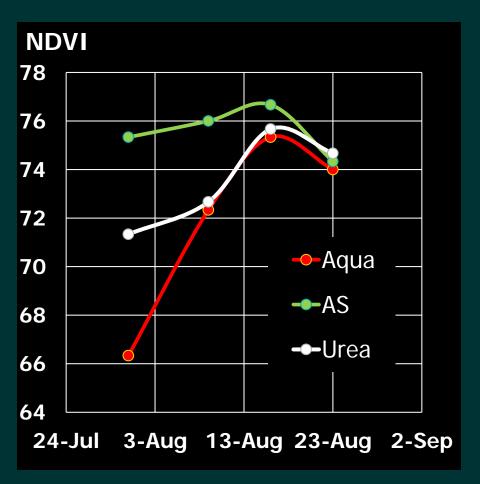


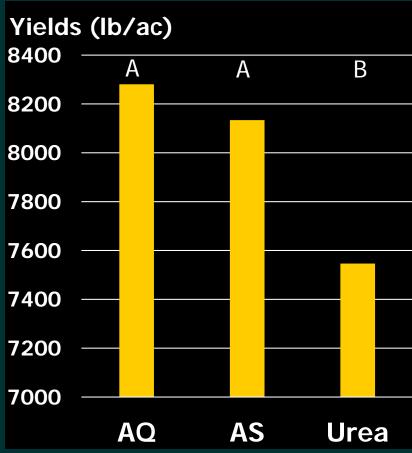
Comparison of N sources

- If you do not apply aqua, needed N will need to be applied in granular form.
- These forms are more susceptible to losses
- Need to be applied in splits.

- 150 lb N/ac
- Aqua:
 - preplant to moist soil
- Urea and AS:
 - 4 splits
 - 2,4,6 and 7 wks
 - 20, 50, 50, 30 lb N/ac
- Planted June 14

Comparison of N sources







Rice straw bailing



Nutrients in rice grain and straw

Nutrient	Conc	Amount in 100 cwt/ac yield	Amou nt per ton	Conc	Amount in 100 cwt/ac yield	Amou nt per ton
	%	lb/ac	lb/ton	%	lb/ac	lb/ton
	Grain			Straw		
Nitrogen	1.1	110	22	0.65	65	13
Phosphorus	0.2	20	4	0.1	10	2
Potassium	0.29	29	5.8	1.4	140	28
Calcium	0.05	5	1	0.3	30	6
Magnesium	0.15	15	3	0.2	20	4
Sulfur	0.1	10	2	0.075	7.5	1.5
Silicon	2	200	40	5.5	550	110
Zinc	0.002	0.2	0.04	0.003	0.3	0.06
Iron	0.025	2.5	0.5	0.035	3.5	0.7
Manganese	0.005	0.5	0.1	0.045	4.5	0.9
Copper	0.001	0.1	0.02	0.0003	0.03	0.006
Boron	0.005	0.5	0.1	0.001	0.1	0.02

