Mississippi Rice Research Overview and Update 2019

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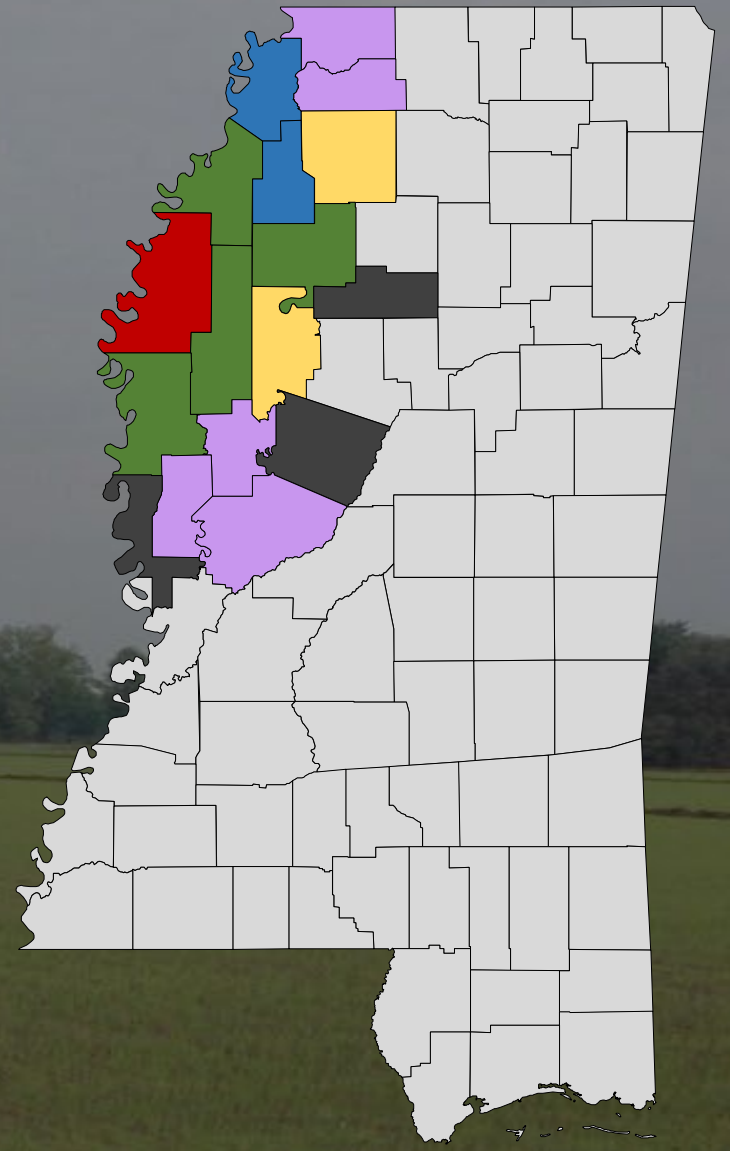
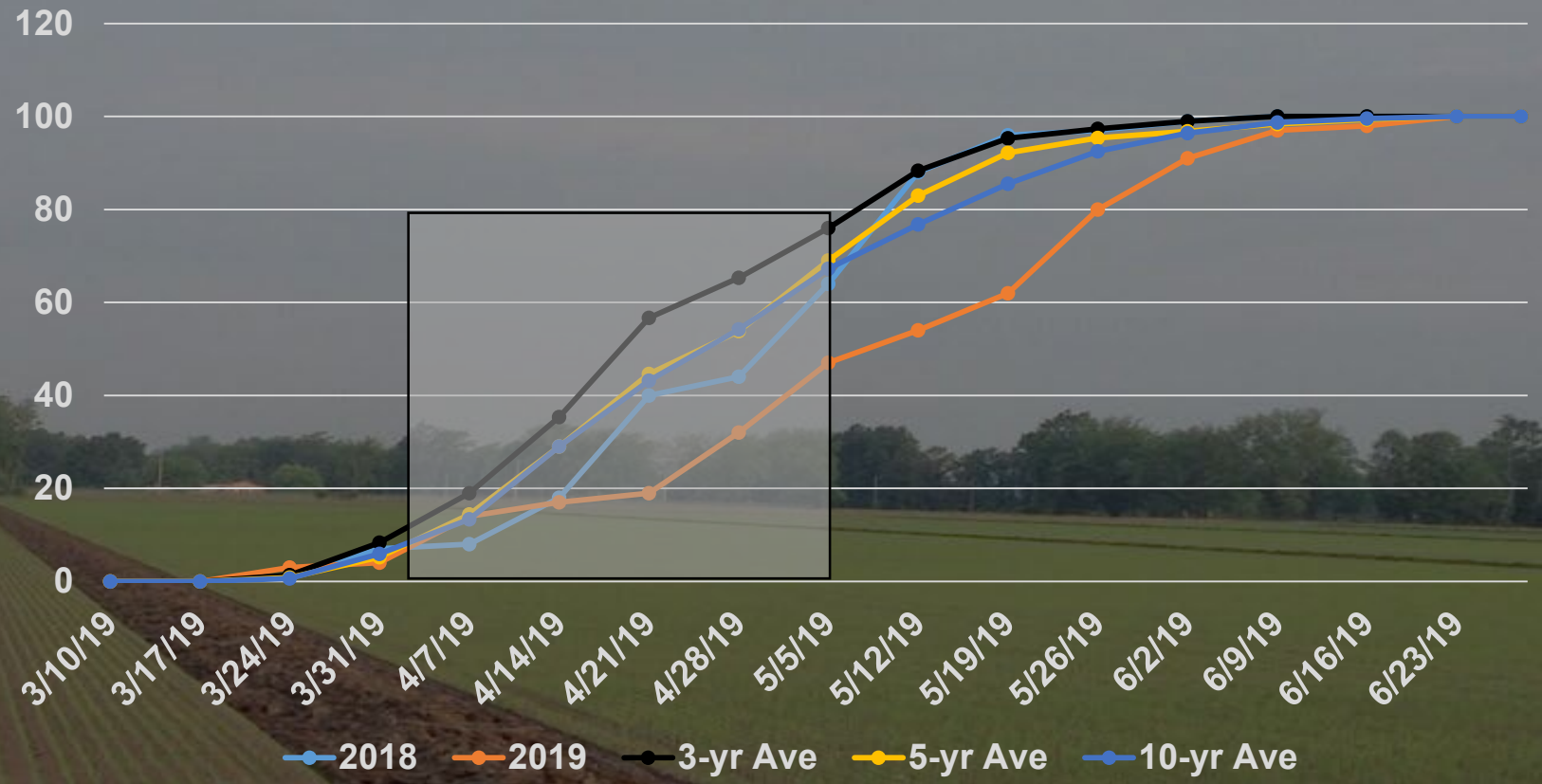
Mississippi Rice Promotion Board

