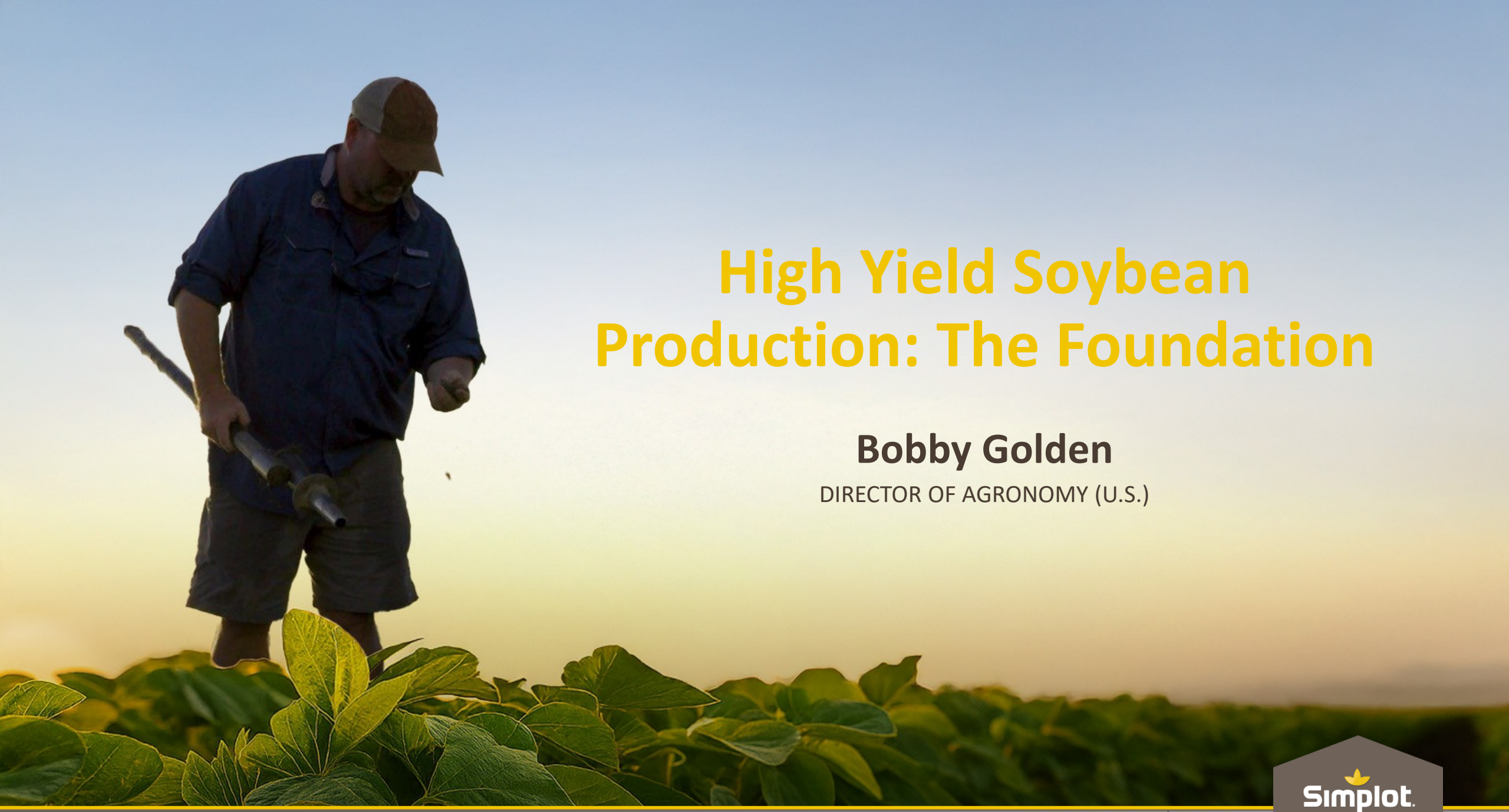


High Yield Soybean Production: The Foundation

Bobby Golden

DIRECTOR OF AGRONOMY (U.S.)

