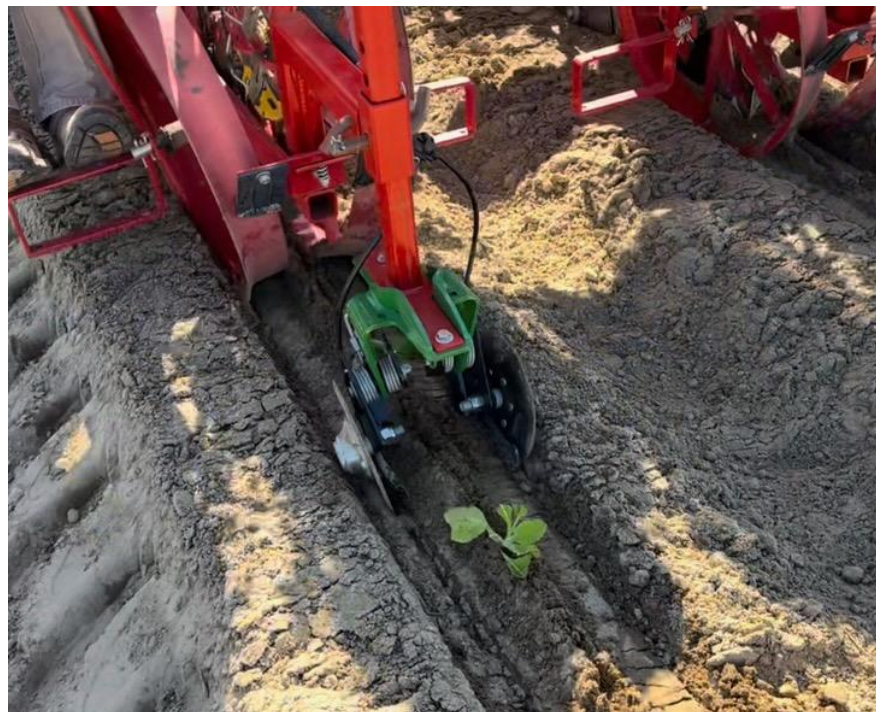


Tobacco Growth and Yield Response to Close Band Placement of Liquid Fertilizers At-Planting

Bryant Spivey, Norman Harrell, &
Matthew Vann
NC State University

2023 2x2x2 Placement of Starter Fertilizer

Materials and Methods



Materials & Methods

- 2x2x2 placement with transplanter – actual 3” wide
- Orifice in Bandit 360 applicator
- 2x2x2 34 GPA at 34 psi
- Transplant water 112 GPA at 15 psi
- RCBD, 4 replications

Penny Farms

- McGee's Crossroads (Fuquay and Wagram soil series)
 - pH 5.7, P-I 189, 6,500 plants per acre
 - 200 lbs. 13-0-14 1 DAT
 - 500 lbs. 6-6-18 15 DAT and 30 DAT
- Transplant Water
 - 7 oz Admire Pro
 - 4 oz Ridomil Gold
 - 7 oz Coragen

RJ Hinnant and Sons

- Buckhorn (Norfolk soil series)
 - pH 6.1, P-I 180, 6,500 plants per acre
 - 750 lbs. 6-6-18 8 DAT
 - 300 13-0-14 22 DAT
- Transplant Water
 - 5 oz. Imidacloprid

Treatments	
<u>Transplant water</u>	<u>2 x 2 x 2 band</u>
Water only	-
11-37-0, 1 qt	-
11-37-0, 1 qt	11-37-0 (10 lbs of N)
11-37-0, 1 qt	17-17-0 (10 lbs of N)
11-37-0, 1 qt	CN9 (10 lbs of N)
Water only	11-37-0 (10 lbs of N)
Water only	17-17-0 (10 lbs of N)
Water only	CN9 (10 lbs of N)