MS Rice Acreage Trends

County	2016	2017	2018	2019
Bolivar	47839	27431	34,659	31,796
Tunica	34802	27286	31,403	24,078
Quitman	20515	10763	10,311	10,247
Sunflower	19994	7843	12,458	9,854
Coahoma	12885	7788	9,970	5,766
Tallahatchie	12330	7083	6,803	7,890
Washington	12135	8443	8,090	8,318
Panola	9668	8458	7,343	7,340
Leflore	7734	1770	5,034	3,150
Humphreys	4440	3874	4,263	4,089



MS Rice Planting Progress 2019



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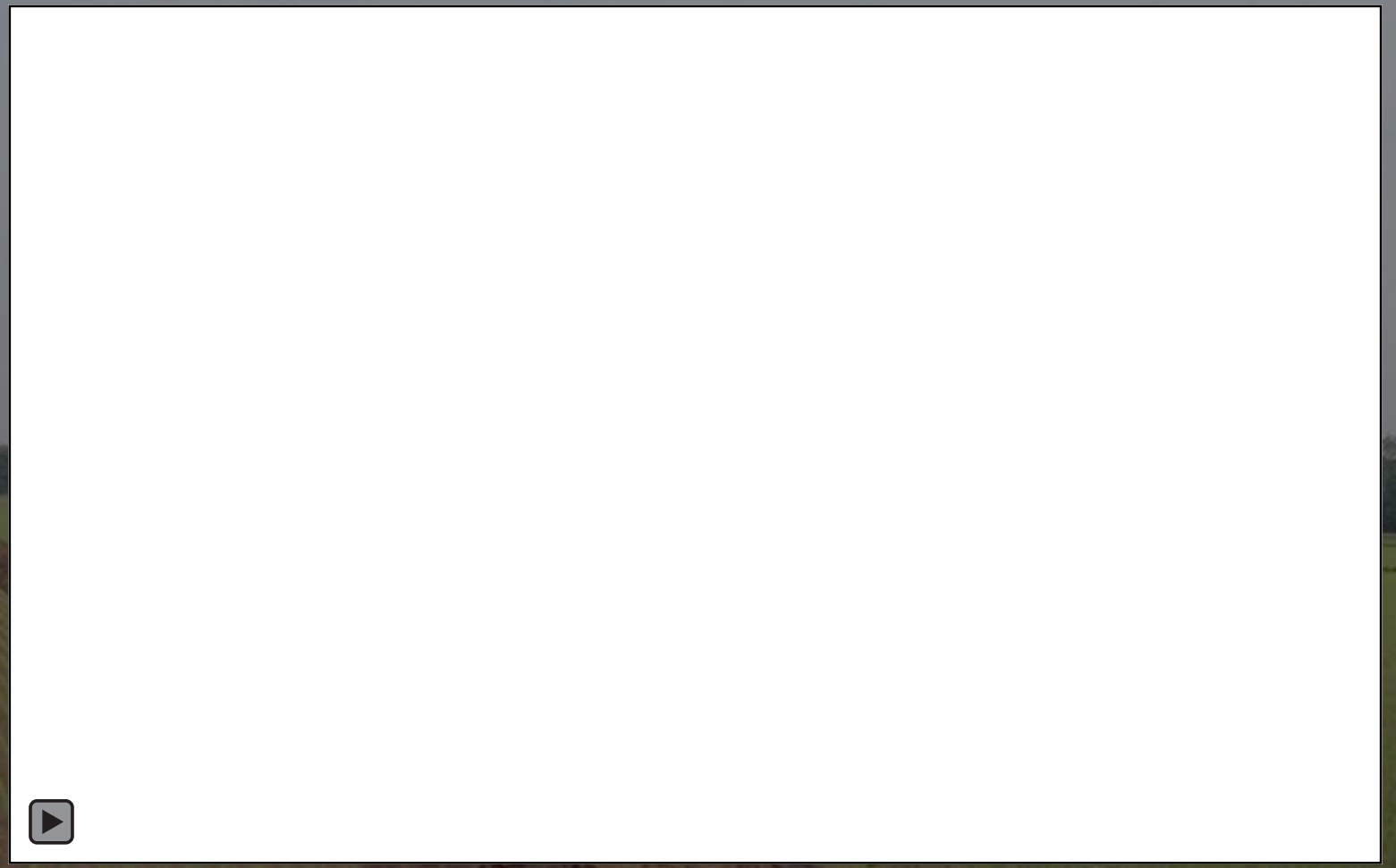
Environmental Issues 2019