Background : Experiences, expertise

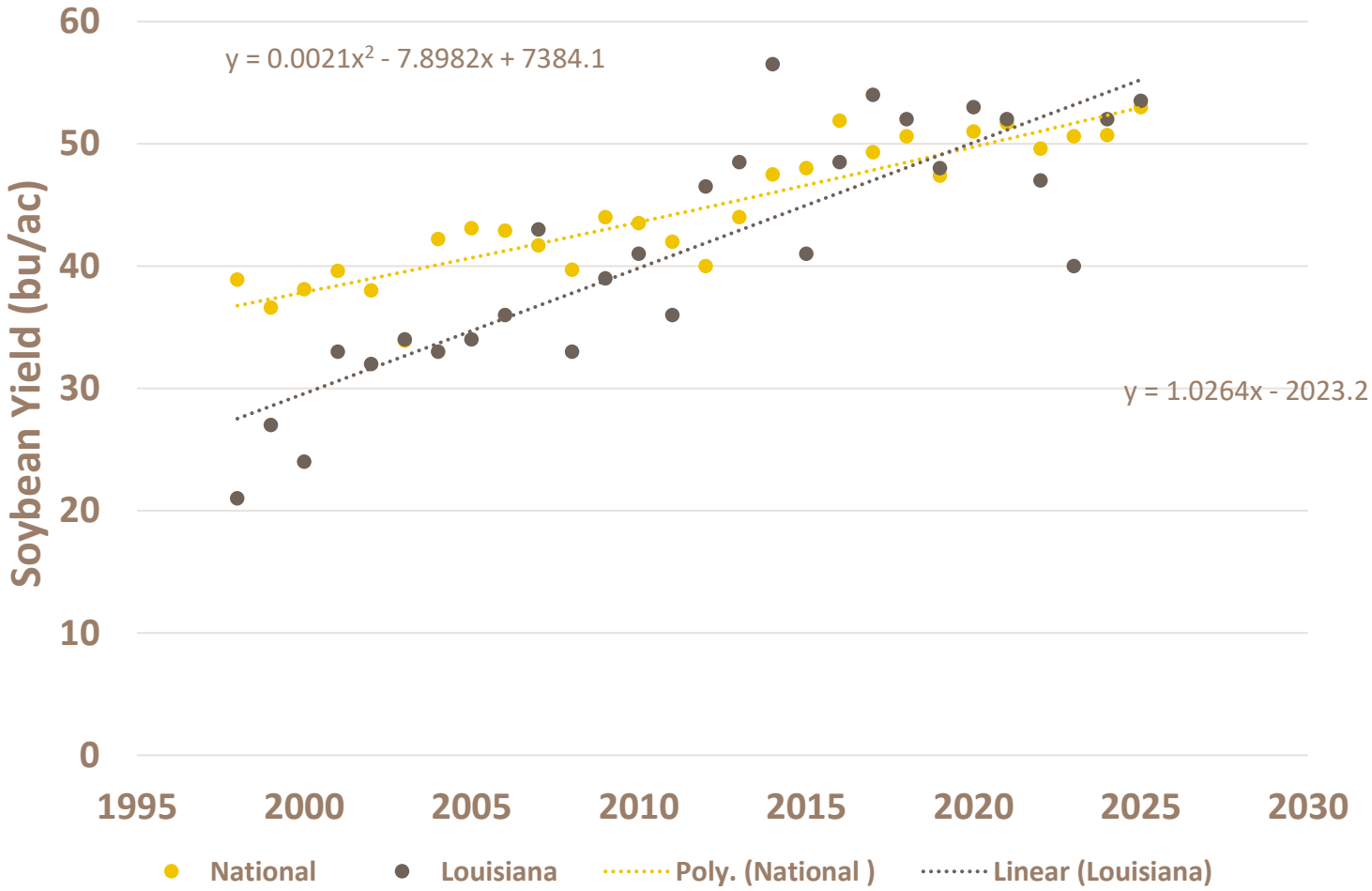
- **Who is Bobby Golden**
  - Native of Louisiana, raised in Arkansas, reside in Mississippi
  - Olivia, Abby Glenn, Hazel May
- **Career**
  - University of Arkansas
  - Louisiana State University
  - Mississippi State University
  - Simplot Grower Solutions

Current Agriculture Pressures: Economics

- Financial Strain
- Shrinking Margins
- Market Volatility
- Question:
  - How does Simplot Enhance Solutions in Tough Times?

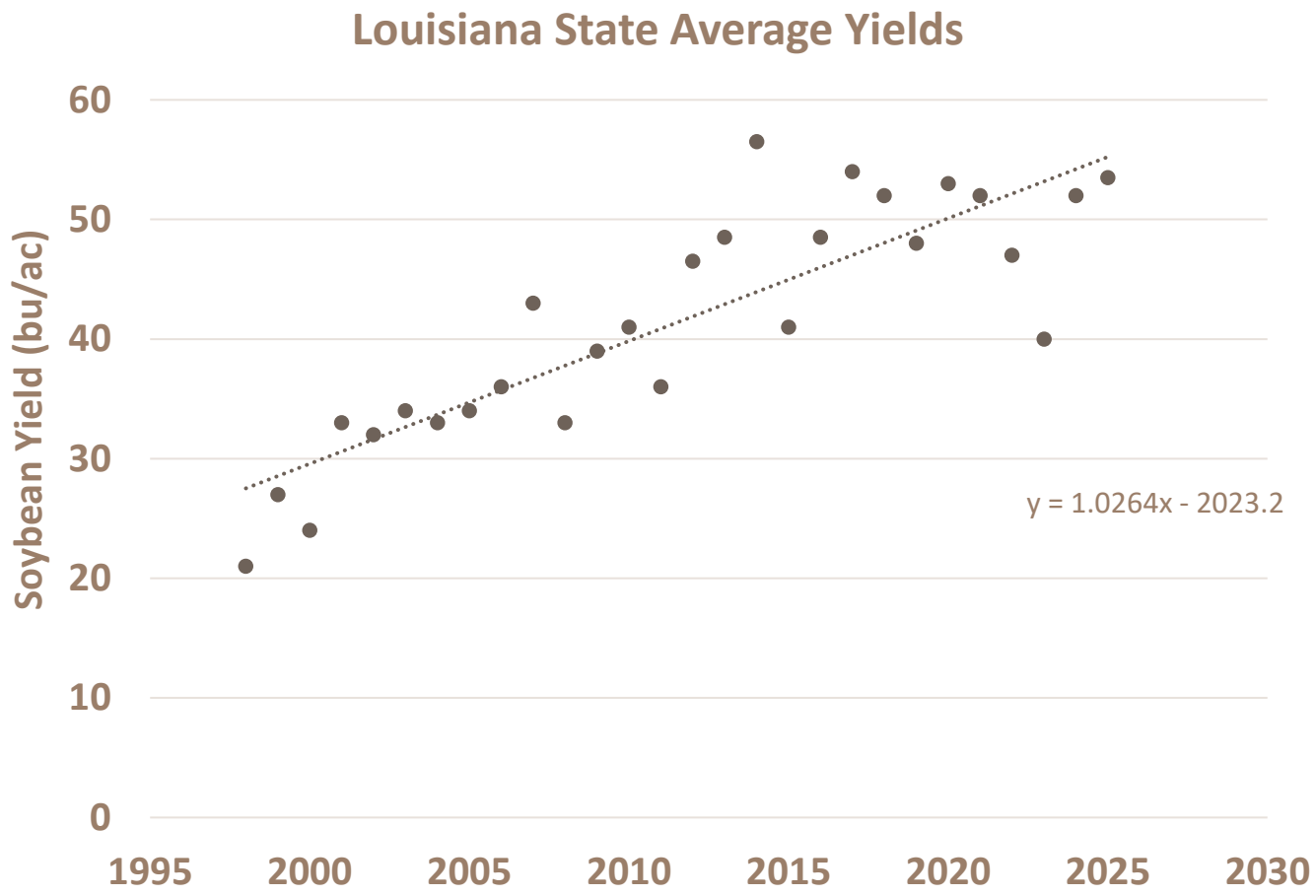
Louisiana vs Nation

- How do we compare?

