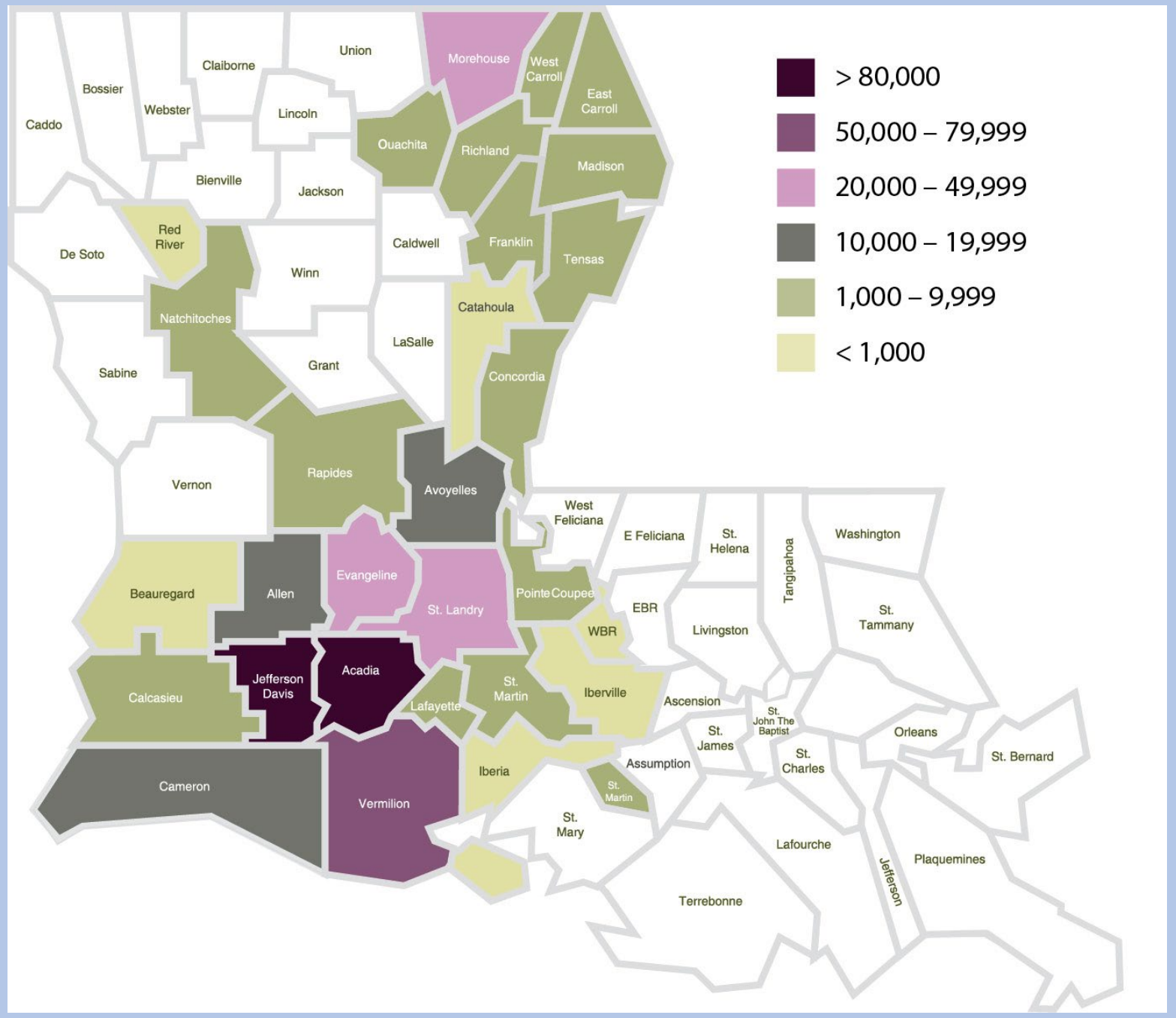
Louisiana Rice

Ronnie Levy
LSU AgCenter Rice Specialist

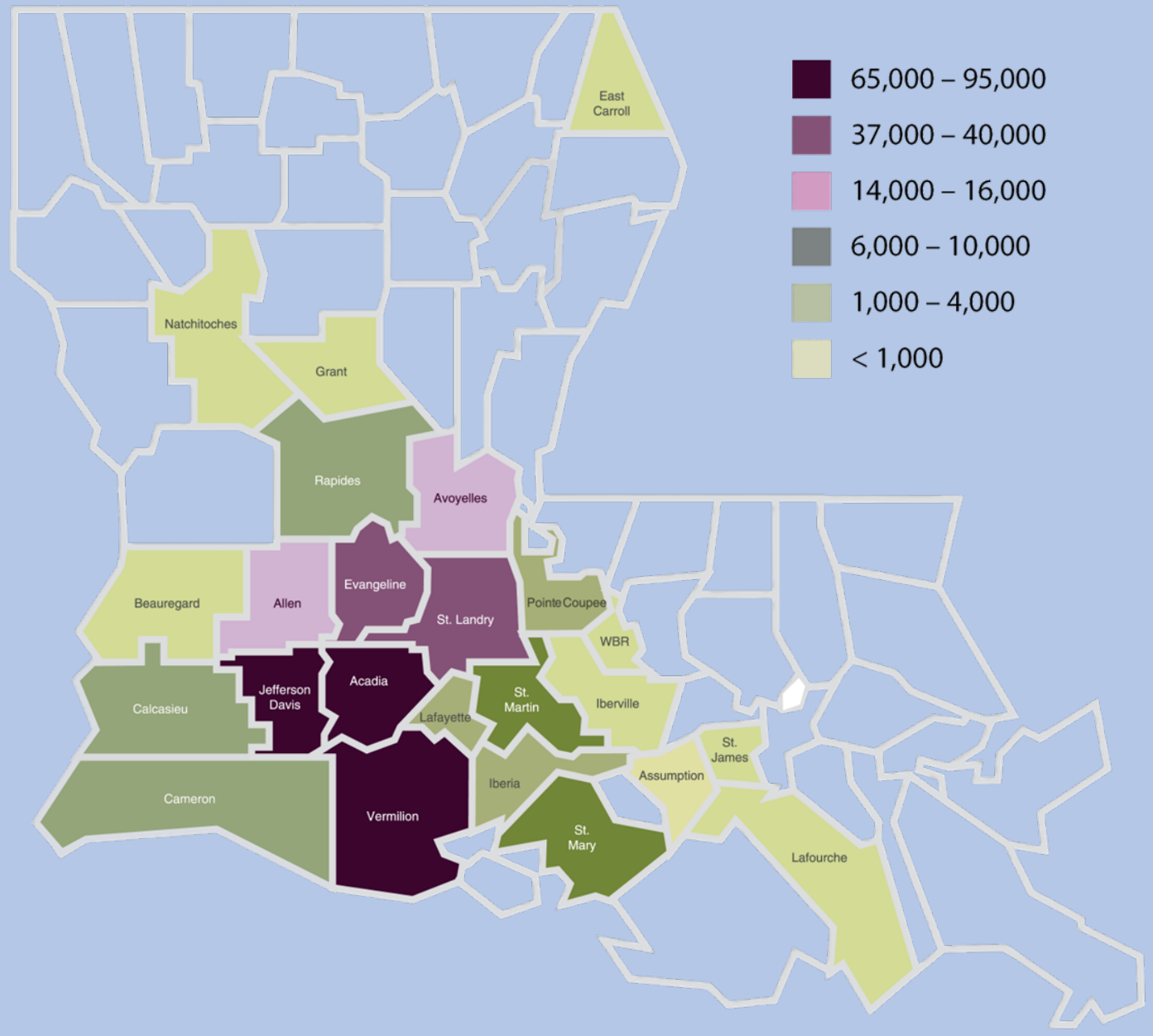
2024 Louisiana Rice Acreage

2021	2022
411,690 acres	415,556 acres
2023	**2024**
461,371 acres	459,690 acres

0.36 % Decrease in acres



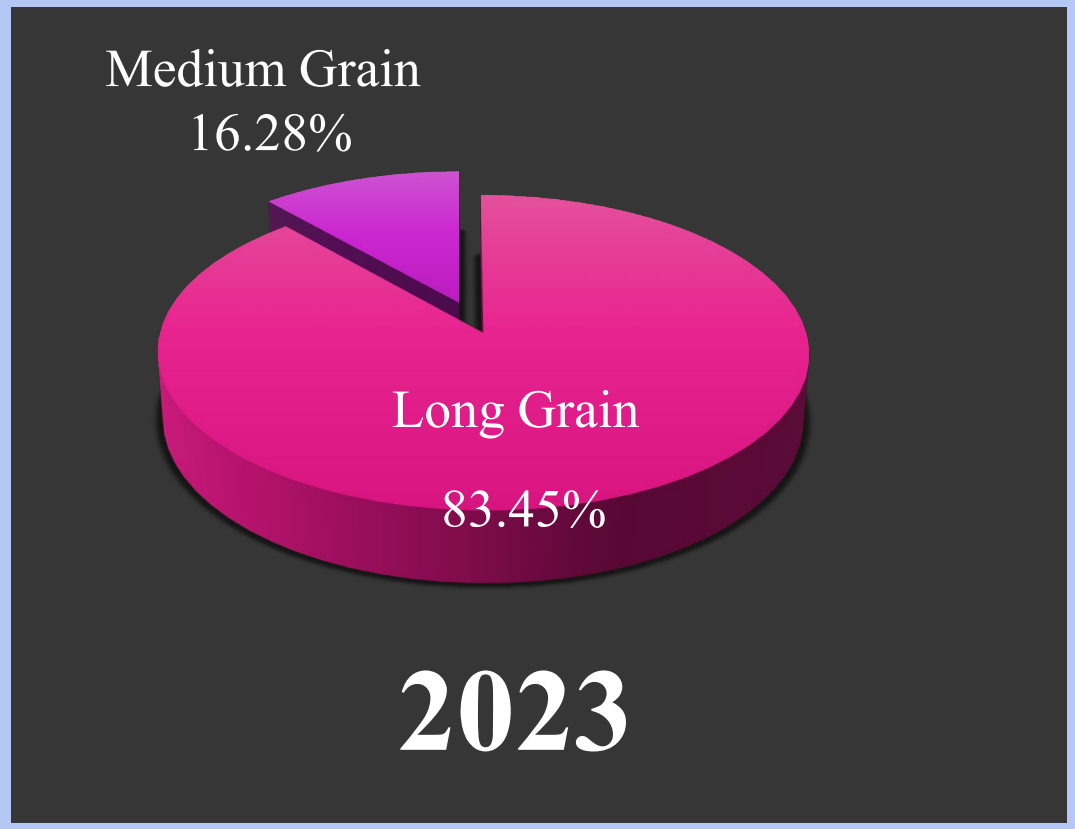
2024 - 2025 Projected Crawfish Acres 400,000