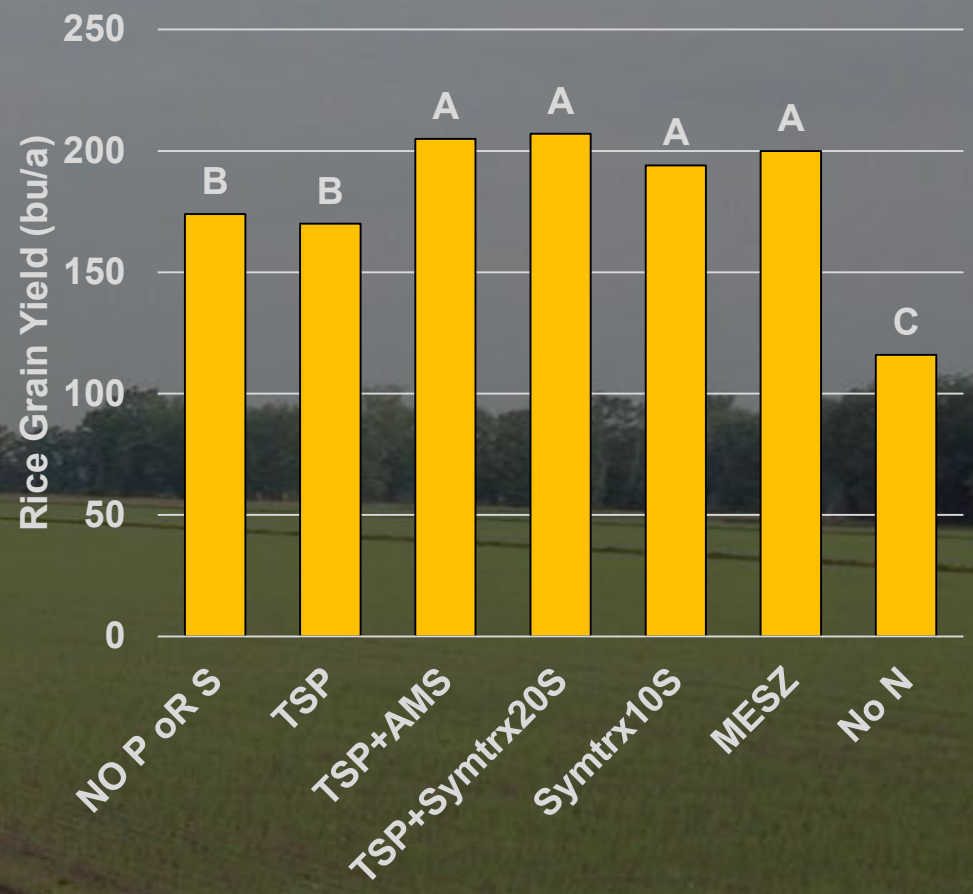
Common Sight in 2019



Drastic Differences in Environment

Compaction Creates Nutrient Issues

Rice Response to Sulfur Sources



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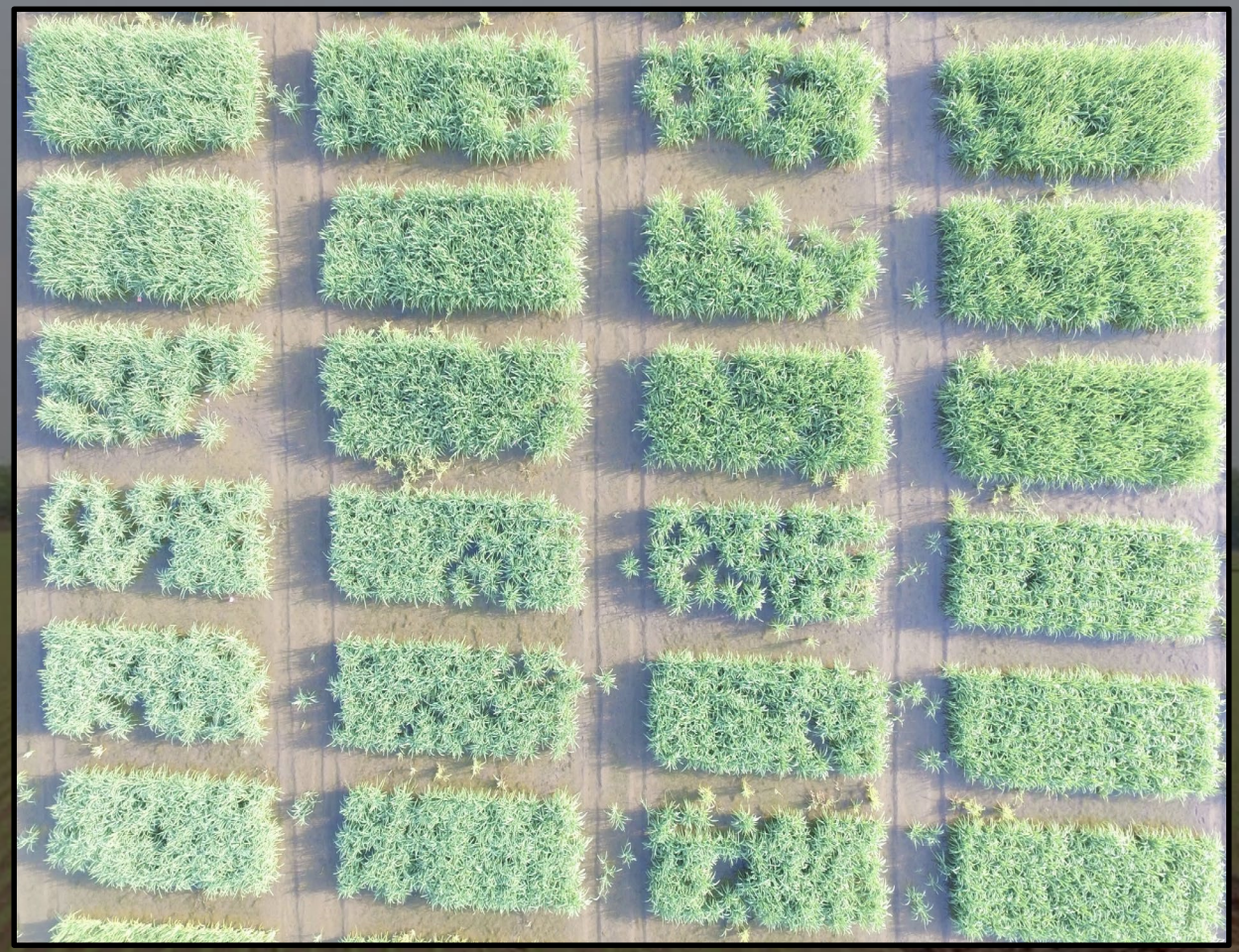
Rice Stand Loss after Establishment



Seeding Rate		Variety	
Hybrid	Inbred	XL745	CL153
Seeding Rate (lbs/ac)		- - - Mean Rice Grain Yield - - -	
26	65	194	184
22	57	219	189
18	46	215	174
14	36	200	185
10	26	213	175
7	16	186	163