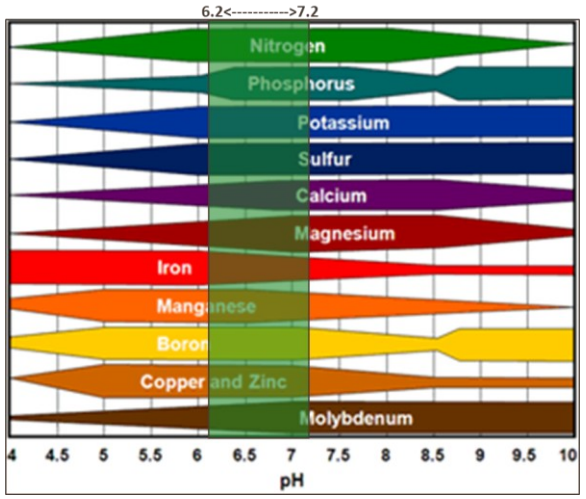


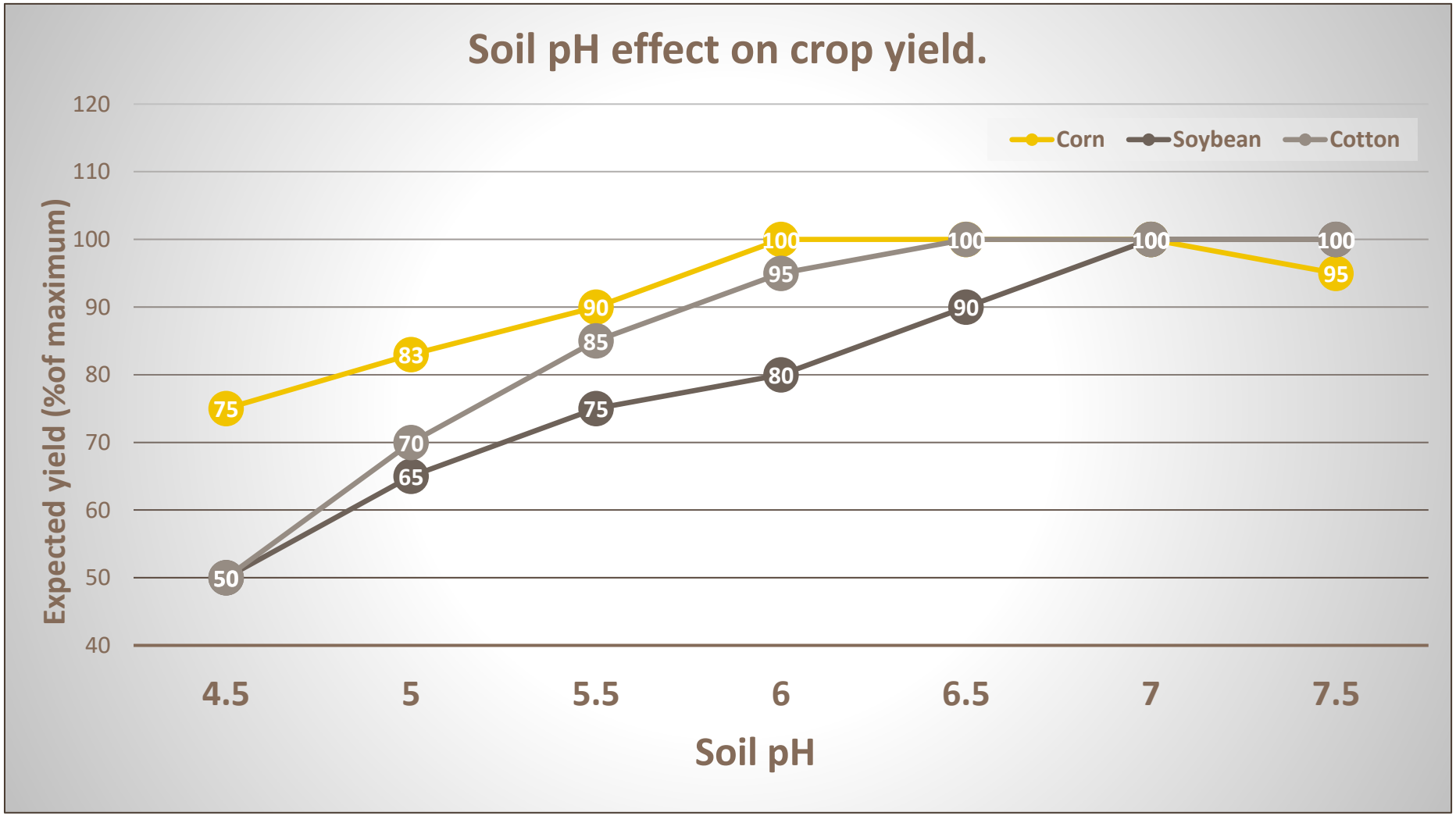
Louisiana Soybeans

- ESPS
- Trait Technology
- Rows
  - Drainage
  - Irrigation Management
- R4 Fungicides
- Harvest Aids
- P and K fertility
- What's next
  - Stay Vigilant
  - What's Missing