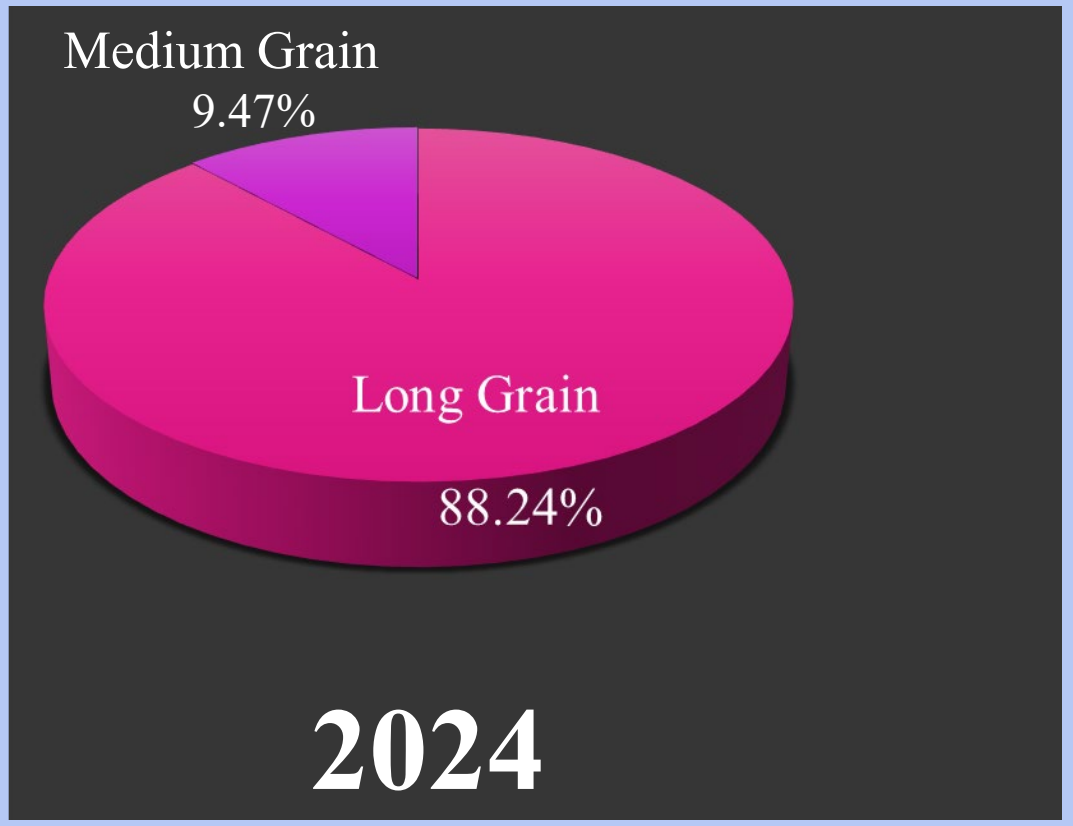


Furrow Irrigated (AWD/Row) Rice

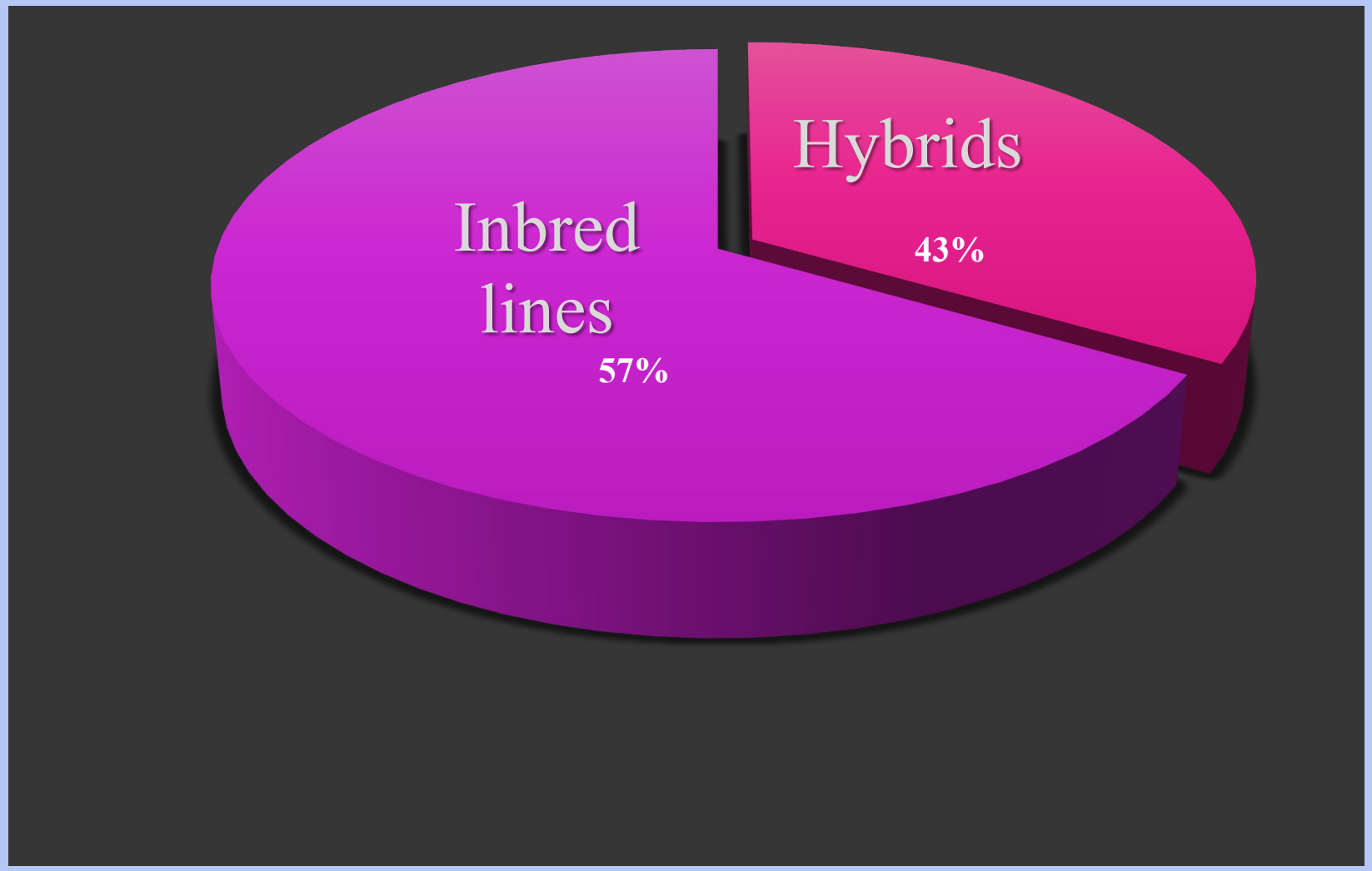
2,500 acres in 2017
5,000 acres in 2018
15,415 acres in 2019
35,600 acres in 2020
23,468 acres in 2021
13,863 acres in 2022
14,025 acres in 2023
28,620 acres in 2024