Starter Nutrients Per Acre

Treatment	Nitrogen	Phosphorus	Potassium
Water Only	0	0	0
1qt. 11-37-0 TPW	.33	1.11	0
11-37-0 + 11-37-0	0.33 + 10	1.11 + 33.7	0
11-37-0 + 17-17-0	0.33 + 10	1.11 + 10	0
11-37-0 + CN-9	0.33 + 10	1.11	0
11-37-0	10	33.7	0
17-17-0	10	10	0
CN-9	10	0	0

Materials and Methods

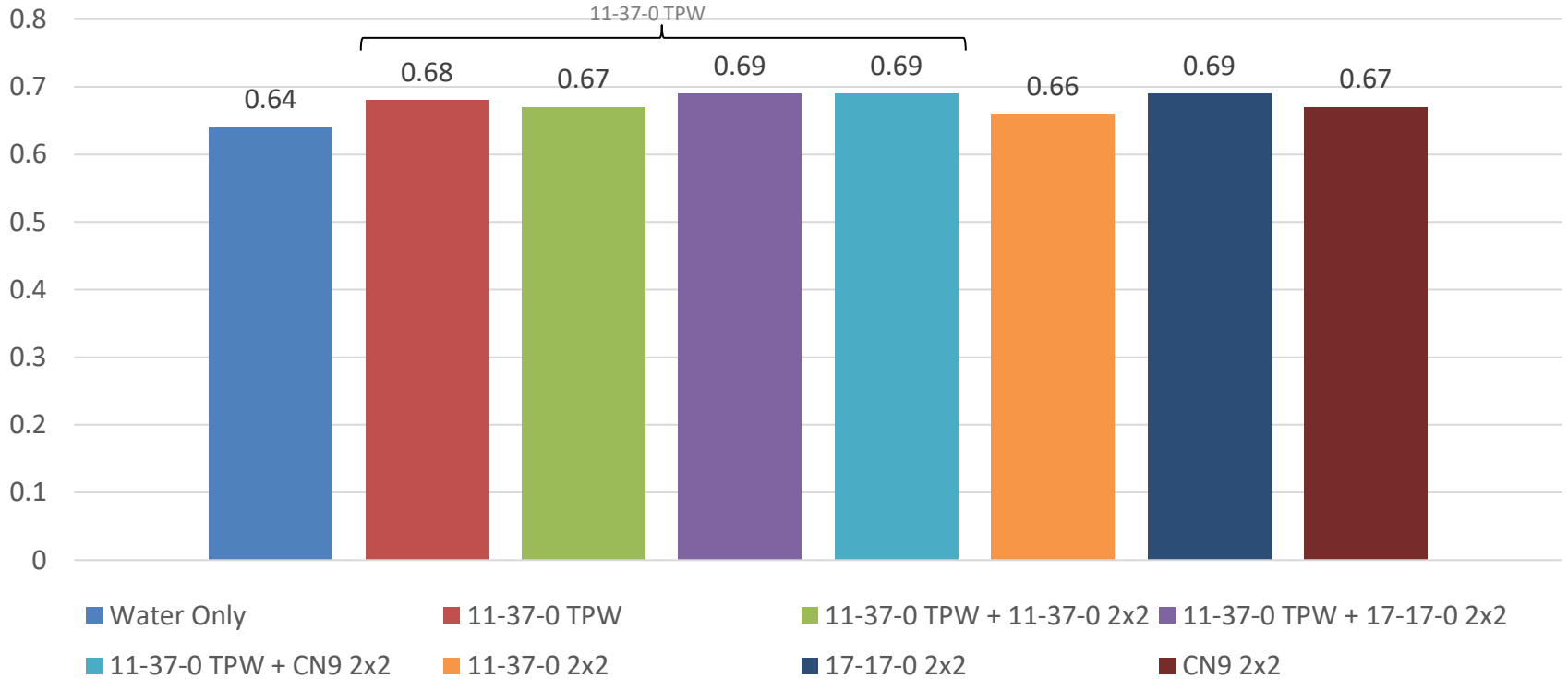
- Stand Counts 14 DAP
- Measured Normalized Difference Vegetation Index (NDVI) at 14, 18, 30 DAP
 - Trimble Greenseeker
- Green weight yields by stalk position
- Disease data late-season