First Thing Forgotten





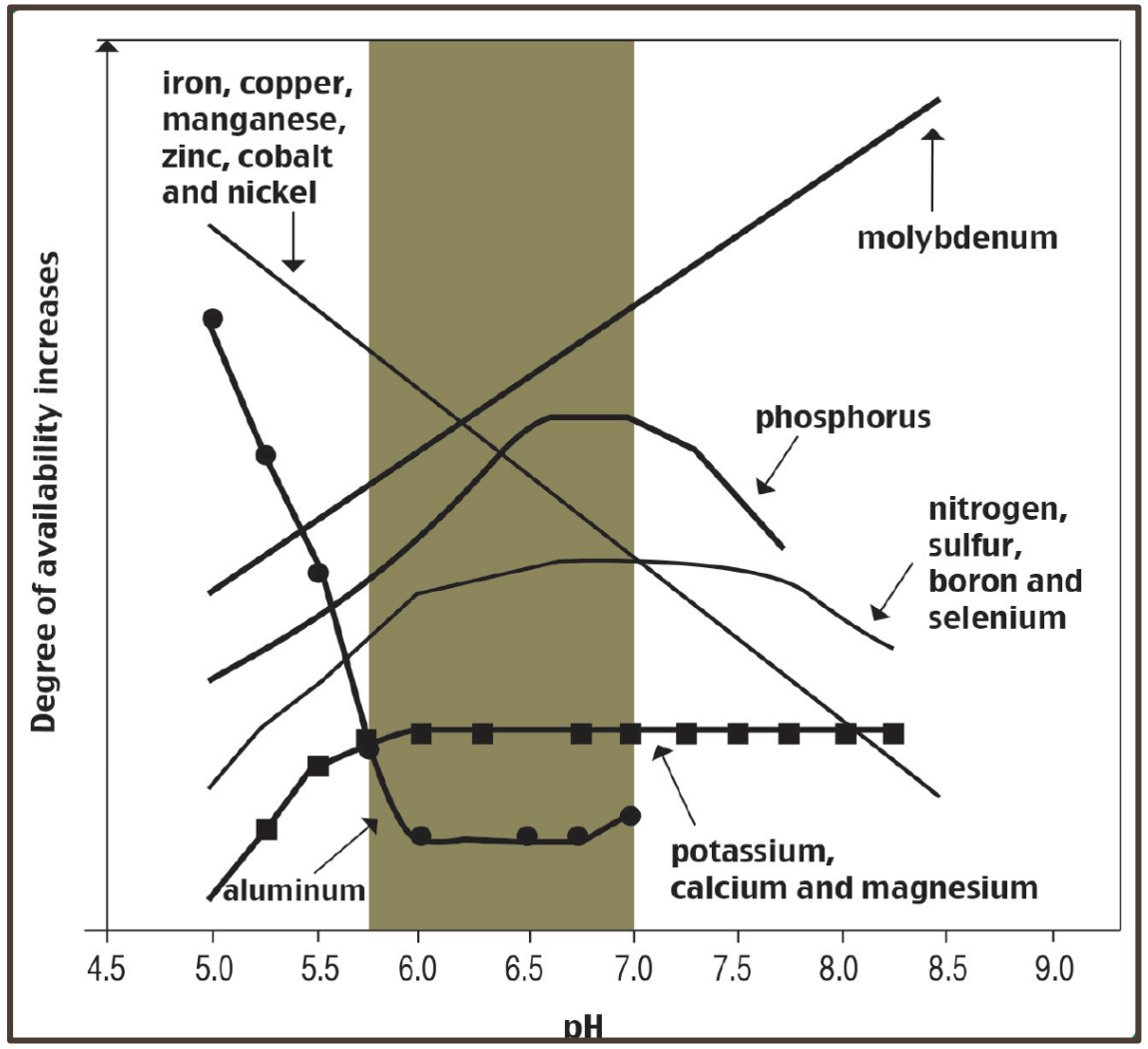
Cause of Soil Acidity Fluctuation

N Source	lb lime/lb N
Urea	4
UAN	4
AMS	7
Ammonium Phosphate	7

- Nitrification of Ammonium
- Removal of Bases
  - Crops
  - Leaching
- Precipitation
- Plant root exudates

pH importance for Nutrient Availability

- **Macronutrients**
  - P greatest at 6.2 to 7.2