Louisiana Rice Acreage

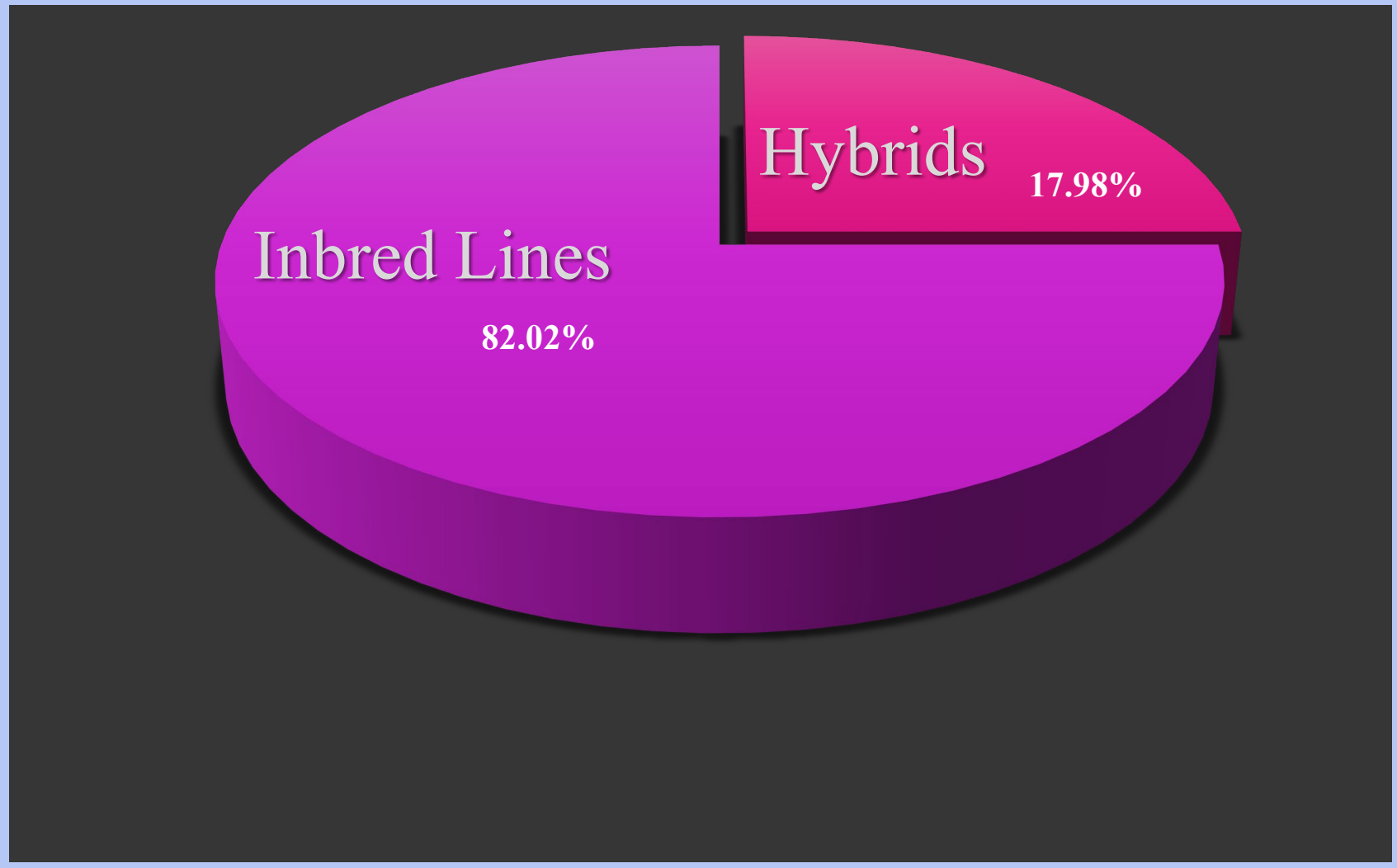




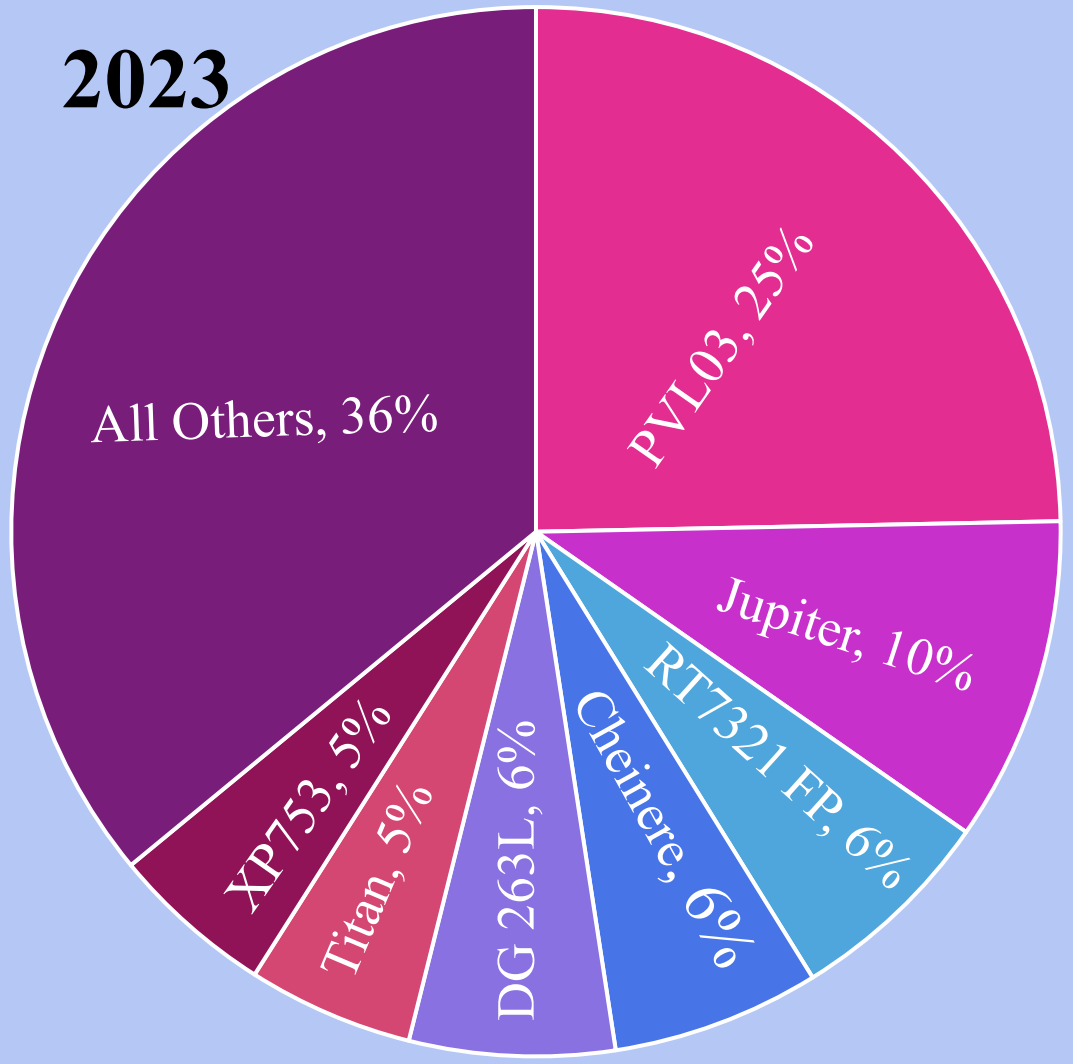
2021 Louisiana Rice Acreage – Hybrids

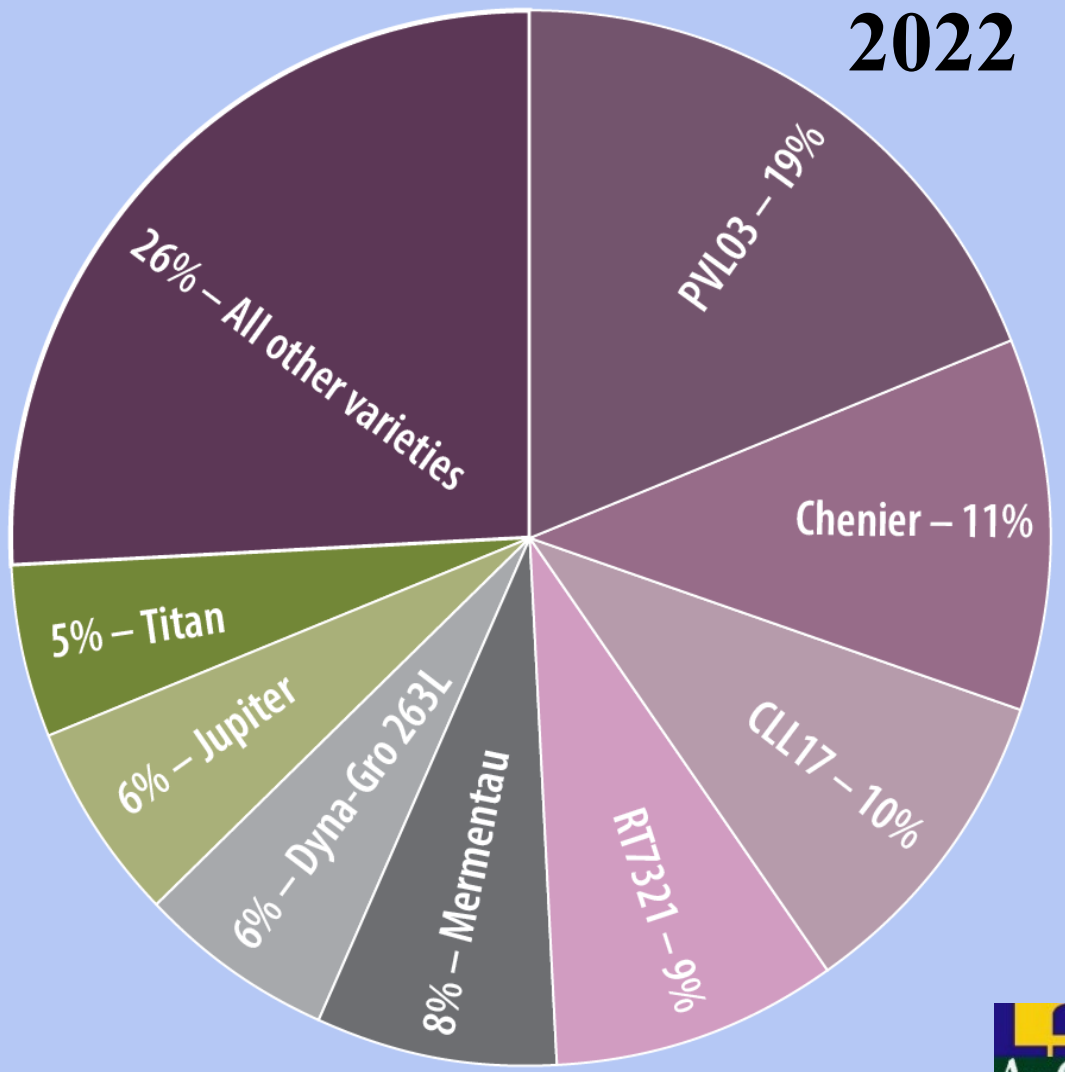


2024 Louisiana Rice Acreage – Hybrids



Louisiana Rice Acreage by Variety





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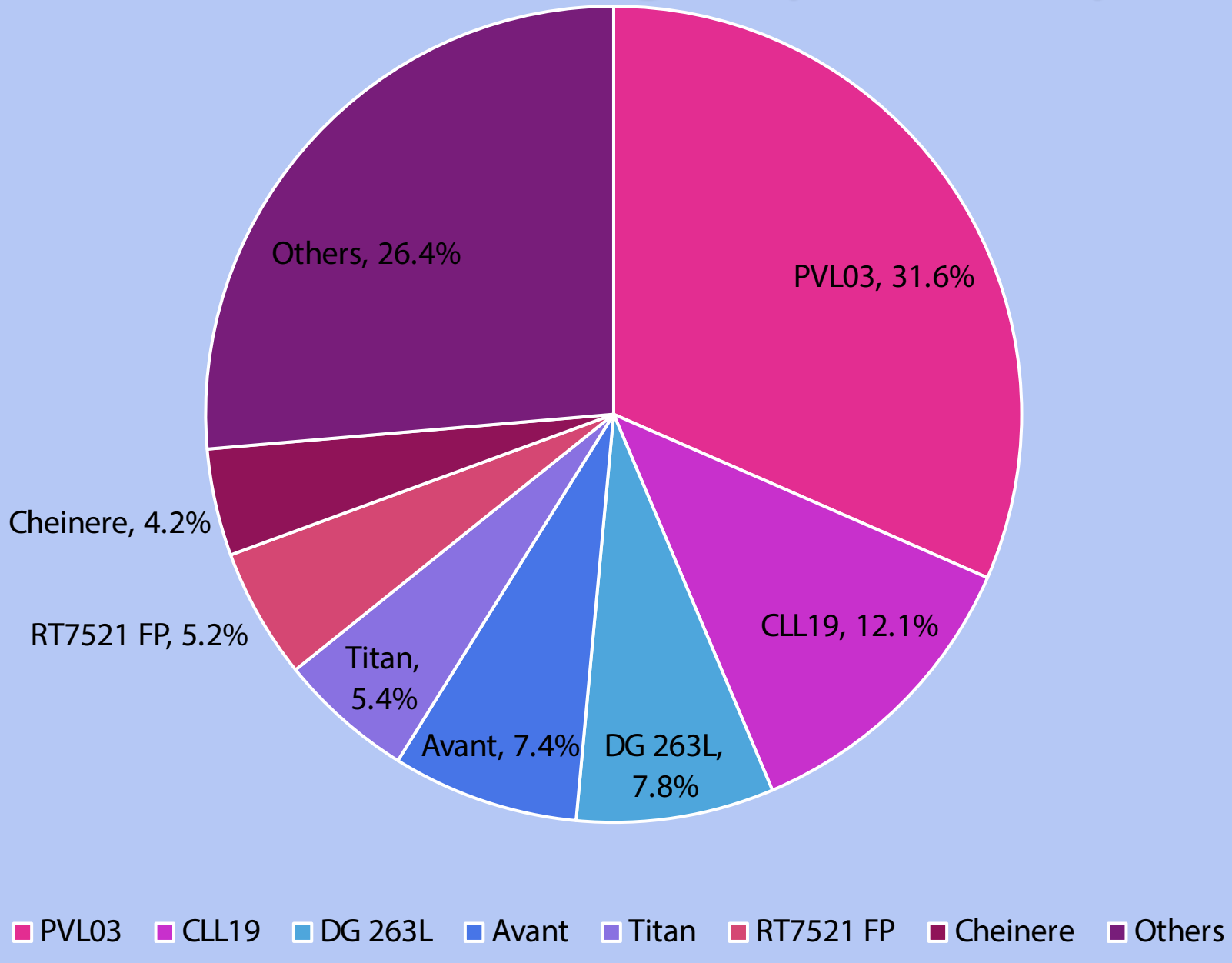
Louisiana Rice Acreage by Variety 2024



Environmental Impact

Over the past 40years, improved sustainability practices have led to increased production and crop yields while also yielding some of the greatest environmental benefits