10 Consecutive plants in 2 rows



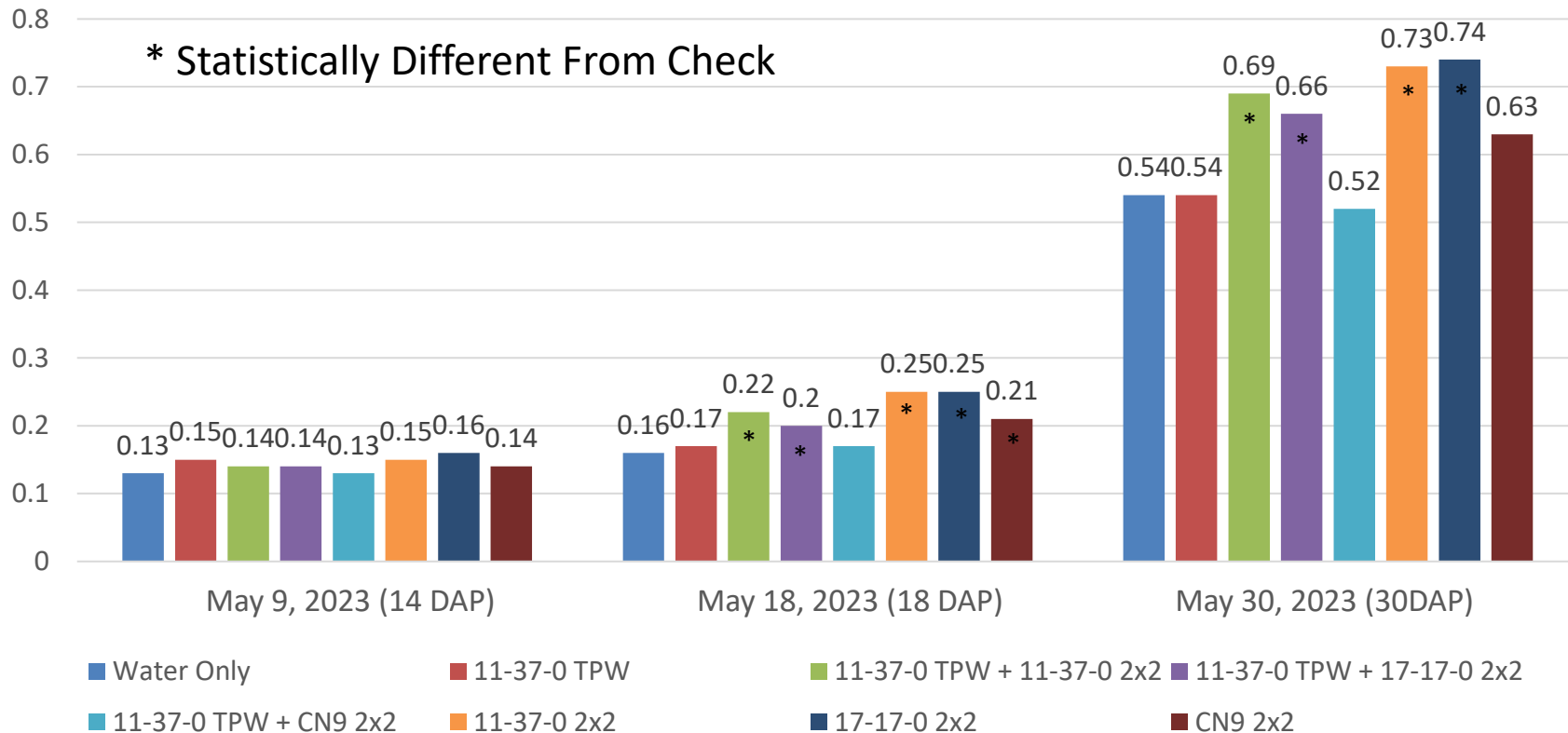
Wilson County NDVI

May 18, 2023 (14 DAP)