  - K greatest above 6.0
- **Secondary Nutrients**
  - Ca and Mg similar to K
- **Micronutrients**
  - Zn, Mg, and Fe favor Ph < 7
  - N, S, and B stable near neutrality.



What's in a Bushel: Soybean

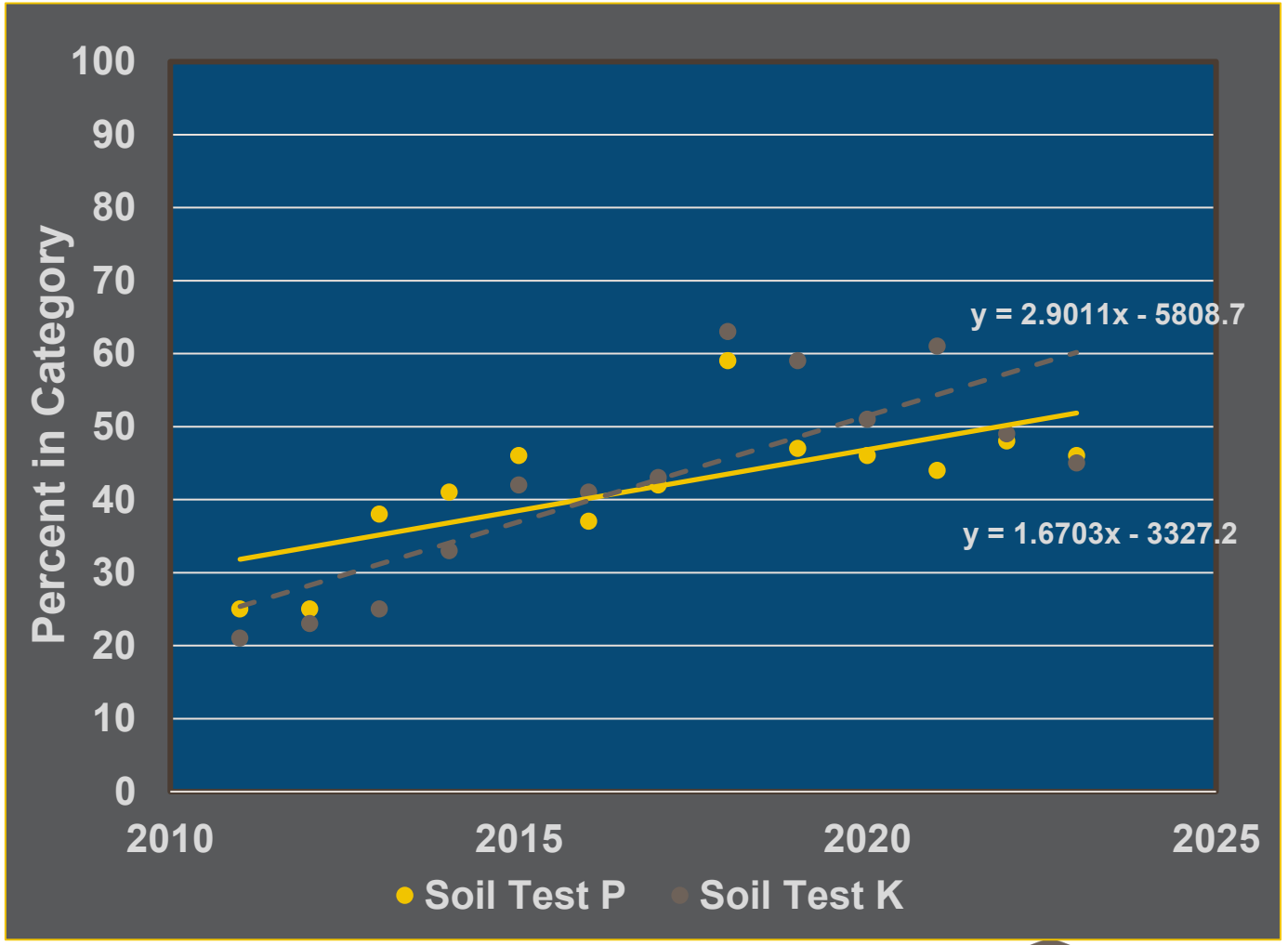
- 1 Bushel of Soybean Contains
  - 2.51 lb N
  - 0.52 lb P2O5
  - 1.88 lb K2O
  - 0.21 lb Mg
  - 0.18 lb S