Crop yield per acre increased 62%

Rice production increased 32%

Land use decreased 39%

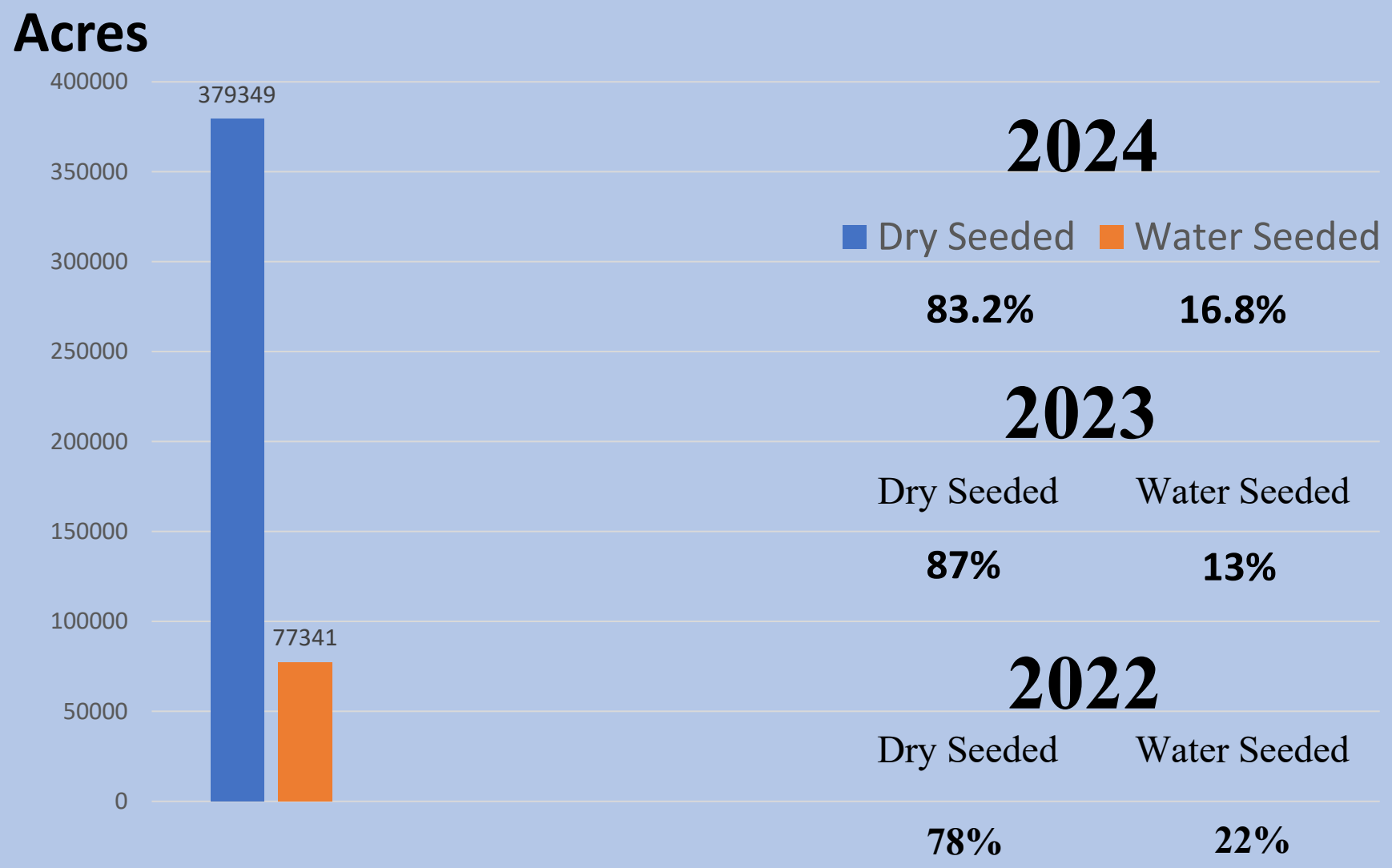
Water use decreased 52%

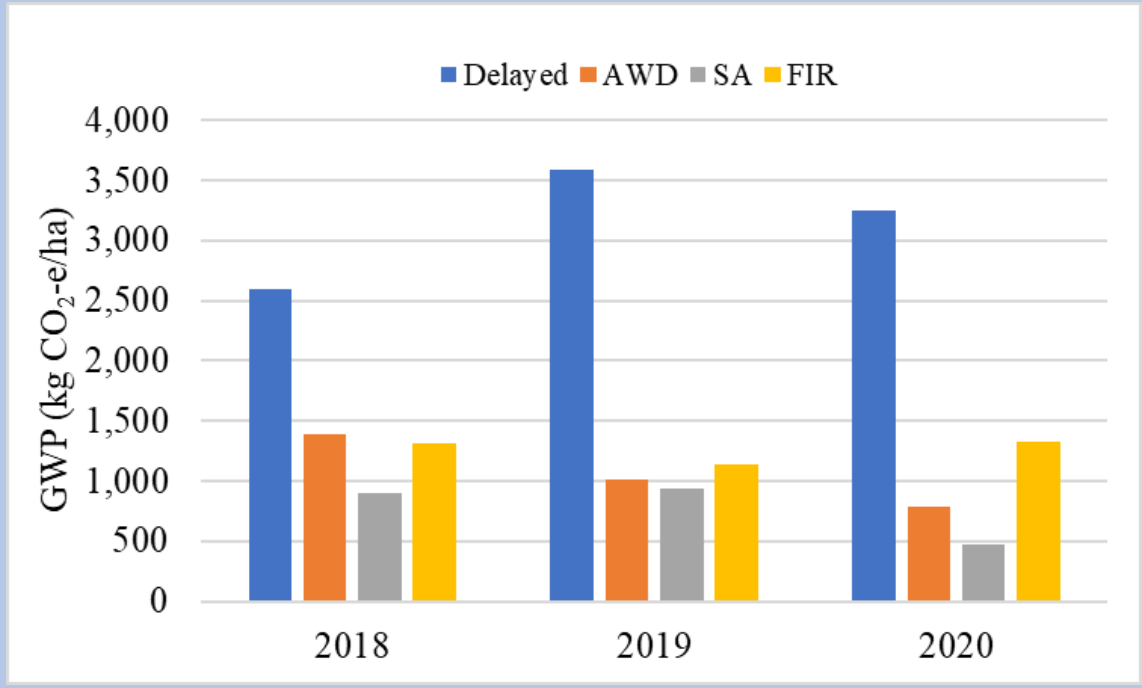
Energy use decreased 34%

Greenhouse Gas Emissions decreased 41%

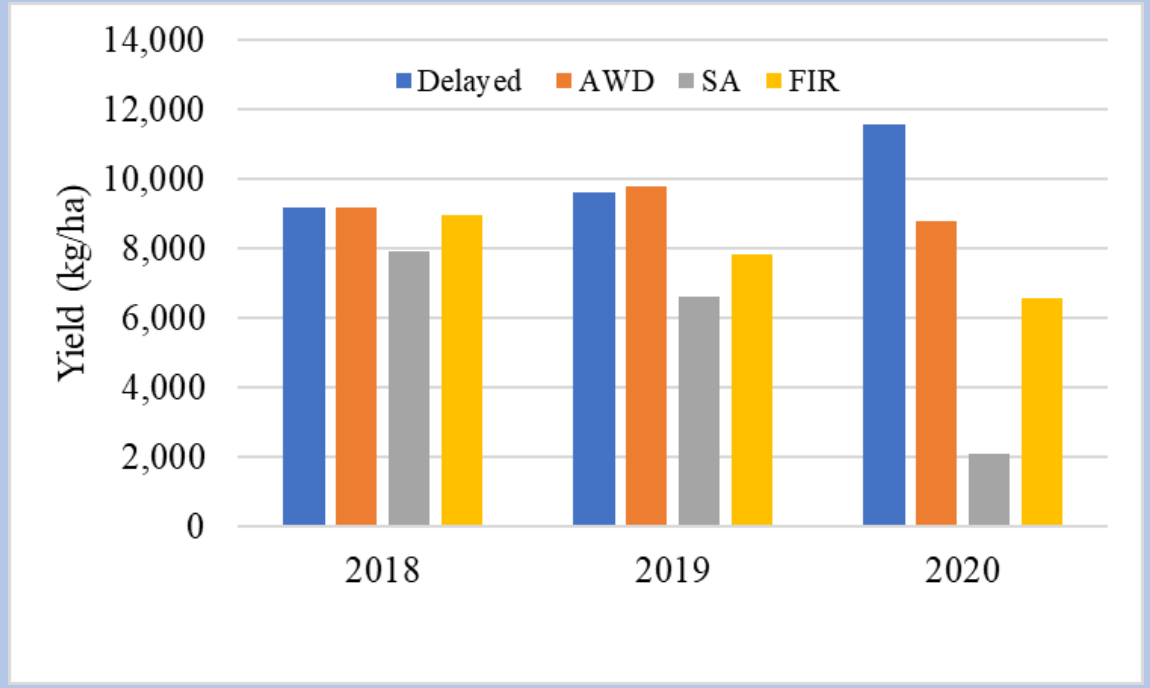
Soil loss decreased 28% (on a per acre basis)

Tillage and Water Management





Global warming potential (GWP – 100-year time horizon (CO_2 equivalent)) from different water management practices; delayed flooding (Delayed), alternate wetting and drying (AWD), semi-aerobic (SA), and furrow irrigated rice or row rice (FIR). The study was conducted at H. Rouse Caffey Rice Research Station from 2018-2020.



Grain yield (kg/ha) from different water management practices; delayed flooding (Delayed), alternate wetting and drying (AWD), semi-aerobic (SA), and furrow irrigated rice or row rice (FIR). The study was conducted at H. Rouse Caffey Rice Research Station from 2018-2020.

GREENHOUSE GAS	100-YEAR (GWP) Global Warming Potential
• Carbon dioxide (CO_2)	1
• Methane (CH_4)	25
• Nitrous oxide (N_2O)	298

RED RICE/WEEDY RICE

Barnyardgrass

Root pruning by weevil larvae

Rice Stink Bug

Stem Borers

Rice Delphacid

Rice Hoja Blanca Virus (RHBV)

Cercospora (*Cercospora janseana*)