Herbicide Issues 2019

Herbicide Issues in Rice

GR Italian Ryegrass in Rice

Gramoxone at 4 PT/A, 7 DPP

Density: 18 plants/ft^2, 14 DAE
Height: 4 inches, 21 DAE
50% heading: 91 to 96 DAE
Yield: 169 bushels/A

No Italian ryegrass

Density: 23 plants/ft^2, 14 DAE
Height: 6 inches, 21 DAE
50% heading: 84 DAE
Yield: 201 bushels/A

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Early Paraquat Exposure

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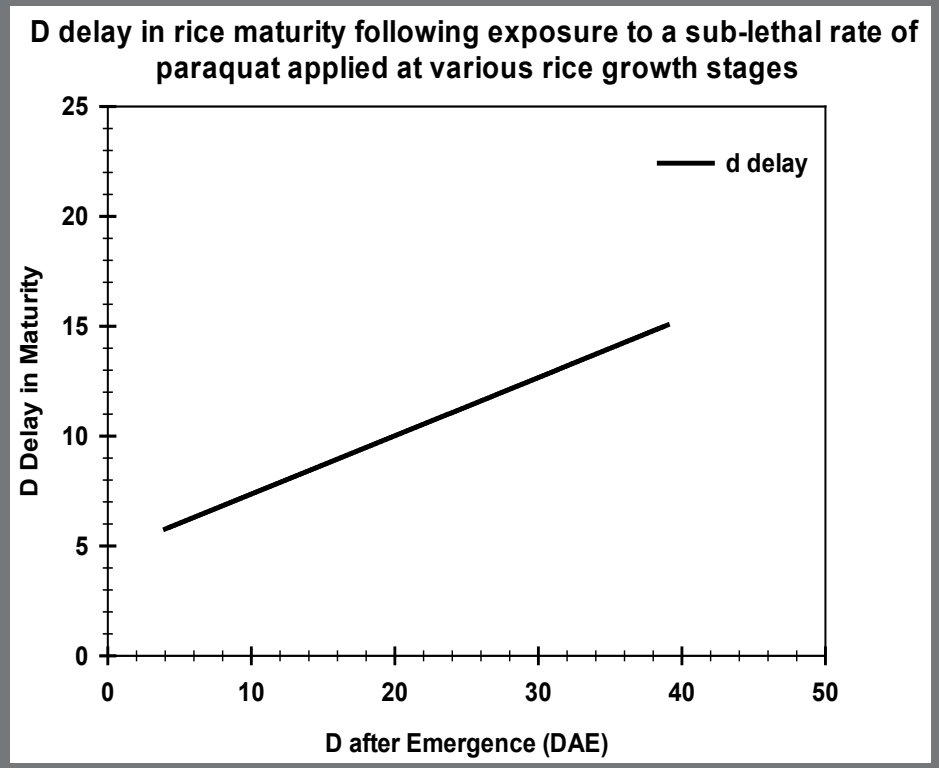
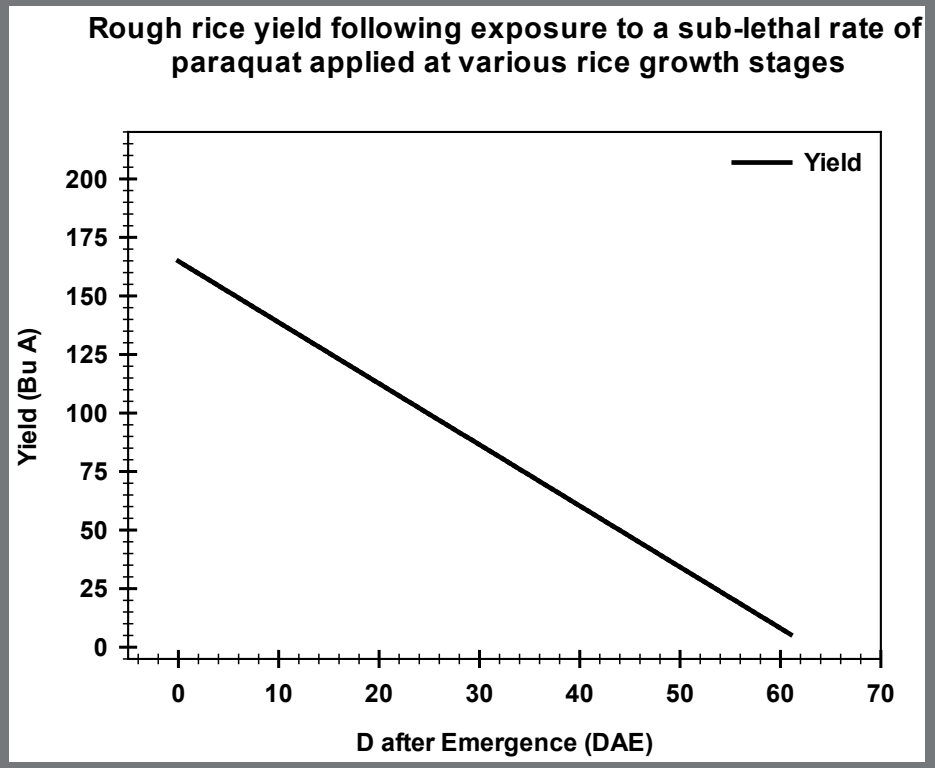
Early Paraquat Exposure

- Delay in rice maturity was 1.9 days for each week after emergence that exposure occurred.
- Rice yield reduction was 2.6 bushels/A for each day after emergence that exposure occurred.