Yield bu/a	N needed	N removed	P_2O_5 needed	P_2O_5 removed	K_2O needed	K_2O removed	Mg removed	S removed
40	160	100	34	21	188	76	8	7
50	200	125	43	26	235	94	11	9
60	239	151	51	32	282	113	13	11
80	318	201	67	42	376	150	17	15
100	400	251	85	52	470	188	21	18

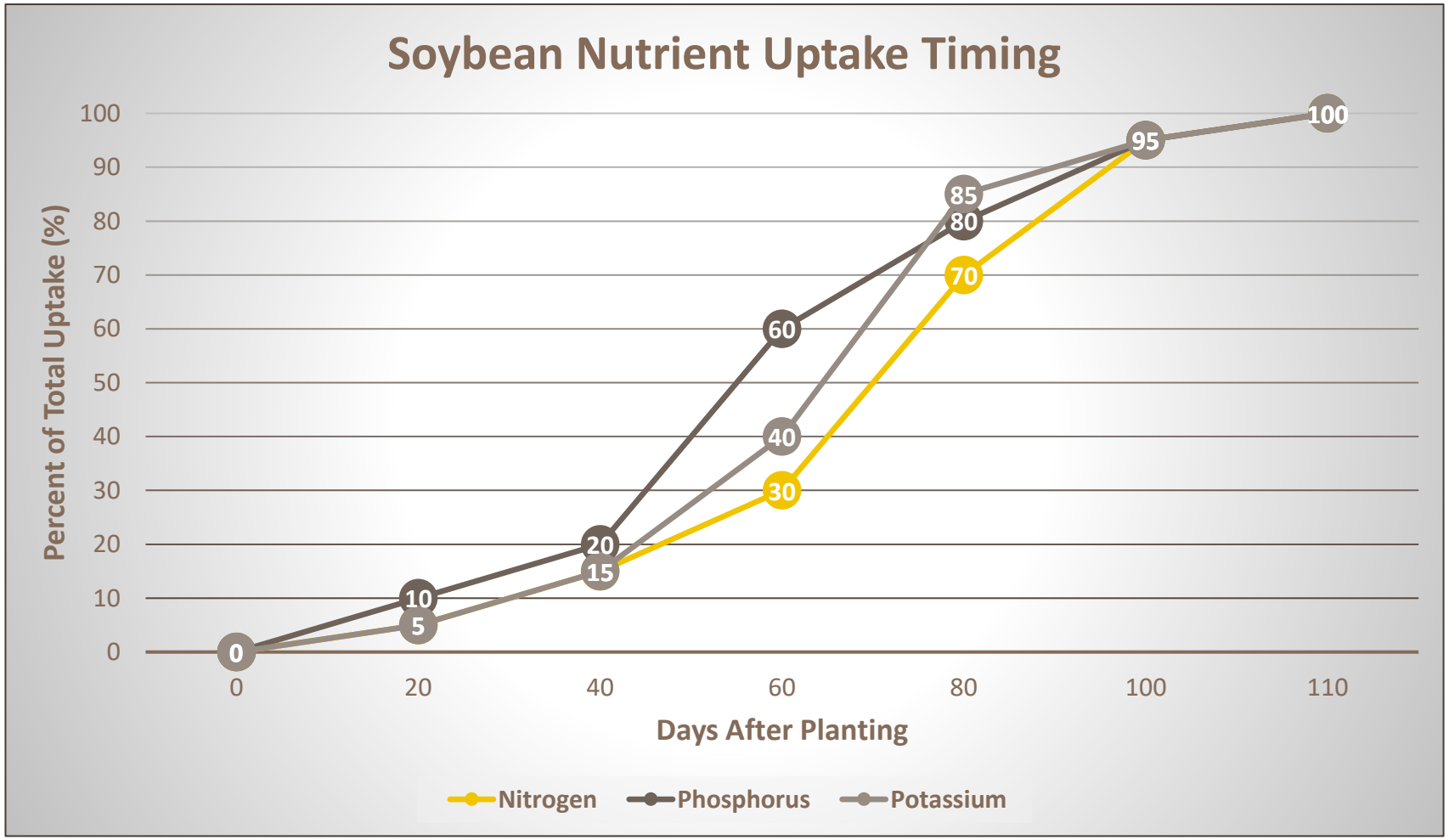
Soil Test P and K Trend in Region

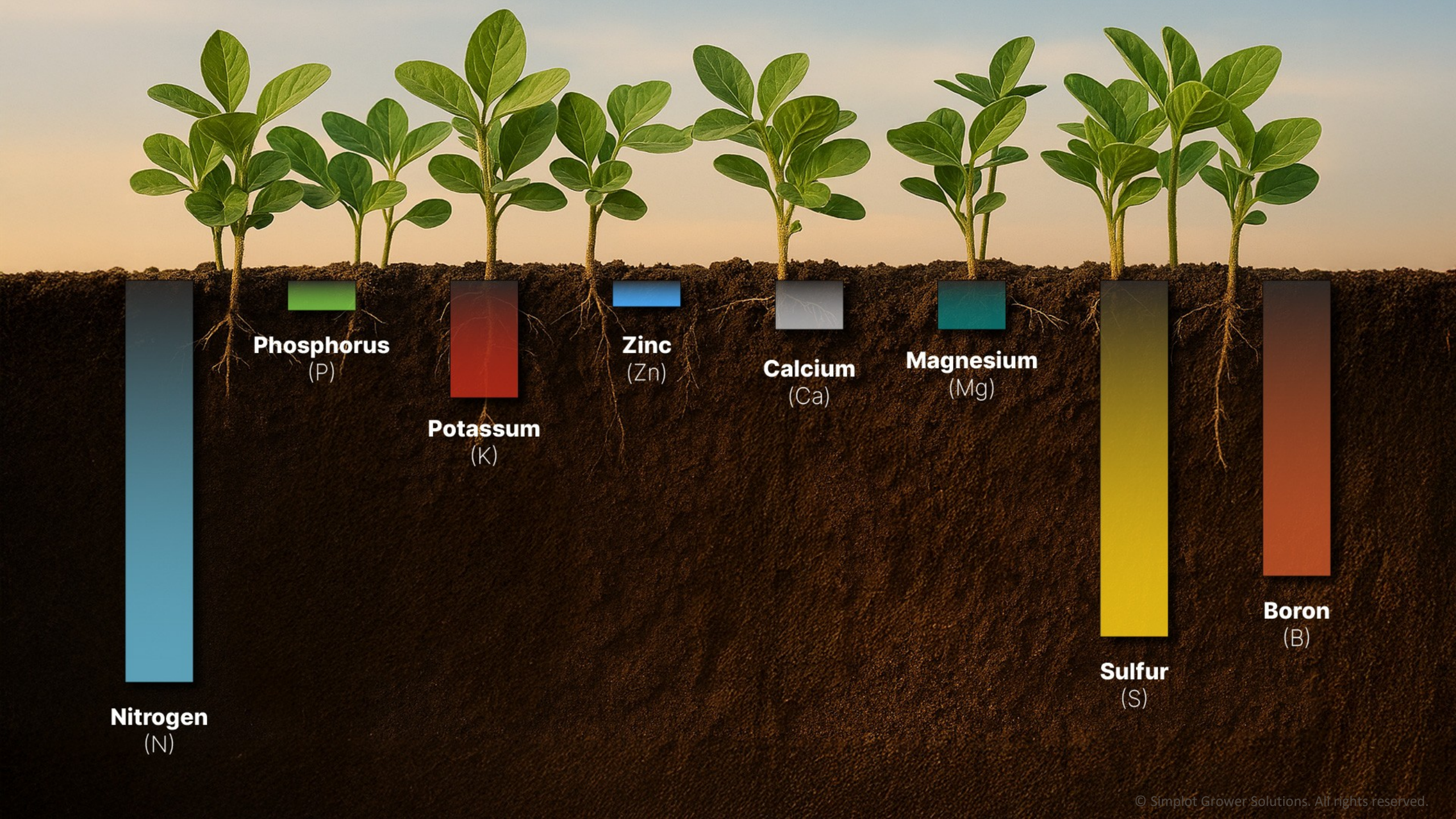
- **Rapidly increasing percentage of samples occurring in the low to very low range.**

- **Approximate Increases:**
  - **2.9 %/year below Medium for K**
  - **1.7 %/year below Medium for P**



When is it Needed?