Narrow Brown Leaf Spot

Cercospora Net-Blotch

Cercospora Panicle Blight

Kernel Smut

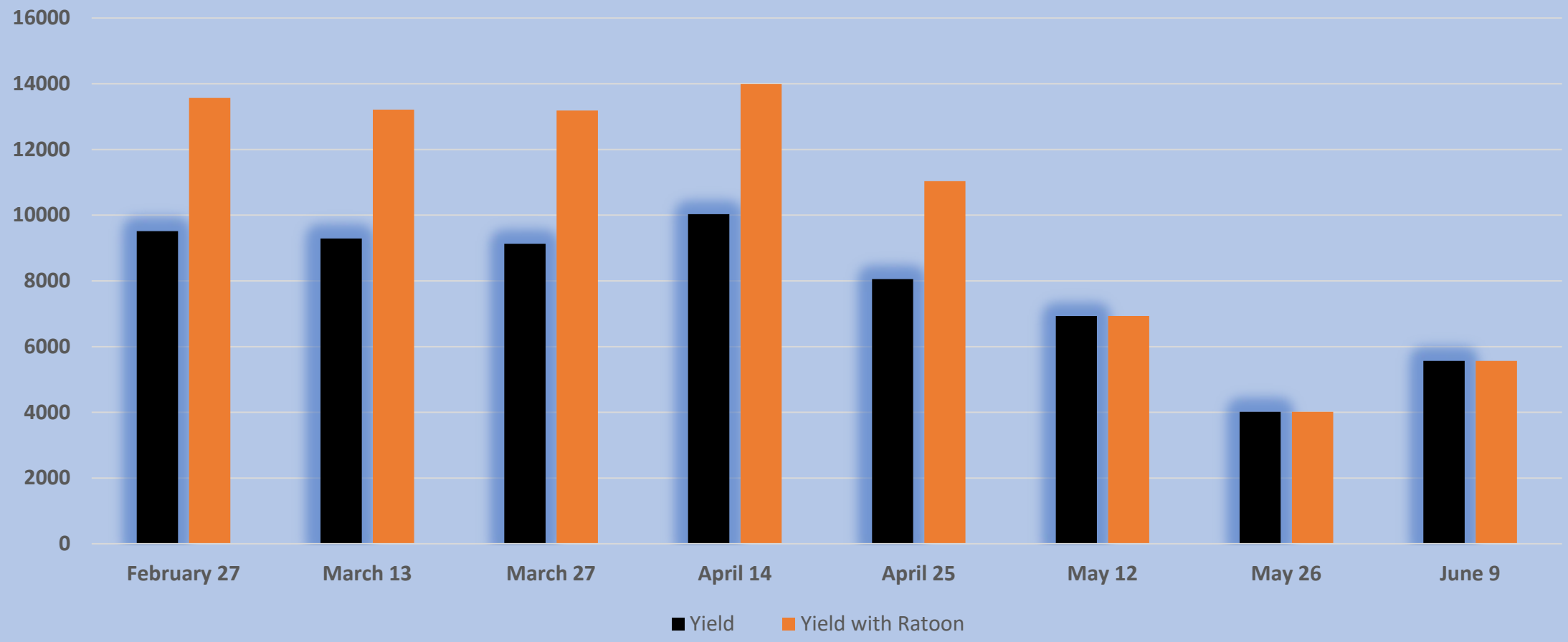
- Impact on grain quality
- Moisture during flowering
- No scouting
- Fungicide: 2-4 in. panicle – no effective after boot split

Kernel Smut

(*Tilletia barclayana*)

74

Date of Planting Study 2023



Date of Planting Study 2024

Based on information from seeding date research trials, the optimum planting dates for rice are:

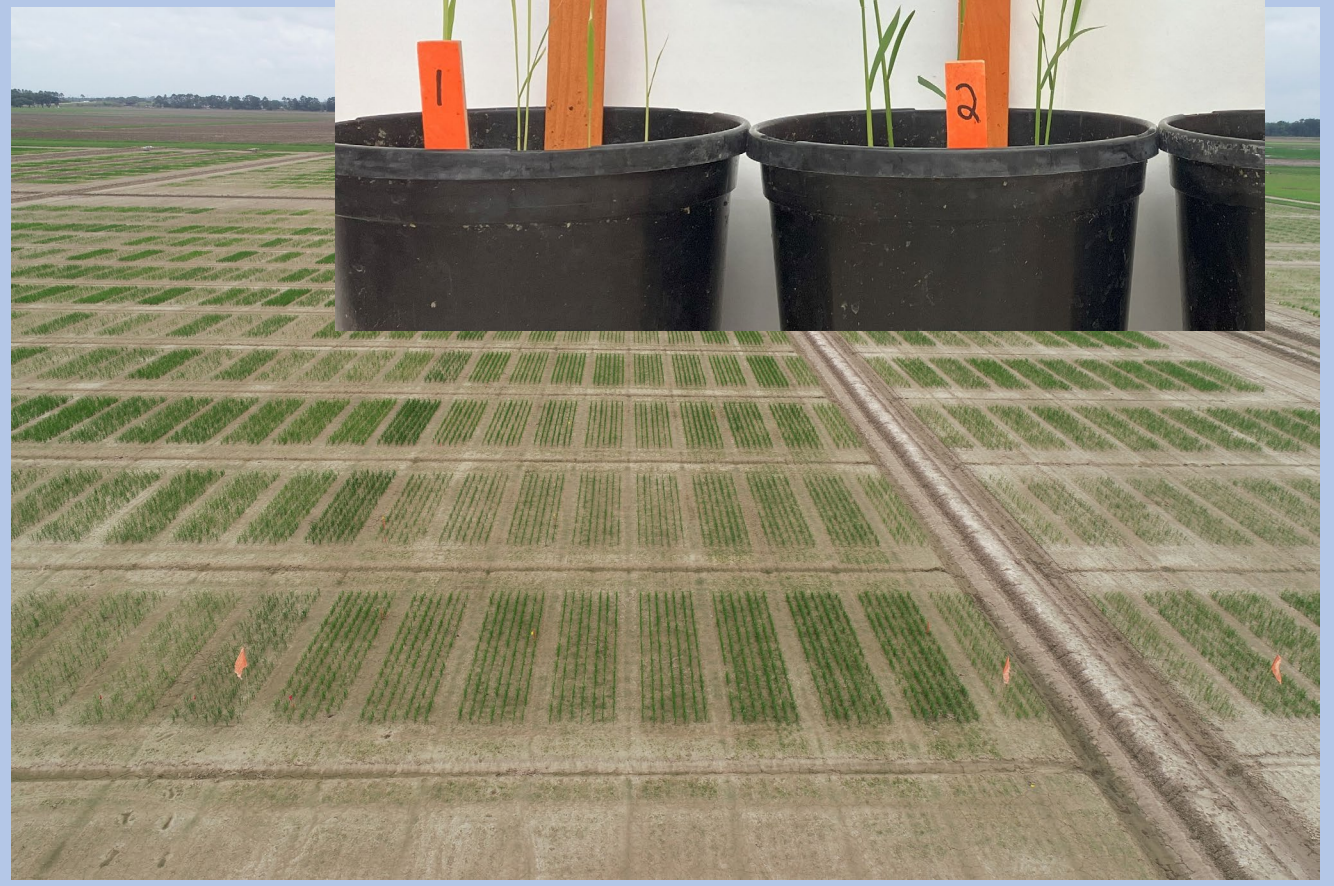
- Southwest Louisiana — February 25 to March 20.
- North Louisiana — March 15 to April 15.

Preliminary studies – N starter

Pot experiment

- No N at planting
- N rate 20 lb N/A (from urea)
  - At planting
  - At 2-3 leaf

- Results
  - Plant reached 4- to 5-leaf stage about 7-10 days earlier than treatment without starter N