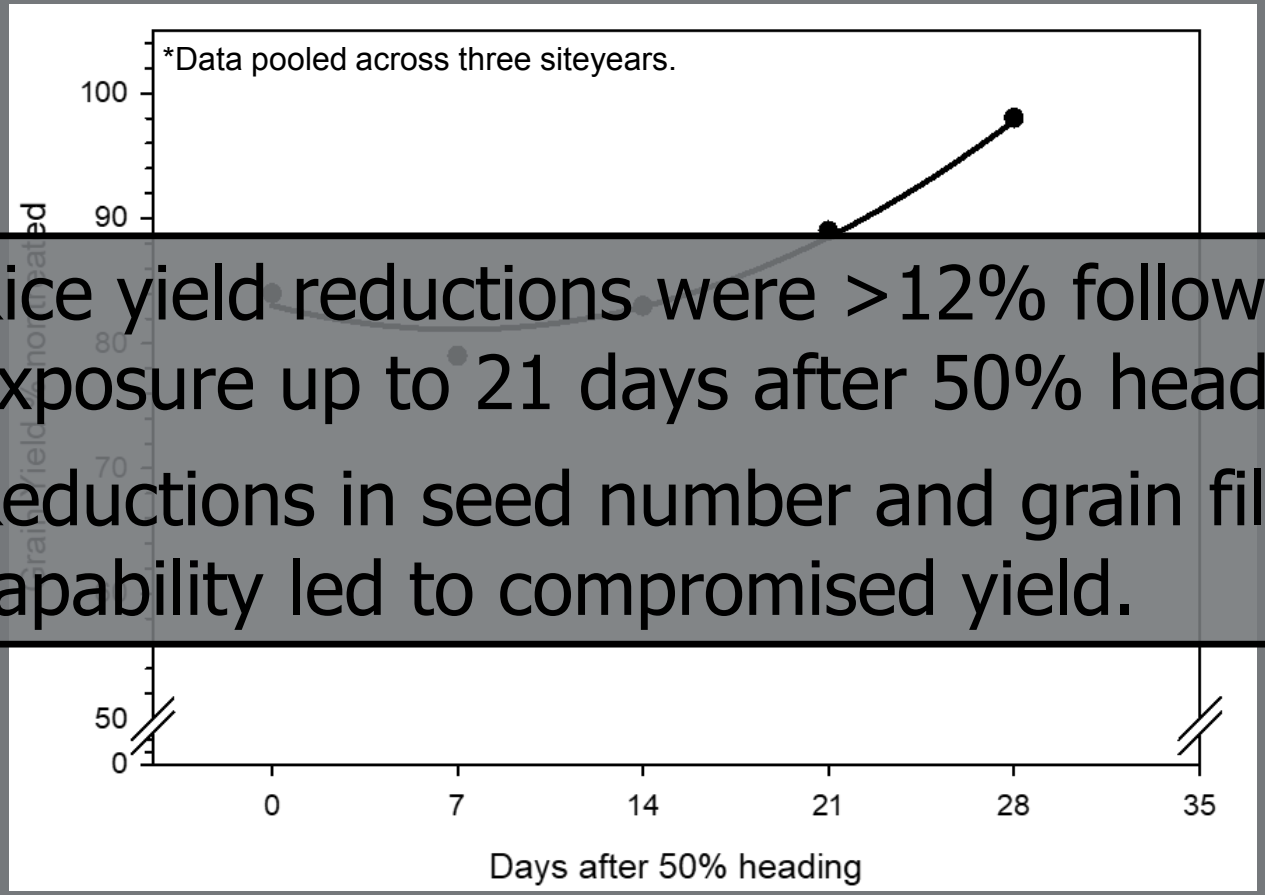


Source: Ben Lawrence

Late Paraquat Exposure

Late Paraquat Exposure

Rice yield affected by exposure to sub-lethal concentrations of paraquat late in the season