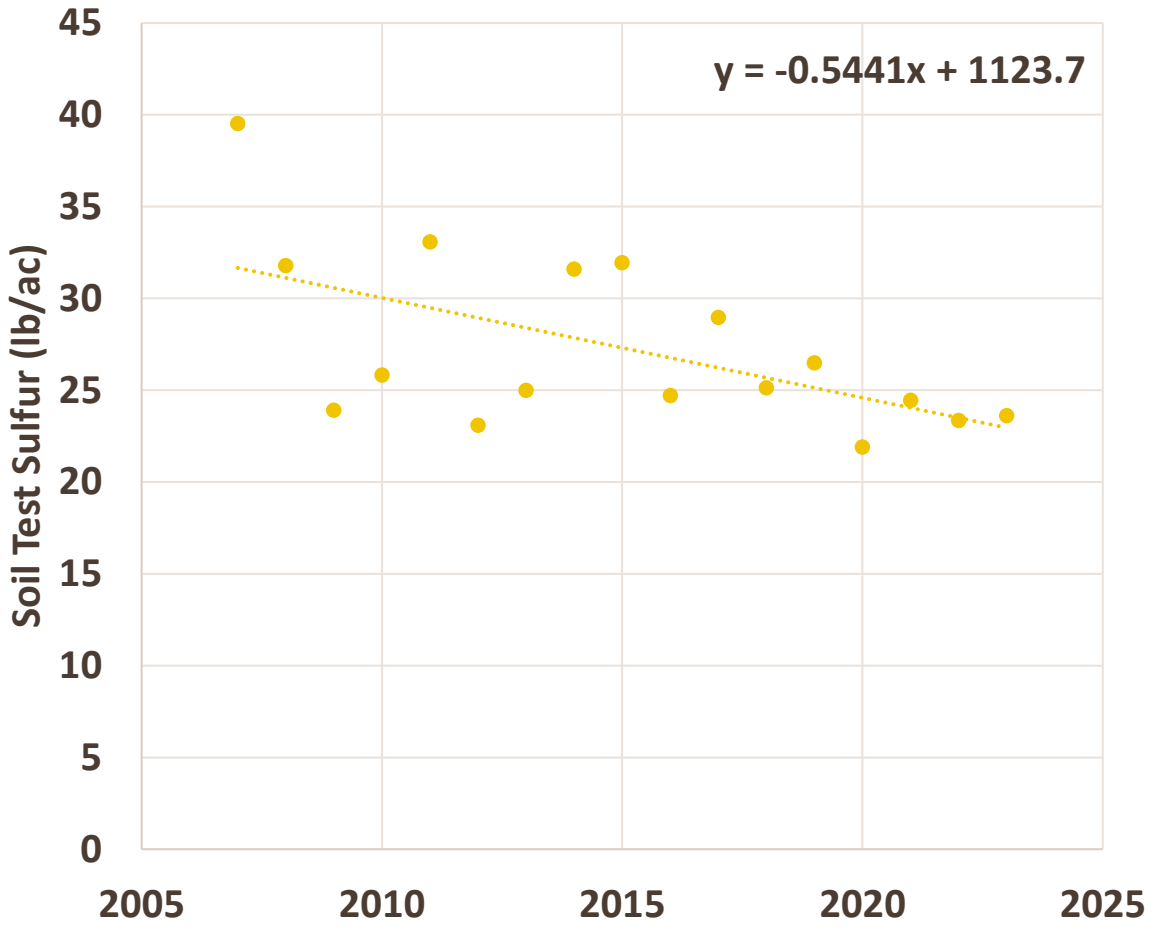


Sulfur in Soybean

- Sulfur is critical for early-season nodulation and late-season grain fill.
- 80-bushel soybeans require uptake of **>20 lb S** acre^{-1}.
- Yield responses have been observed to late season supplemental S applications ranging from **5 – 7** bu/a (McCoy, 2018).
- Yield response to S deficient situations can be great.

Soil Test Sulfur?

- Little soil test sulfur calibration data in the Midsouth
- Most S recommendations based on
  - Previous Crop
  - Soil Texture
  - History
- Soil test sulfur declined 0.5 lb/year



Sulfur needs by crop		
Crop	**# per unit**	**# Sulfur needed**
Corn	0.16 bu^{-1}	1.6 lb per 10 bu
Soybean	0.36 bu^{-1}	3.6 lb per 10 bu
Rice	0.22 cwt^{-1}	2.2 lb per 10 cwt
Cotton	6 $bale^{-1}$	6 lb per bale

Why are we depleting soils?

- **Why are we seeing increased deficiency incidence?**
  - **Removal v. application**
  - **Genetics**
  - **Glyphosate rates**
  - **Yield Potential**
  - **Irrigation Water**
  - **High pH**
  - **Calcium content**

What we Know

- Immobile in plant tissue.
- Absorbed as Mn^{2+}
- Crop needs: 0.5 – 1.0 lb a^{-1}
- Deficiency Prevention/Correction:
  - Can meet needs with foliar applications.
  - Foliar sources:
    - » Manganese Sulfate
      - Do not mix with glyphosate.
    - » Chelate Manganese
  - Recommend 1 – 2 qt/a of 5% foliar product.
    - » May take multiple applications.

CHE MAN 5%

INNVICTIS MICROMIX™

Simplot GROWER SOLUTIONS

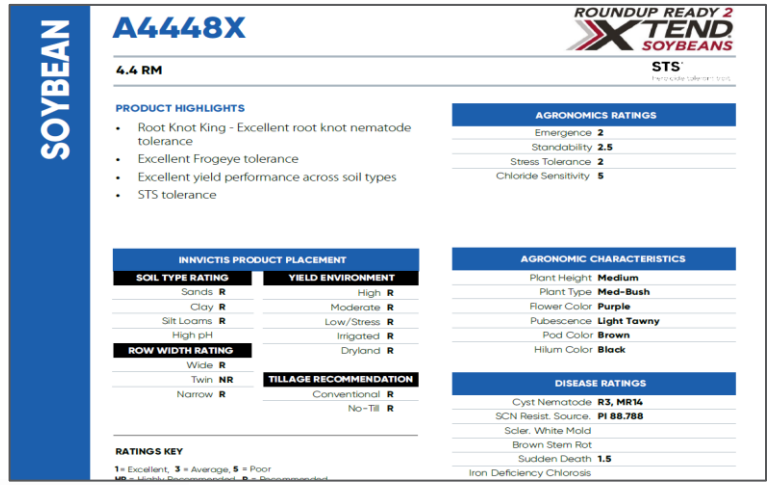
Don’t Forget Nematodes

- **Common Soybean Nematodes:**
  - **Soybean Cyst Nematode**
  - **Root Knot Nematode**

- **Decrease in stress tolerance (drought).**
- **Increase in disease incidence (Sudden Death Syndrome, Southern Blight).**

Nematodes

- Nematode Sampling to determine species and count.
- Choose tolerant soybean varieties **and** use chemical seed treatment options.
- Crop Rotation can help manage populations.
- Wash equipment when moving fields.