Louisiana Rough Rice Yield & Production

2024

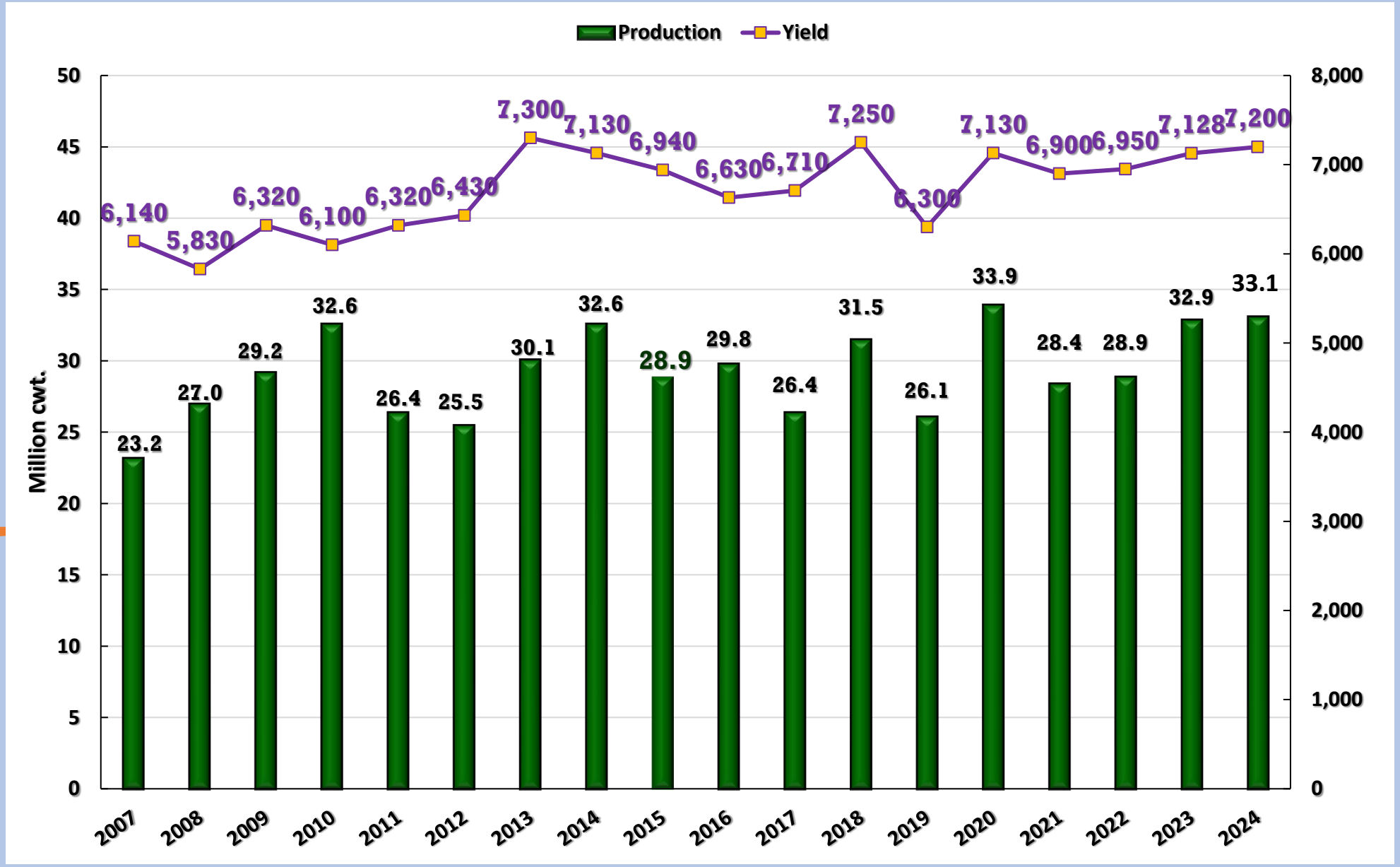
7200 Pounds
160 Bushels
44.4 Barrels

2023

7128 Pounds
158.4 Bushels
44 Barrels

2022

6950 Pounds
154.4 Bushels
42.9 Barrels



Louisiana Rice Research Update

2024 USA Rice Outlook Conference
Little Rock, Arkansas
December 8-10, 2024

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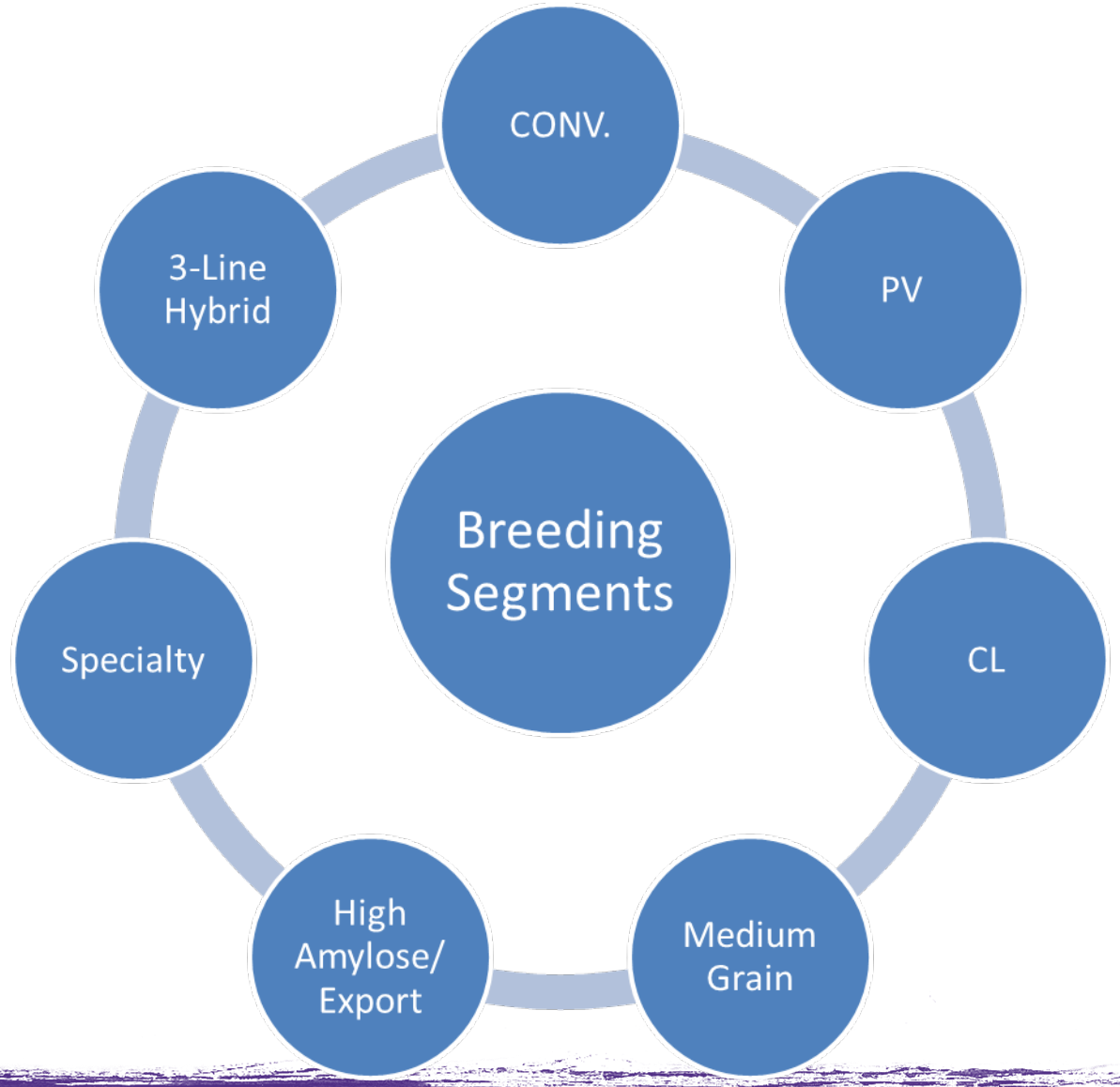
H. Rouse Caffey Rice Research Station

- **Five Major Research Focus Areas**
  - Breeding
    - Dr. Adam Famoso
    - Dr. Brijesh Angira
    - Dr. Harry Utomo
  - Pathology – Dr. Felipe Dalla Lana
  - Agronomy – Dr. Manoch Kongchum
  - Entomology – Dr. Blake Wilson
  - Weed Science – Dr. Connor Webster

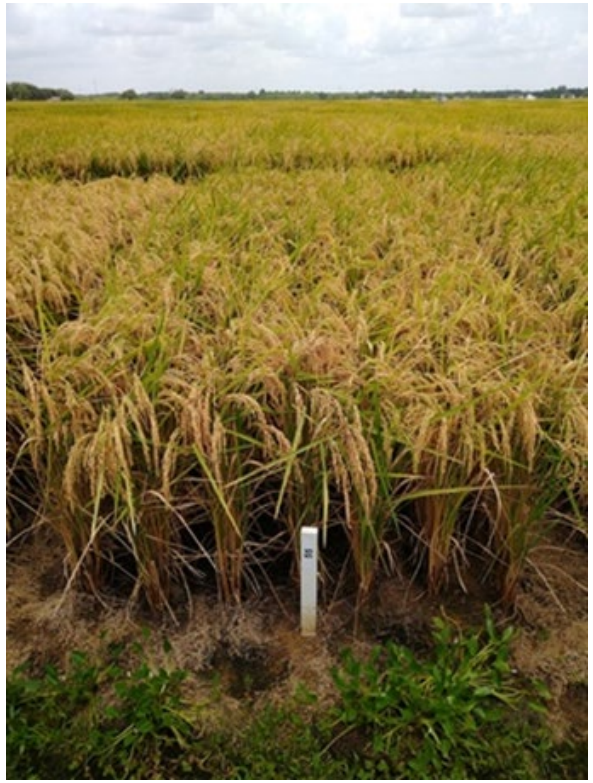
Breeding Segments



Segment	% Allocation
Grain Types	
Long	75%
Specialty	5%
Medium	20%
Herbicides	
CONV	40
CL	30
PV	30

Conventional Breeding Update

- **211L1008**
  - RU1702183/Avant
  - 3 days later DTH than Avant, similar maturity
  - 2 inches taller than Avant
  - Increased Yield in 1st crop, Strong 2nd crop
  - Blast resistant with Pita gene



- **211L1251**
  - Catahoula/Lakast
  - Later DTH and maturity
  - Lower milling yields
  - Improved 1st crop yields, slightly lower 2nd crop
  - Blast resistant with Pita gene

Line	Chalk	DTH	Grain Length	L/W Ratio	Lodging %	Height	Sheath Blight	Total	Whole	Ratoon	Yield	Total Yield
201L1251	20.9	88.4	6.7	3.2	3.2	97.7	4.6	69.3	52.3	3474.1	8567.3	12041.5
211L1008	21.6	81.7	6.7	3.1	3.3	98.5	5.6	70.3	60.5	3973.0	8161.0	12134.0
Avant	19.6	78.5	6.7	3.1	0.3	93.1	4.3	70.5	59.7	3804.6	7859.1	11663.6
Cheniere	9.9	87.7	6.7	3.1	0.6	97.4	4.2	72.3	64.3	4019.1	6885.3	10904.4
DG263L	20.1	85.6	6.2	2.8	10.8	99.9	6.3	67.1	55.2	1657.5	8969.1	10626.7

Conventional Breeding Update

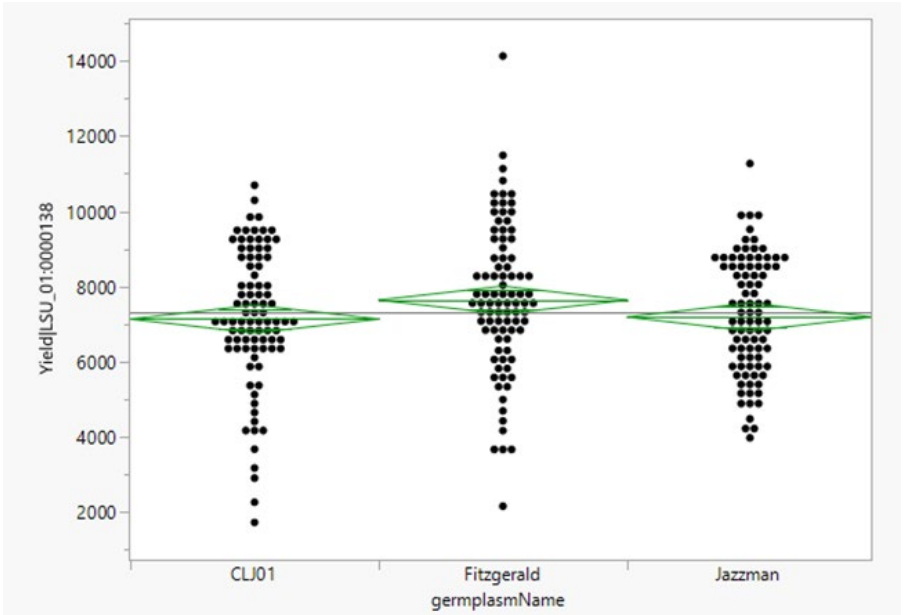
- **LA21-2070 “Venus”**
  - Conventional medium grain
  - Target commercial release in 2026
  - Strong and stable yield performance compared to Titan and Jupiter
  - Flower 5 – 6 days earlier than Jupiter

Multiple Trials 2019 – 2024 Average

	Grain length (mm)	Grain width (mm)	LW ratio	Days to heading	Plant height (in)	Total	Whole	Yield (lbs/ac)
Venus	6.0	2.7	2.2	82	38	69	61	8,815
Jupiter	5.8	2.7	2.2	88	37	67	61	7,967
Titan	6.0	2.7	2.3	81	37	69	59	8,210

Conventional Breeding Update

- **Fitzgerald (LA20 – 2166)**
  - Catahoula/Jazzman
  - Commercial Release for 2025
  - Improved Yield and Blast Resistance

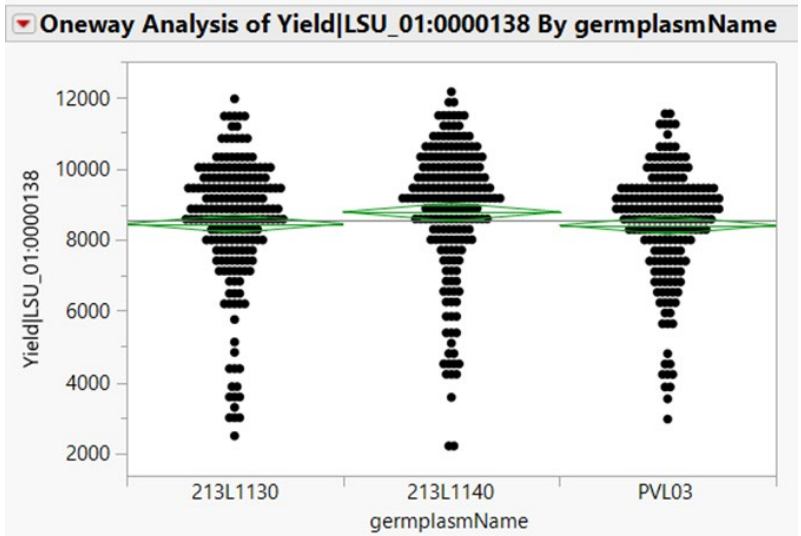


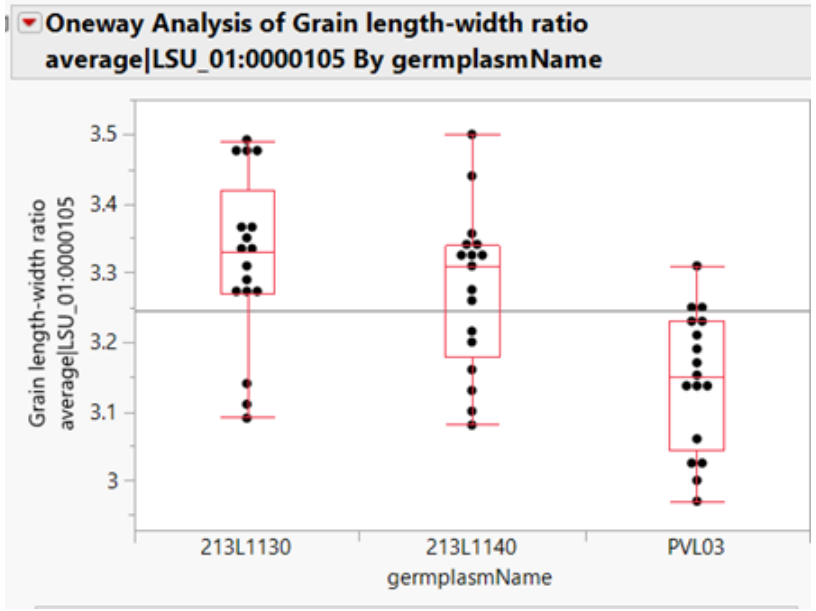
Level	Chalk	DTH	Grain Length	L/W Ratio	Height	Ratoon	Total	Whole	Yield
CLJ01	5.4	85.6	6.8	3.2	97.3	3293.6	70.7	62.7	7135.7
Fitzgerald	9.1	82.4	6.7	3.2	95.2	2804.8	70.0	59.2	7640.5
Jazzman	10.1	86.4	6.7	3.1	101.0	2544.8	69.9	60.5	7188.7