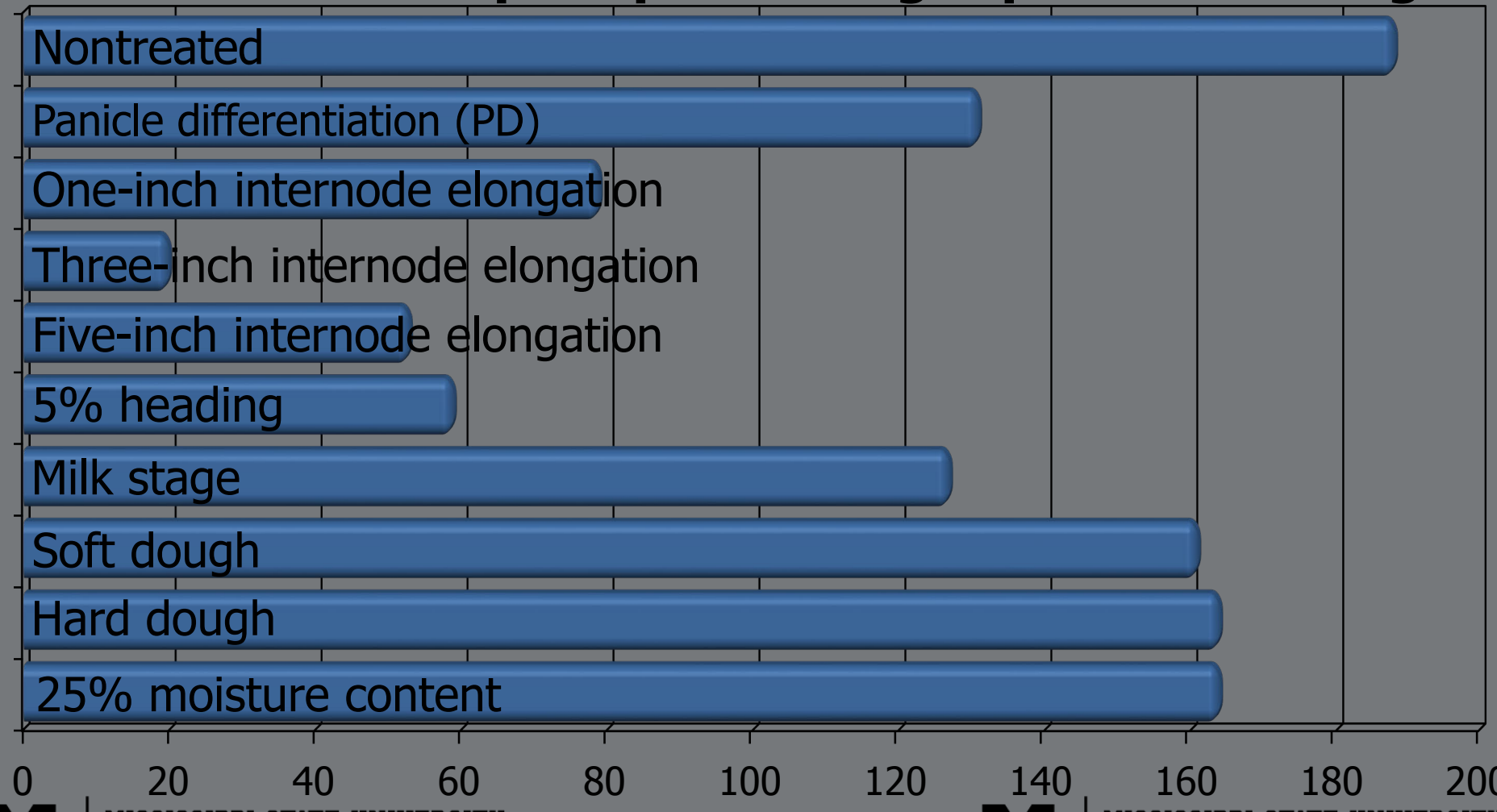


- Rice yield reductions were >12% following exposure up to 21 days after 50% heading.
- Reductions in seed number and grain filling capability led to compromised yield.

Source: Justin McCoy

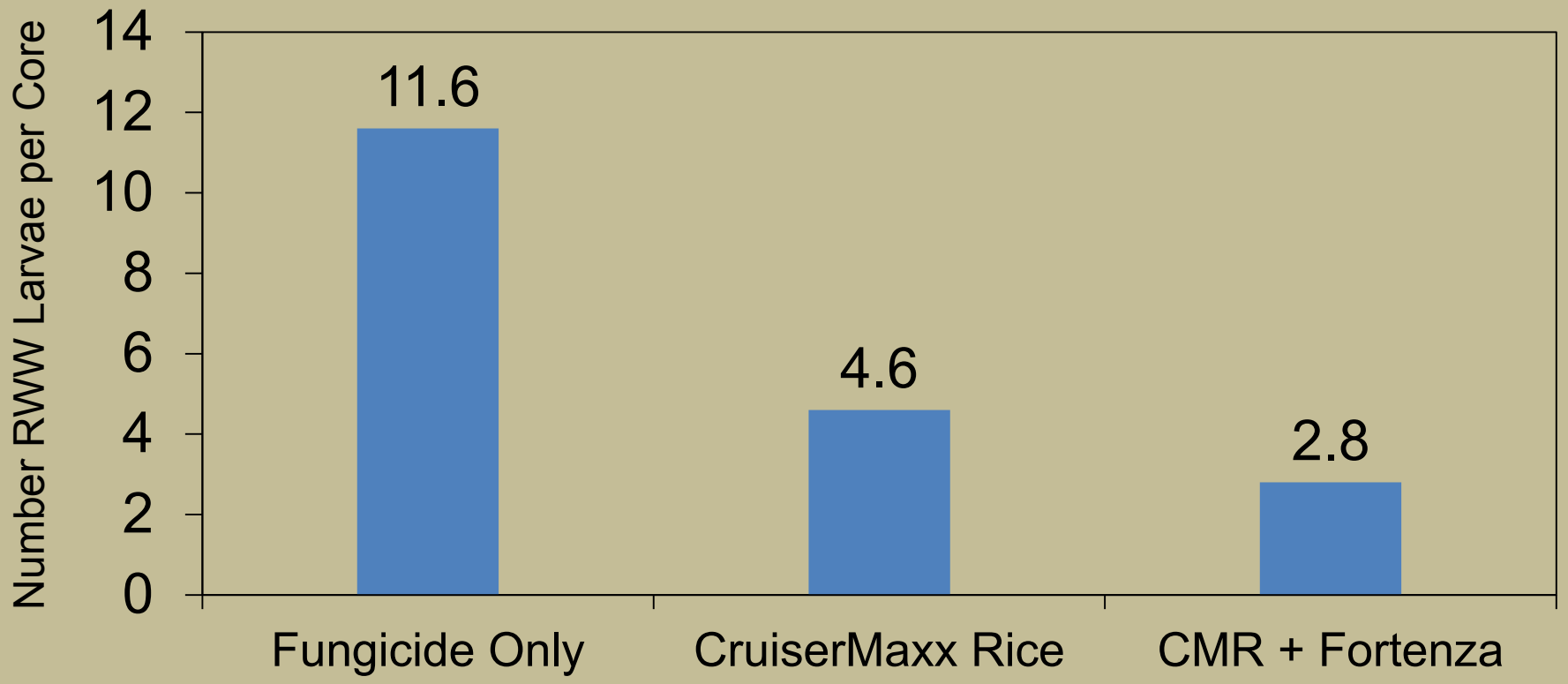
Mid-Late Paraquat Exposure

Rice yield affected by exposure to sub-lethal concentrations of paraquat during reproductive stages