SOYBEAN

A4448X

ROUNDUP READY 2 XTEND SOYBEANS

4.4 RM

STS®

PRODUCT HIGHLIGHTS

- Root Knot King - Excellent root knot nematode tolerance
- Excellent Frogeye tolerance
- Excellent yield performance across soil types
- STS tolerance

AGRONOMICS RATINGS	
Emergence	2
Standability	2.5
Stress Tolerance	2
Chloride Sensitivity	5

INNVICTIS PRODUCT PLACEMENT	
SOIL TYPE RATING	**YIELD ENVIRONMENT**
Sands R	High R
Clay R	Moderate R
Silt Loams R	Low/Stress R
High pH	Irrigated R
ROW WIDTH RATING	Dryland R
Wide R	
Twin NR	**TILLAGE RECOMMENDATION**
Narrow R	Conventional R
	No-Till R

AGRONOMIC CHARACTERISTICS	
Plant Height	Medium
Plant Type	Med-Bush
Flower Color	Purple
Pubescence	Light Tawny
Pod Color	Brown
Hilum Color	Black

DISEASE RATINGS	
Cyst Nematode	R3, MR14
SCN Resist. Source.	PI 88.788
Scler. White Mold	
Brown Stem Rot	
Sudden Death	1.5
Iron Deficiency Chlorosis	

RATINGS KEY

1= Excellent, 3 = Average, 5 = Poor

NEMATICIDE AVEO EZ™

ILEVO® Seed Treatment

Poncho® Votivo® Seed Treatment

Averland® FC

INSECTICIDE/MITICIDE/NEMATICIDE

Avicta® Complete Beans

Simplot GROWER SOLUTIONS

Fungicides in Soybean

- Fungicide is a **proactive** not reactive application.
- Estimate Mississippi soybean producers lose **5 – 15%** yield due to disease from 2015 – 2021(MSPB, 2022).
- Data shows average **4%** increase in yield when a multiple-mode-of-action fungicide utilized in Mississippi.
- R4 application recommended.
- Increase in plant health leads to increased tolerance to stressors.

Fungicide in Soybean

- 2024_Revyfung_JMM(25)
  - Soybean Trial – Shaw, MS
  - Variety –
  - Treatments:
    1. No Fungicide.
    2. Revylok – 5.5 oz/ac
  - Application Timing: R4.
  - Application Volume: 5 GPA

Revylok™
Fungicide

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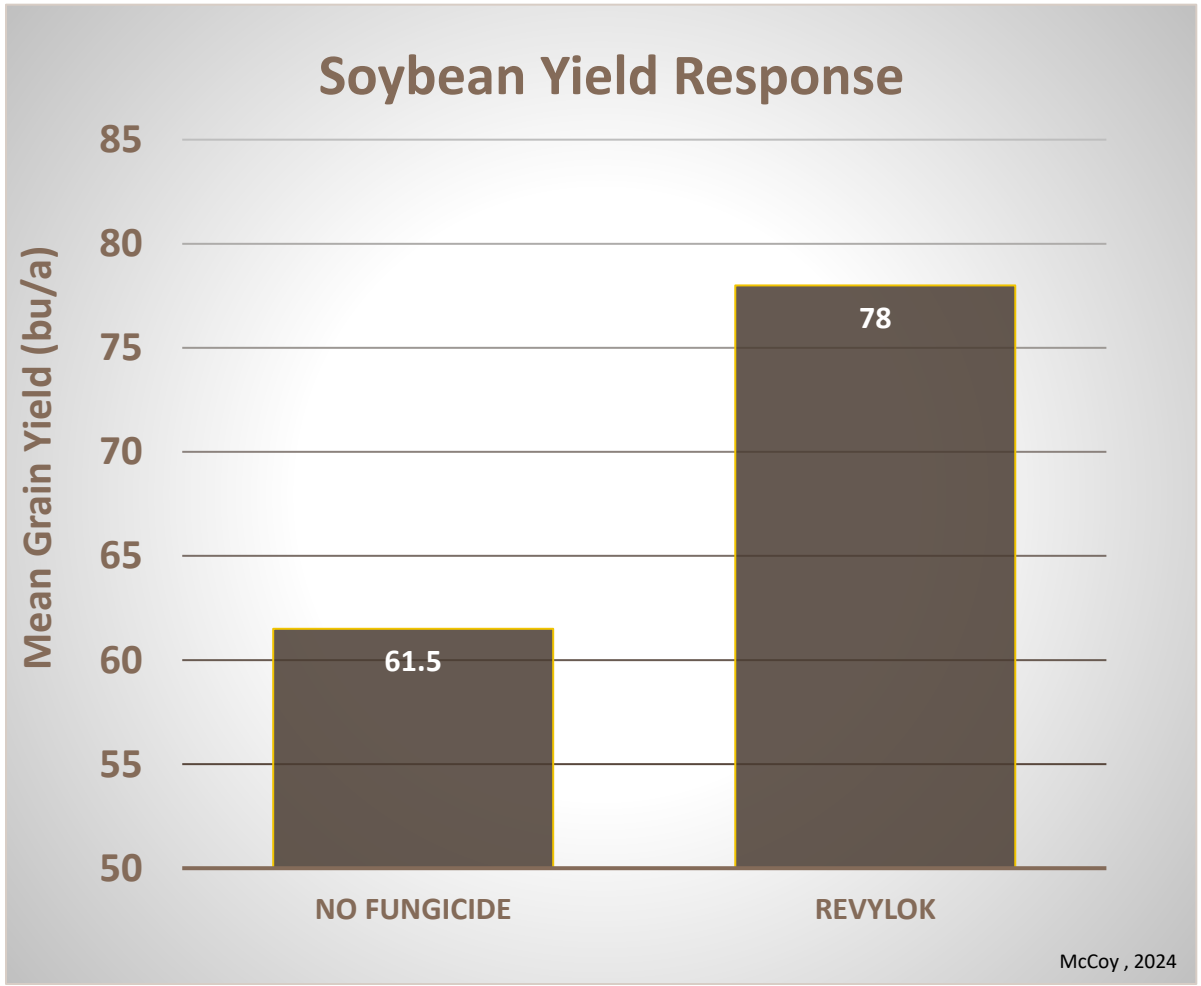
Fungicide

Fungicide in Soybean



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Revylok™
Fungicide

Thanks for your business!

Bobby Golden

Director of Agronomy

662-522-1653

Simplot®

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From Mine to Plate: One Simplot

Agribusiness **Land & Livestock** **Life Sciences** **Global Food**