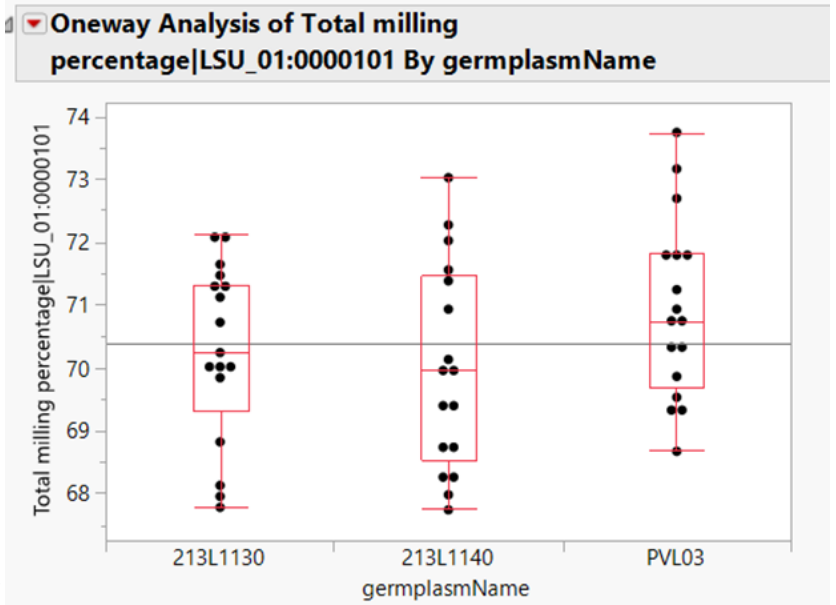
Provisia Breeding Update

- **LA21 – 1140 PV Long Grain**
  - 2-acre increase planted Oct 22nd in Puerto Rico
  - Stable yields and increased 1st crop yields over PVL03/04
  - Lower second crop on average, with more potential for low 2nd crop yield compared to PVL03
  - Lower milling than PVL03
  - Blast resistant with Pita

Head – to Head Comparison with PVL03



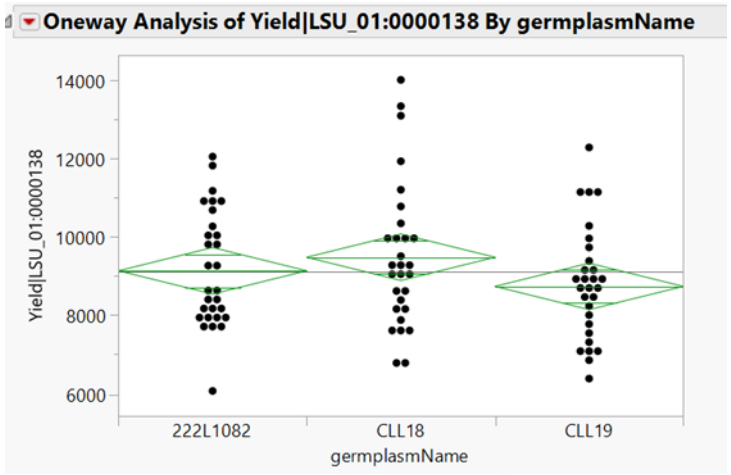


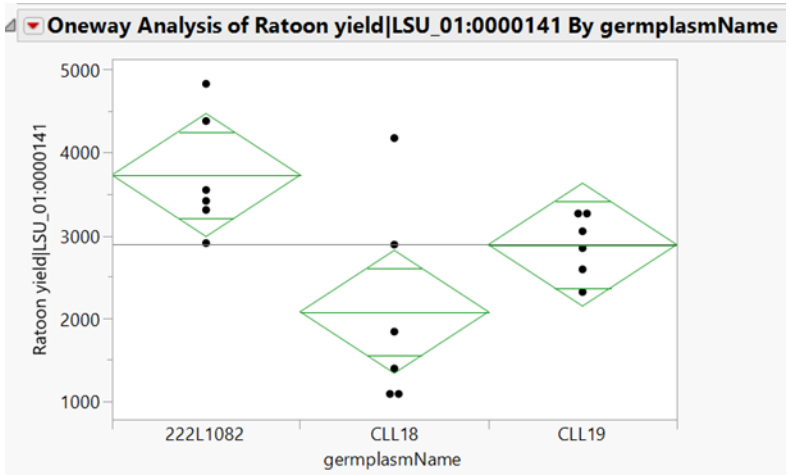


1140/PVL03	1140	PVL03
Wins <5%	11	7
Wins 5-10%	13	1
Wins 10-15%	8	3
Wins >15%	10	3
Total >5%	31	7

Clearfield Breeding Update

- **Advanced Clearfield Long Grain – 222L1082**
  - 2025 will be the 4th year of testing
  - Pedigree: 171L1786/CL153
  - Blast resistant (Pita)
  - Solid in all aspects thus far
    - Yield between CLL18 and 19
    - Similar yield to CLL18 in 2024
    - Excellent ratoon
    - Excellent grain quality
  - Extensive testing and purification planned for 2025
  - Potential commercial release for 2027





Specialty Breeding Update

- **New Advanced Low GI High Protein Rice Lines**
  - 3 promising advanced lines and 12 new entries

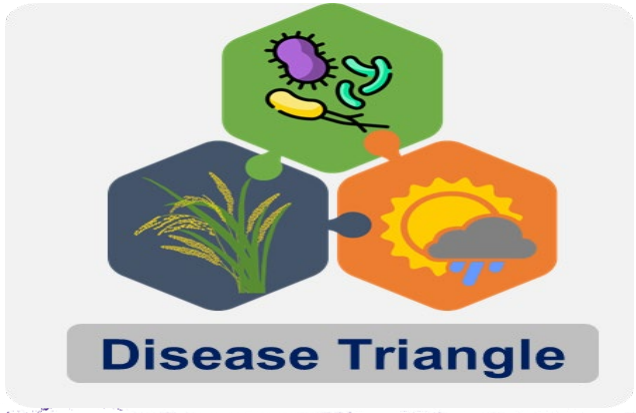
- **Major Health Benefits of Low GI High Protein Rice**

  Yield between CLL18 and 19
  - Diabetes-friendly rice: safe for individuals with diabetes and helps prevent pre-diabetic individuals from progressing to full diabetes.
  - Help manage obesity
  - Offer a more nutritious source of carb-based foods to support healthier lifestyle.

Line	Grain	Yield	Milling	Protein	GI
LGR20191	Long	7322	63/70	11.3	46
LGR20204	Long	8022	62/71	12.0	42
LGR20312	Long	8006	60/70	11.8	47

Pathology Update

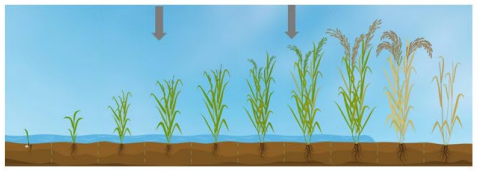
1. Field history
2. Variety resistance and seed
3. Management
4. Weather
5. Disease intensity
6. Yield expectation and market

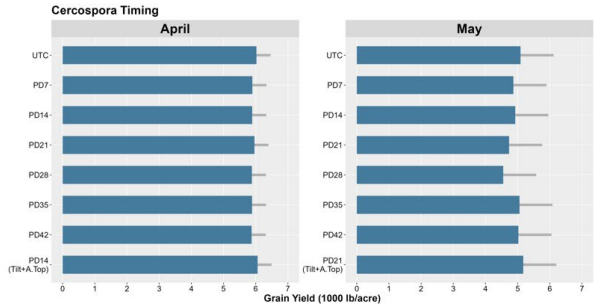


Pathology Update

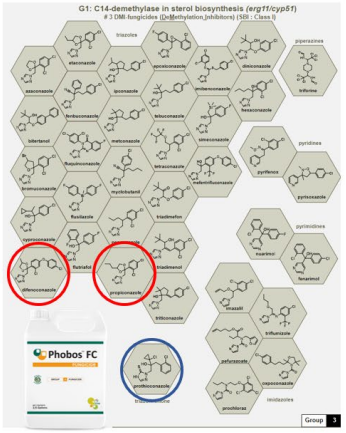
- **Host Resistance**
  - Phenotype (R, MR, MS, S)
  - Discovery of new genetic resistance sources
  - New phenotyping methods
- **Integrated Pest Management**
  - Fungicide panel with all labeled fungicides
  - Sheath Blight IPM (Variety x Fungicide)
  - Cercopora IPM
  - Fungicide Resistance
- **Epidemiology**
  - Risk assessment / forecasting models (Weather + Variety + Management)
  - Management thresholds
  - Spatial and temporal analysis
  - Decision support system
- **Development & Validation of Protocols for Disease Inoculation and Screening**

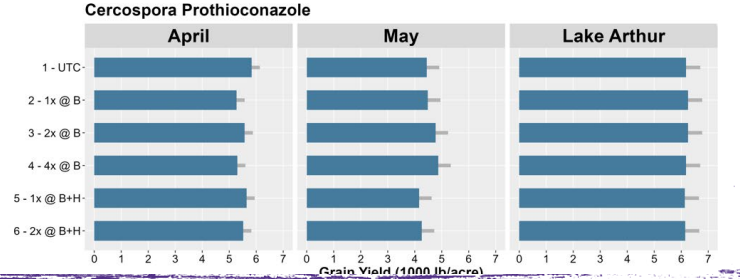
Cercospora Net-Blotch and Panicle Blight Fungicide Timing





"New" DMI fungicide (Prothioconazole)