Johnston County NDVI

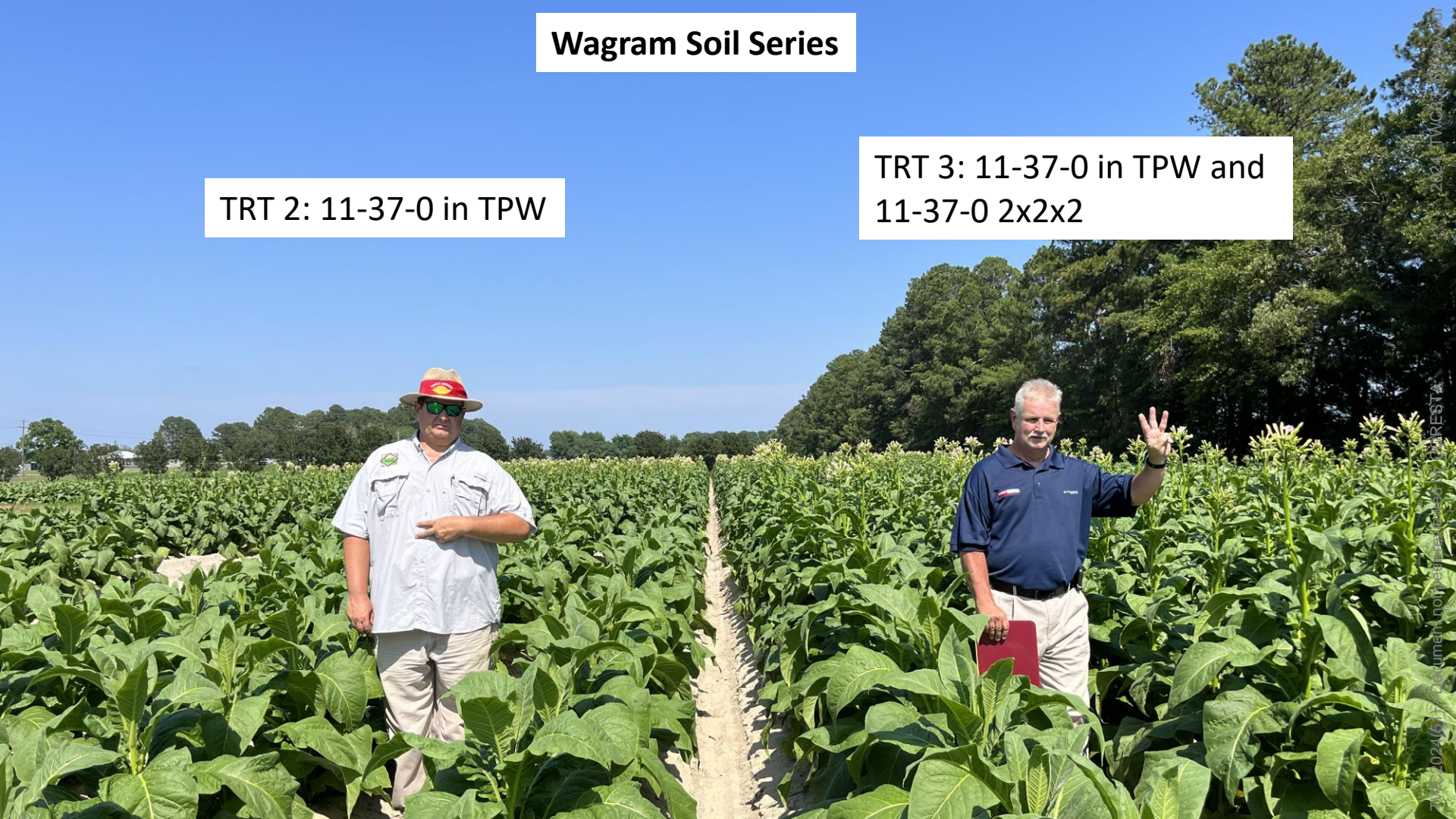
* Statistically Different From Check



Wagram Soil Series

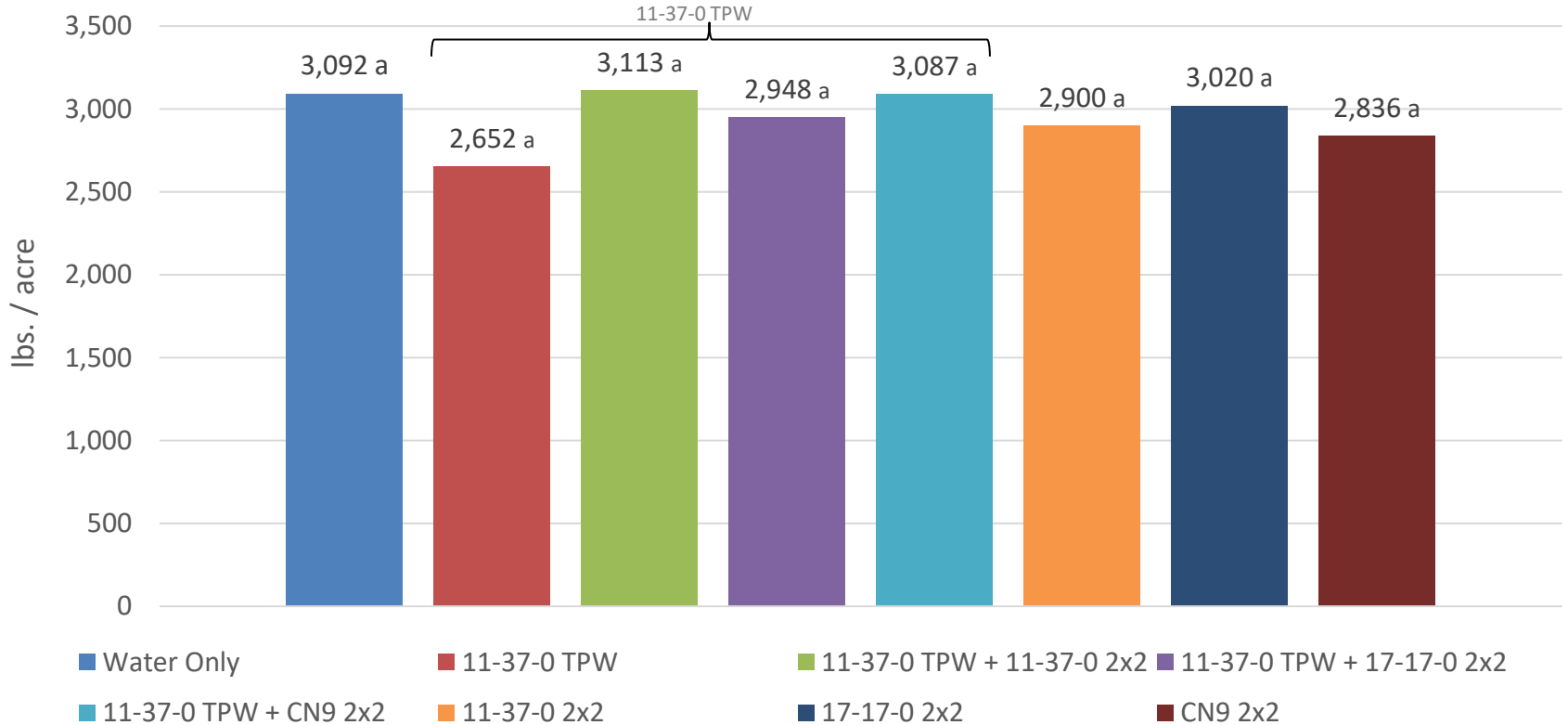
TRT 2: 11-37-0 in TPW

TRT 3: 11-37-0 in TPW and
11-37-0 2x2x2

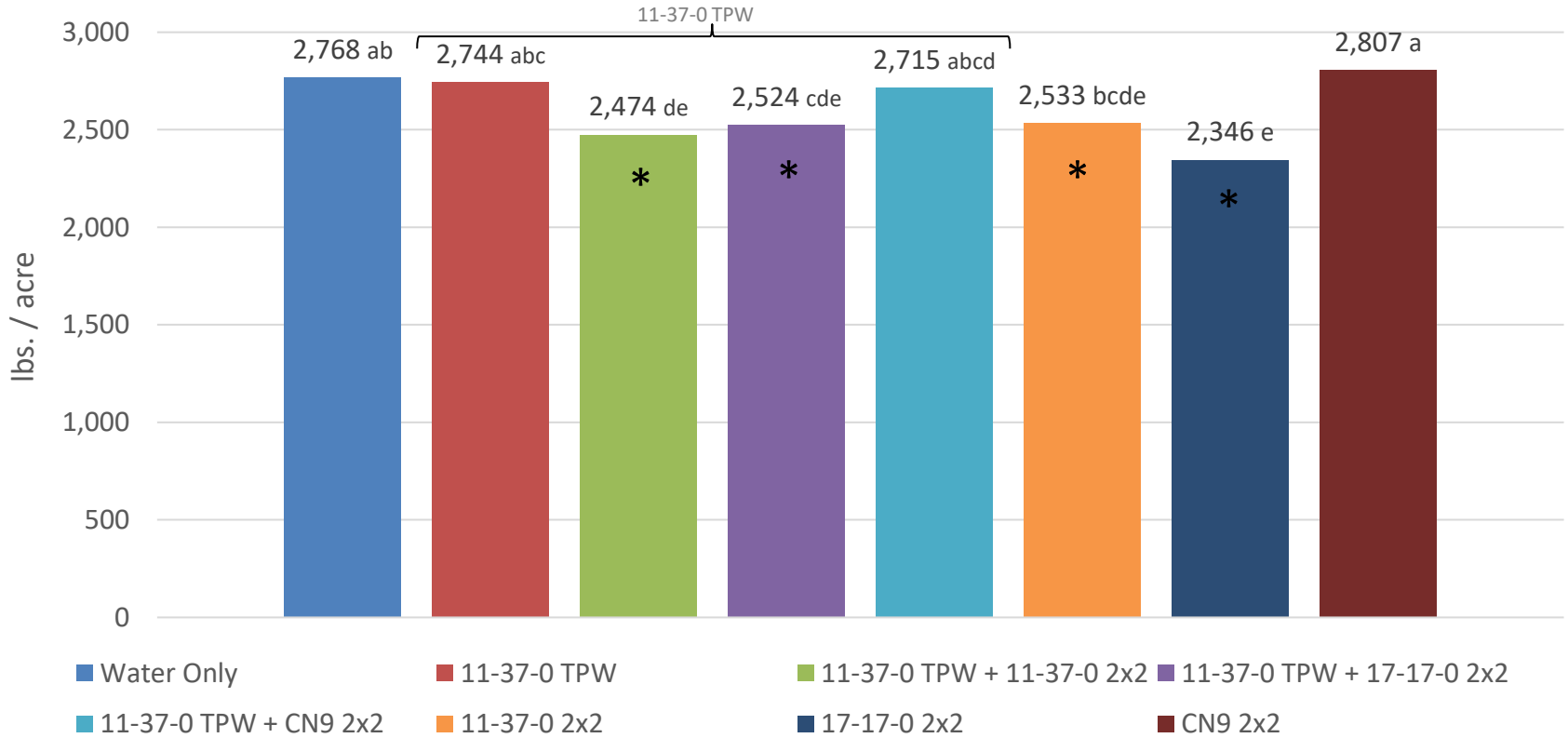




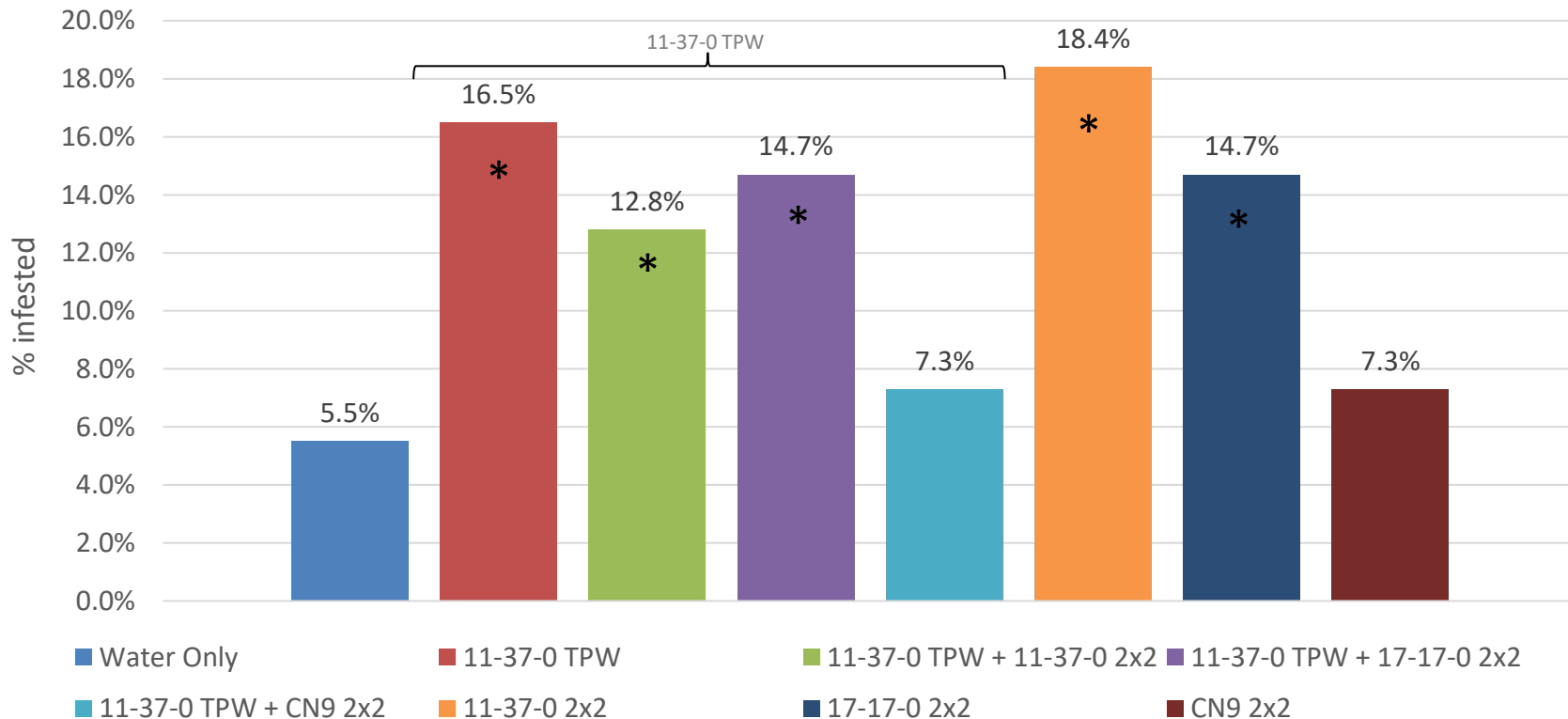
Wilson County Yield



Johnston County Yield



Johnston County Fusarium % Disease



Conclusions

- Close band placement of fertilizers with both N&P will boost early growth in some environments
- If 40 lbs. P is applied close to planting additional starter provided no additional benefit
- Results will vary by location, management, and other environmental factors
- Additional early P may lead to increases in soil-borne diseases
- Starter fertilizers in 2x2x2 did not improve yield

Conclusions

- Transplant water additives come with risk
- Be cautious with addition of fertilizers or pesticides to the transplant water
- Use practices proven through research
- Reminder: transplant water research should mimic grower application practices

Acknowledgements

- Penny Farms, Angier, NC
- RJ Hinnant & Sons, Sims, NC
- Yara
- Nutrien
- NCSU Tobacco Agronomy Team

Questions?