Evaluation of Fortenza in Rice

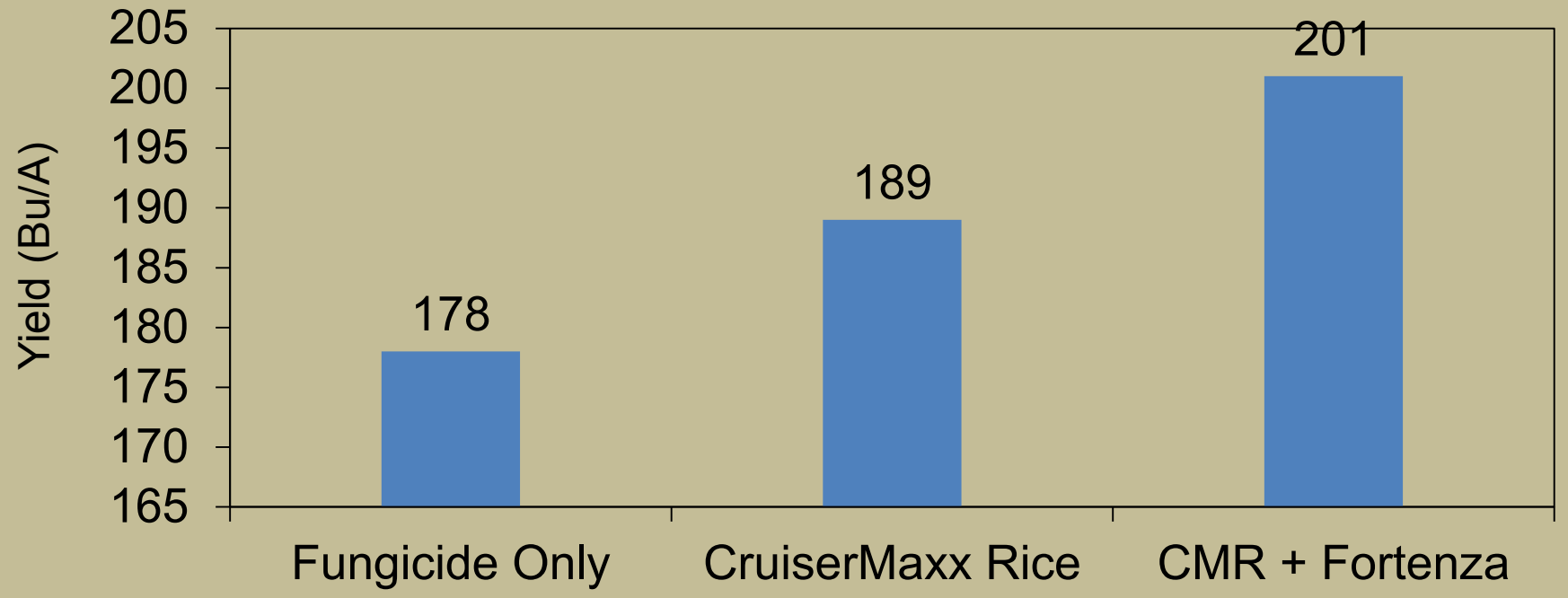
Small Plot - Replicated



Average of 3 Locations (Washington, Coahoma, and Tunica Counties)

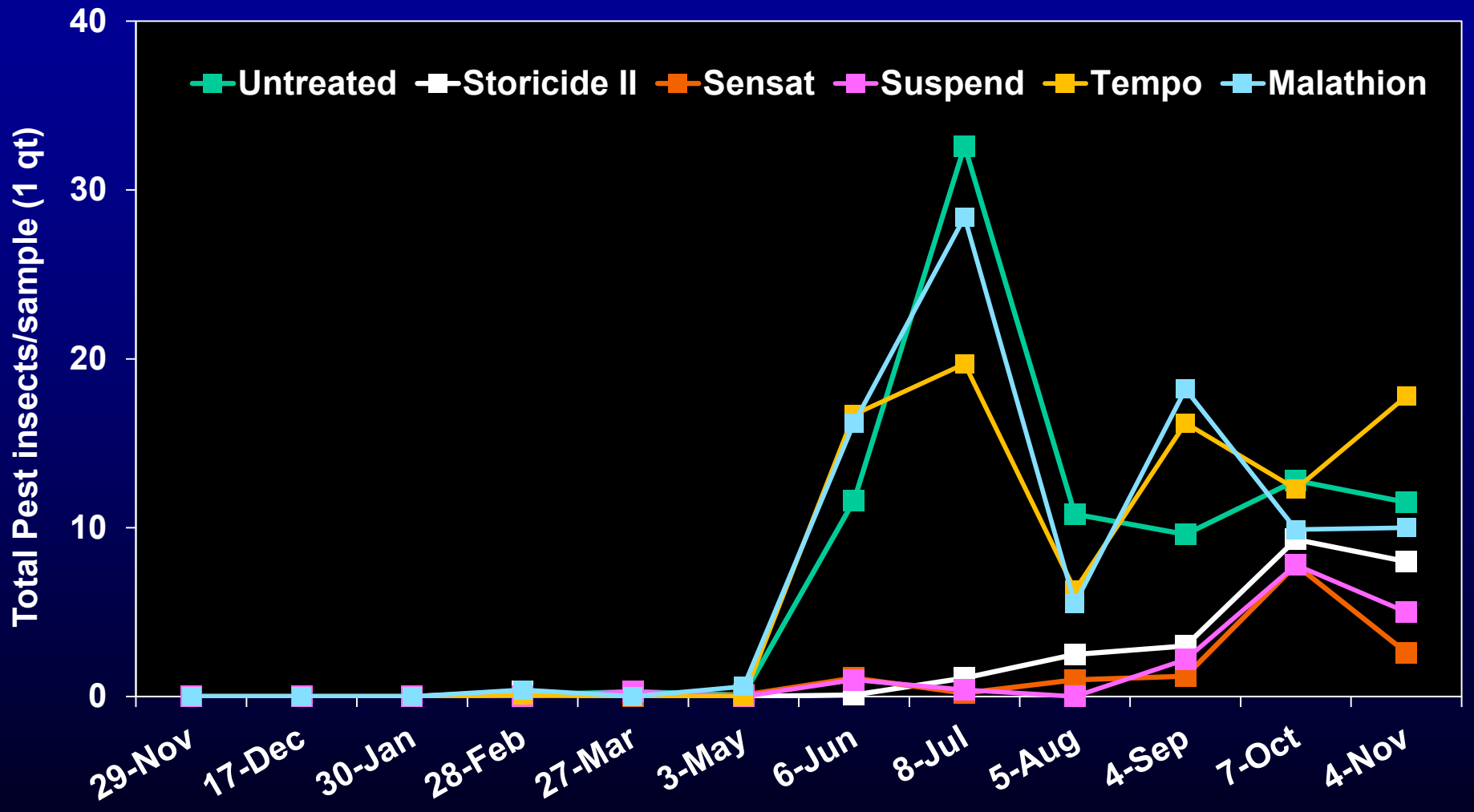
Evaluation of Fortenza in Rice

Small Plot - Replicated



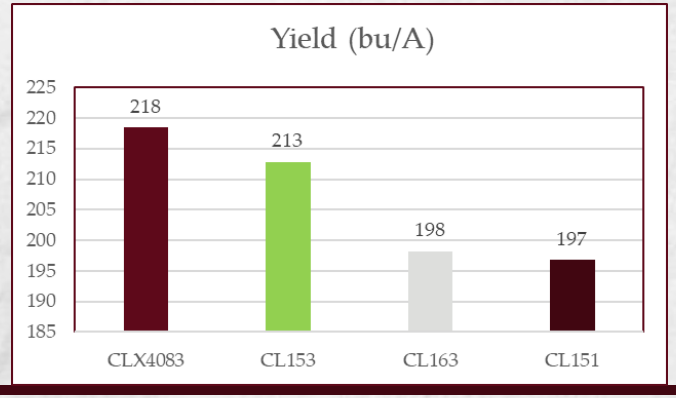
Average of 3 Locations (Washington, Coahoma, and Tunica Counties)