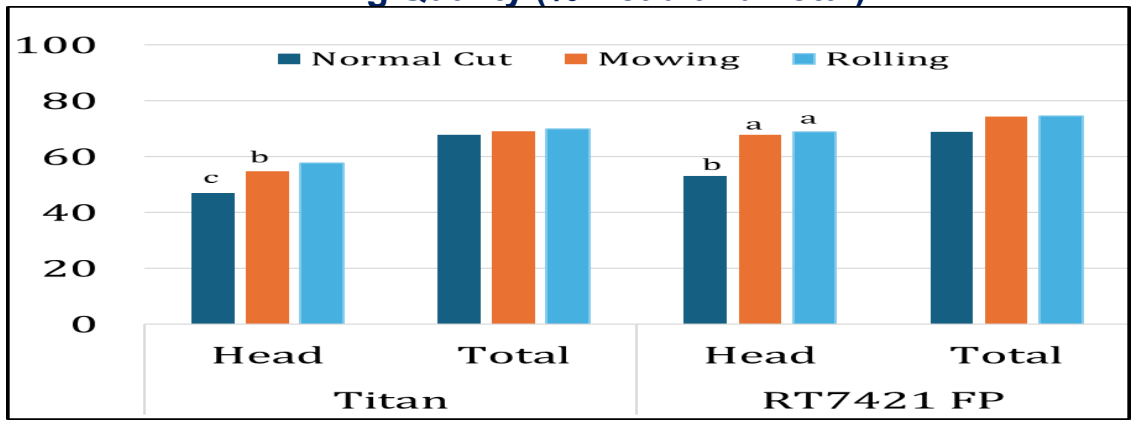




Agronomy Update

- **New Variety Agronomics Testing**
  - Support breeding programs
  - Agronomic packages
    - Optimal N rates
    - Optimal seeding rates
    - Variety Testing
- **Stubble management for ratoon crop**
- **On-farm climate-smart practices**
  - Water management (AWD)
  - Cover Crops
  - Greenhouse Gases
- **Arsenic uptake**
- **Border Row Effects in Small Plots**
- **Starter N Application**

Evaluation of the Effect of Stubble Management Practices on Milling Quality (% Head and Total)

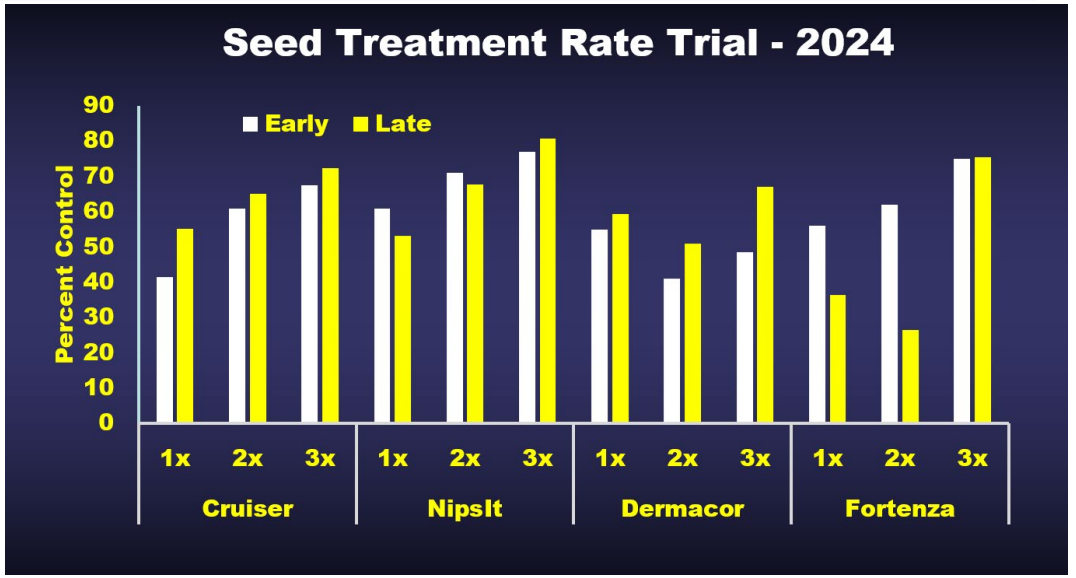


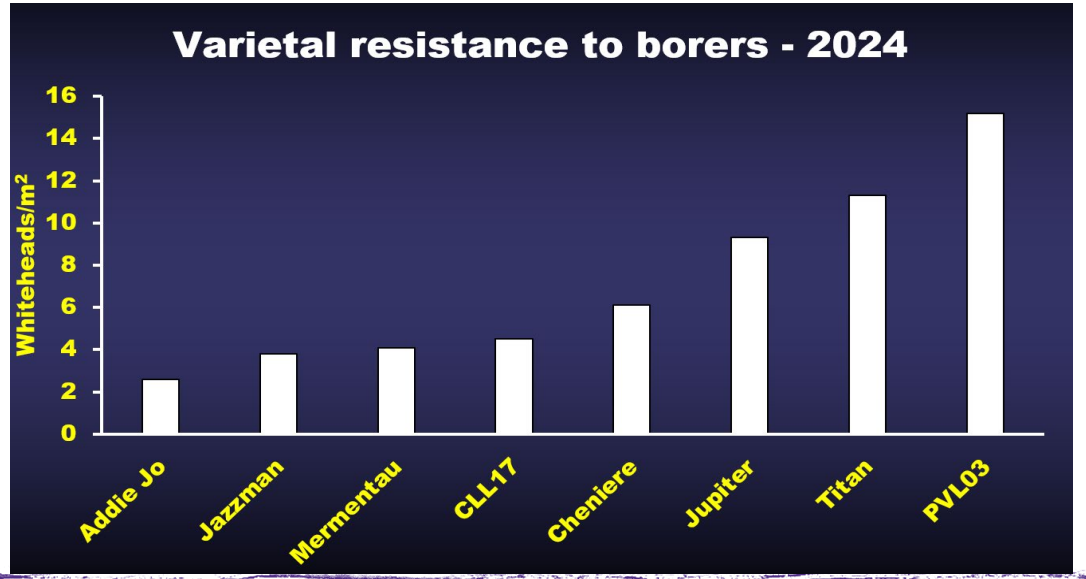
Evaluation of Starter N Sources and Time of Application on Yield of CLL19 in a Drill-Seeded, Delayed Flood Rice System

Tmt. No.	N Rate (lb N/A)	N Sources	Total N (lb N/A)	Application Timing	Yield (lb/A)	
T1	150	Urea	150	Pre-flood	9120	bc
T2	100/50	Urea/Urea	150	Pre-flood / PI	8277	c
T3	20/130	Urea/Urea	150	2 Leaf /Pre-flood	9825	ab
T4	20/130	AMS/Urea	150	2 Leaf /Pre-flood	9809	ab
T5	20/150	Urea/Urea	170	2 Leaf /Pre-flood	10168	a
T6	20/150	AMS/Urea	170	2 Leaf /Pre-flood	9665	ab
T7	20/100/50	Urea/Urea/Urea	170	2 Leaf /Pre-flood/PI	9586	ab
T8	20/100/50	AMS/Urea/Urea	170	2 Leaf /Pre-flood/PI	9464	ab

Entomology Update

- **Insecticidal seed treatments**
  - Inconsistent efficacy in 2022 – 2024
    - 80% RRW control from 2009 – 2021
    - <50% RRW control from 2022 – 2024
    - Complete failures with Stem Borers in 2024
  - Resistance concerns ?
  - Environmental factors ?
- **Foliar insecticides**
- **Insect resistant varieties**
- **Row rice pest management**
- **Invasive apple snails**

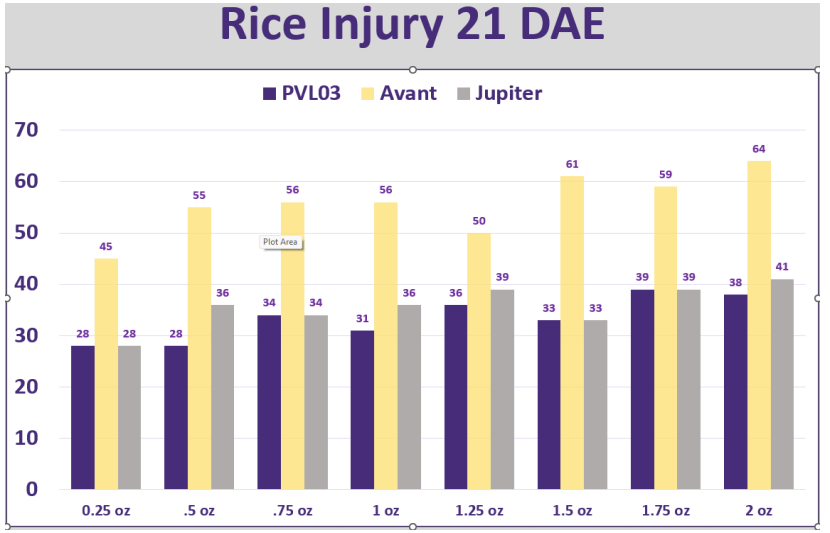


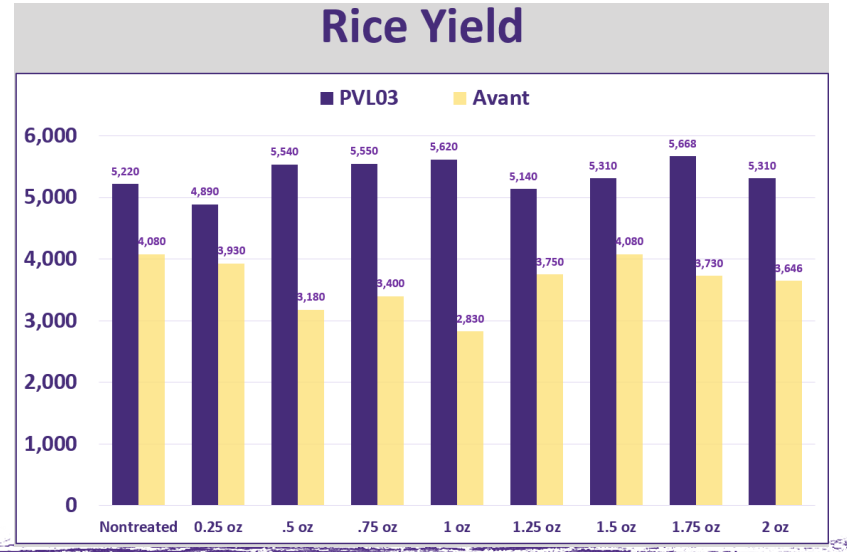


Weed Science Update

- **Evaluation of 4 experimental herbicides**
  - Tetflupyrolimet
  - Gowan ai
  - Roxy
  - New Rinde Formulation
- **Advanced Provisia rice lines tolerance**
- **Simulated overcast weather patterns and Provisia injury**
- **Simulated Newpath/Preface carryover**
- **Control of Fimbristylis – Pre and Post**
- **Brake Application Timings and Rates**
- **Burndown Programs Using Gambit**

Simulated Newpath Carryover





LSU AgCenter Hosting 2025 RTWG

- Educational Workshop
- Symposiums
- Scientific Papers/Posters

https://rtwg.org/

Registration Deadline:
January 17, 2025

Hiton New Orleans Riverside
New Orleans, LA
February 17 – 20, 2025

H. Rouse Caffey Rice Research Station Field Day

June 24, 2025

Questions?

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