Insect Management in Stored Rice

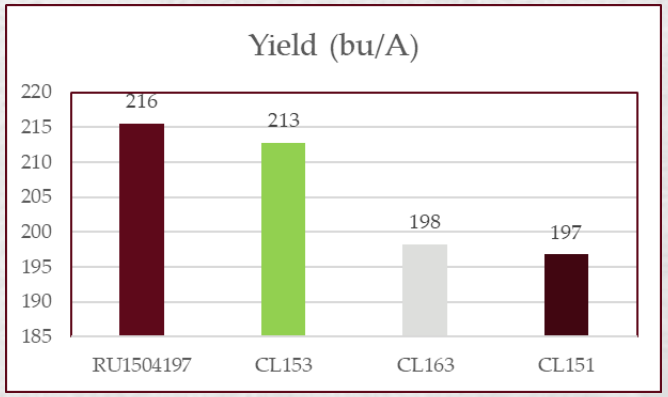


Potential CL Releases

- Typical southern US long grain
- High yield; widely adapted
- High seedling vigor, Non-lodging
- Shorter and earlier heading than CL checks
- Negative: chalkiness could be as high as hybrids
- Data presented: 21 trials/locations (2016-2018)



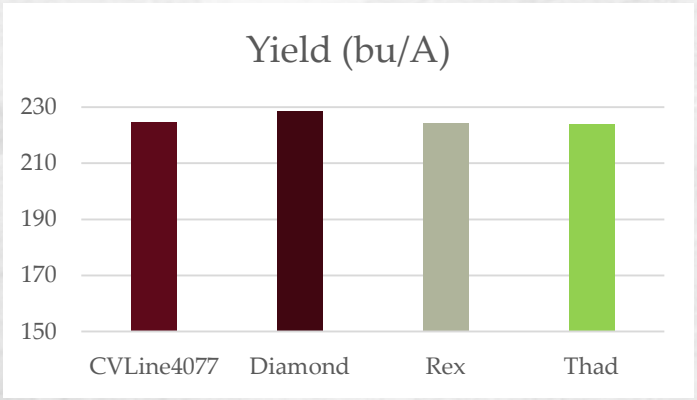
- High yield
- L202-type cereal chemistry: high amylose, soft-cooking
- Similar to Cheniere in terms of grain/cooking quality
- Shorter than CL checks and same heading as CL153 (88d)
- Has PiK gene for blast resistance
- Summary data 21 trials/locations (2016-2018)



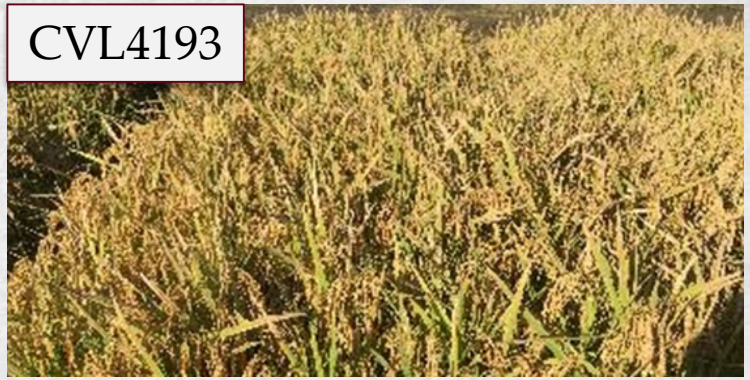
Potential CV Releases

CVL4077

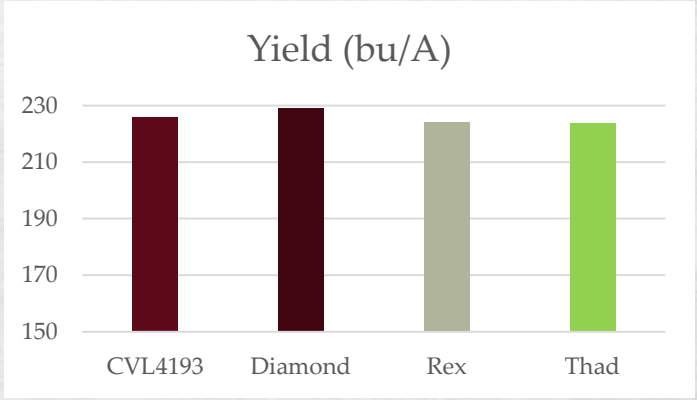
- Typical southern US long grain
- Higher yield than Rex & Thad (4 bu/acre)
- Widely adapted, non-lodging
- Has PiK gene for blast resistance
- Earlier by 2-3 days than CV checks
- Same height as Diamond (42 in)
- Data for 20 trials/locations (3 years, 2017-19))



CVL4193



- Typical southern US long grain
- Higher yield than Rex & Thad (2-3 bu/acre)
- High milling recovery (whole & total) than CV checks
- Lower chalk than CV checks
- Has the Pita gene for wide-spectrum blast resistance
- Data for 20 trials/locations (3 years; 2017-19)



Seed Production of Potential Releases

- **CLX4083:** Foundation seeds already available with HorizonAg
- **CLX4197:** Breeder seed produced in 2018; Provided to Horizon Ag for foundation seed production in 2019
- **CVL4077:** Panicles selected in Puerto Rico in 2018; Breeder seed being produced in 2019 for MAFES foundation seed production in 2020
- **CVL4193:** Panicles selected in 2019 for breeder/headrow seed in 2020 and MAFES foundation seed production in 2021

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