



# **Nematode Update for Cotton**

**Charles Overstreet  
Extension Nematologist**



# Problems observed in 2015

- ❖ Both reniform and southern root-knot nematodes still widespread
- ❖ Corn rotation seems to be helpful against reniform but less so with root-knot
- ❖ Fall populations at Northeast Research station highest ever observed





**Reniform nematode**



**Root-knot nematode**





**Left**

**Untreated cotton in  
southern root-knot  
and reniform field.**

**RK at harvest 1280**

**RN at harvest 30,080**

**Right**

**Telone treated cotton  
in southern root-knot  
and reniform field.**

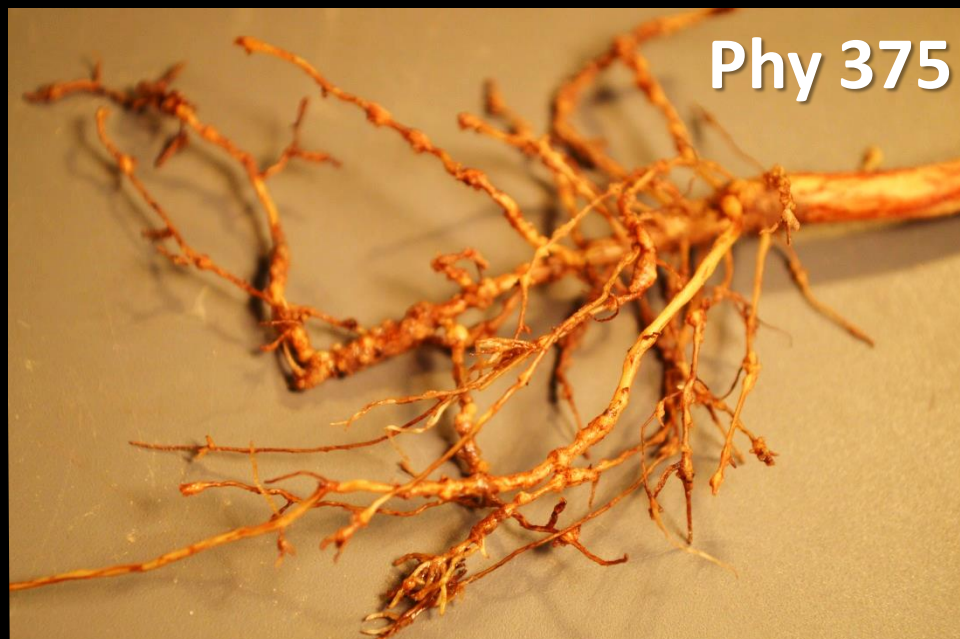
**RK at harvest 2080**

**RN at harvest 3520**

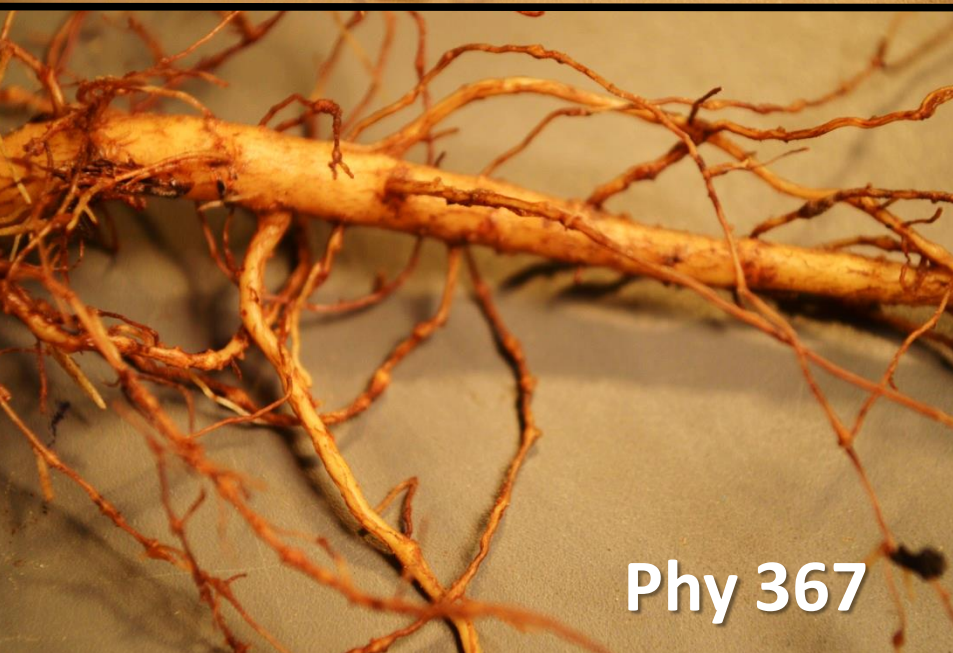




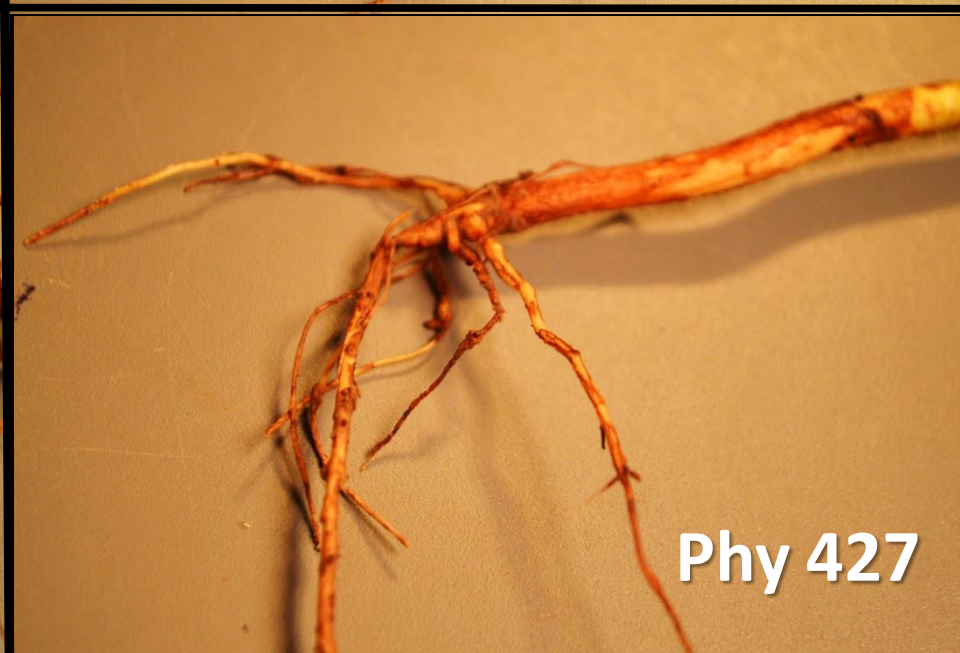
**Phy 499**



**Phy 375**

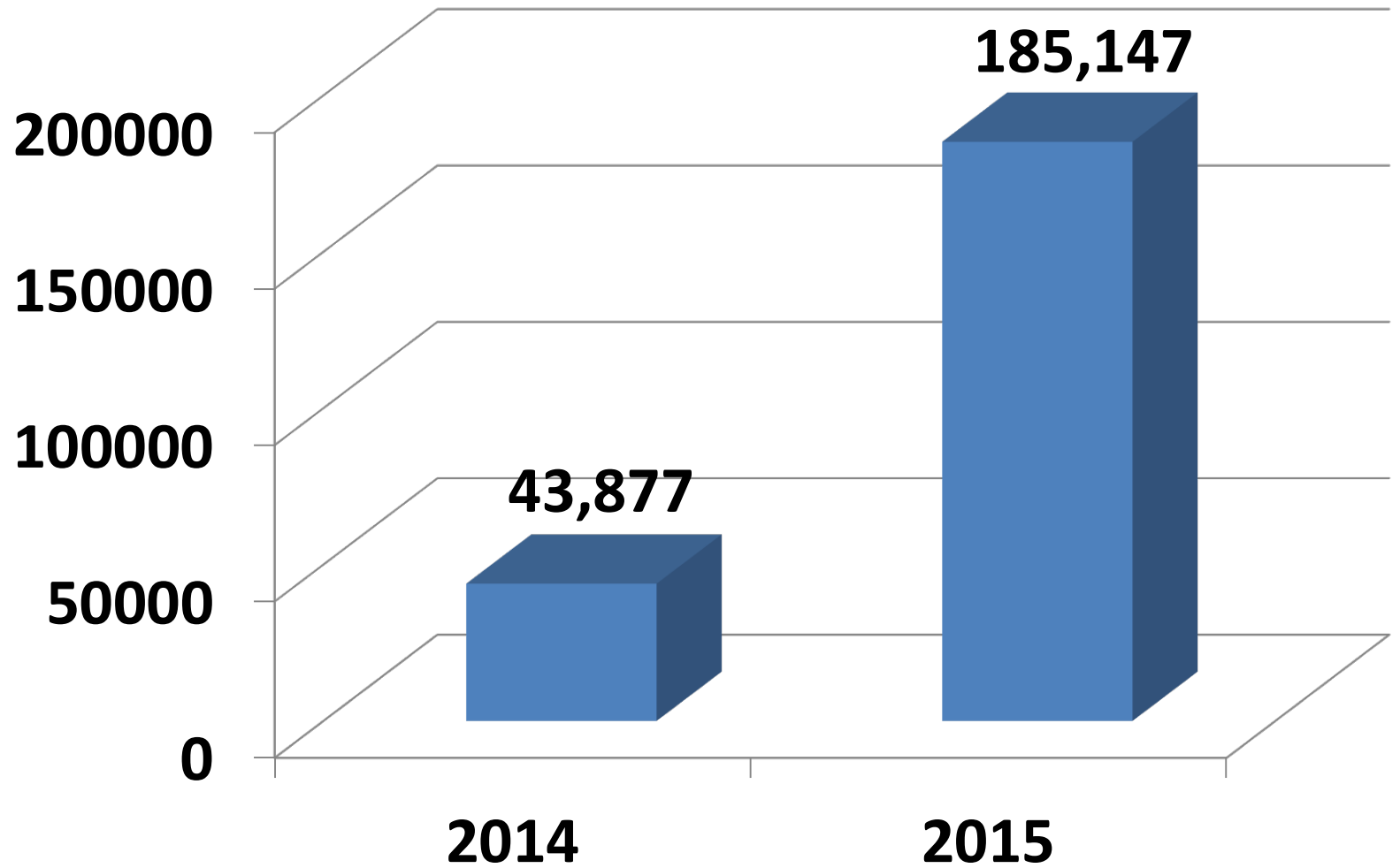


**Phy 367**

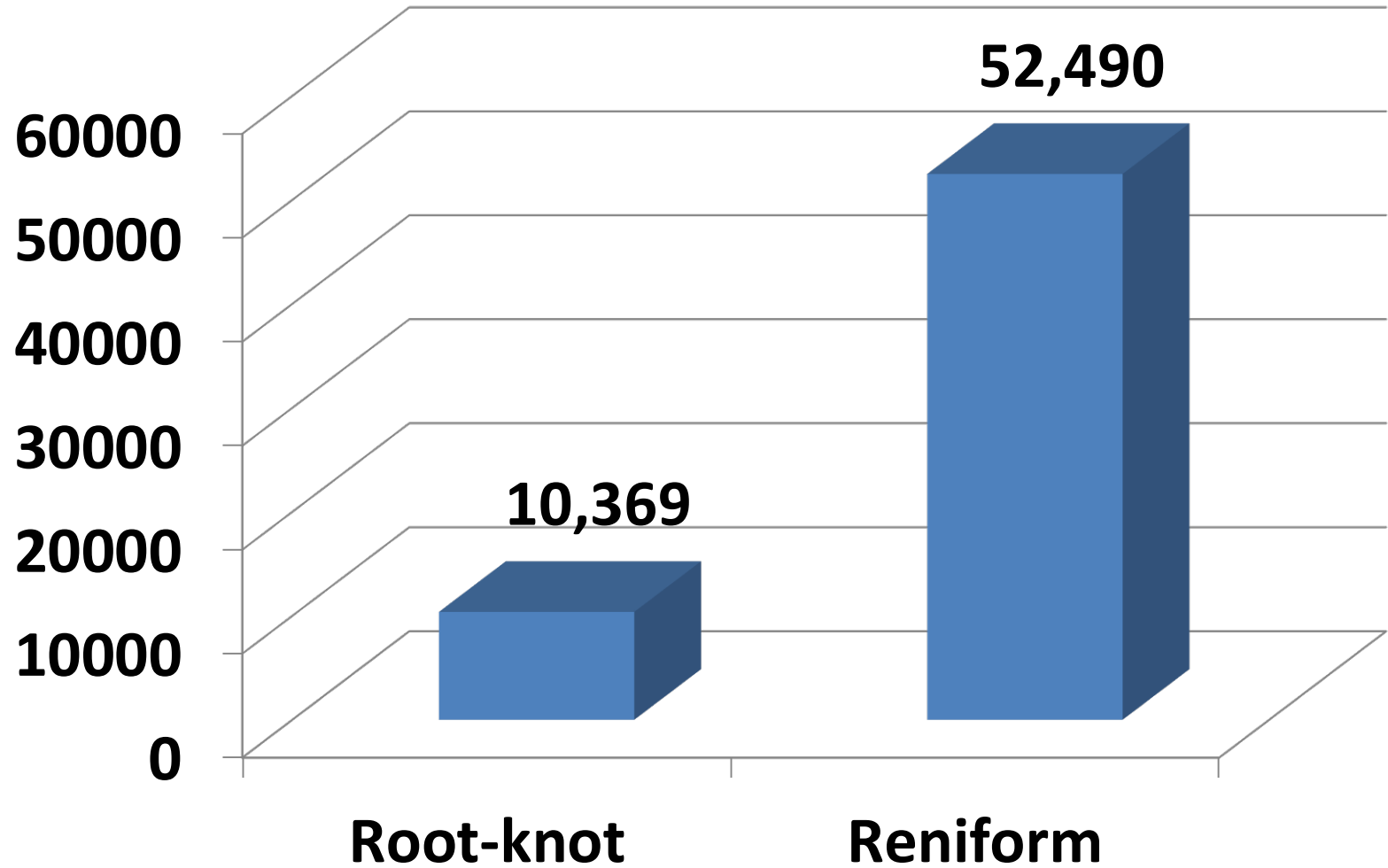


**Phy 427**

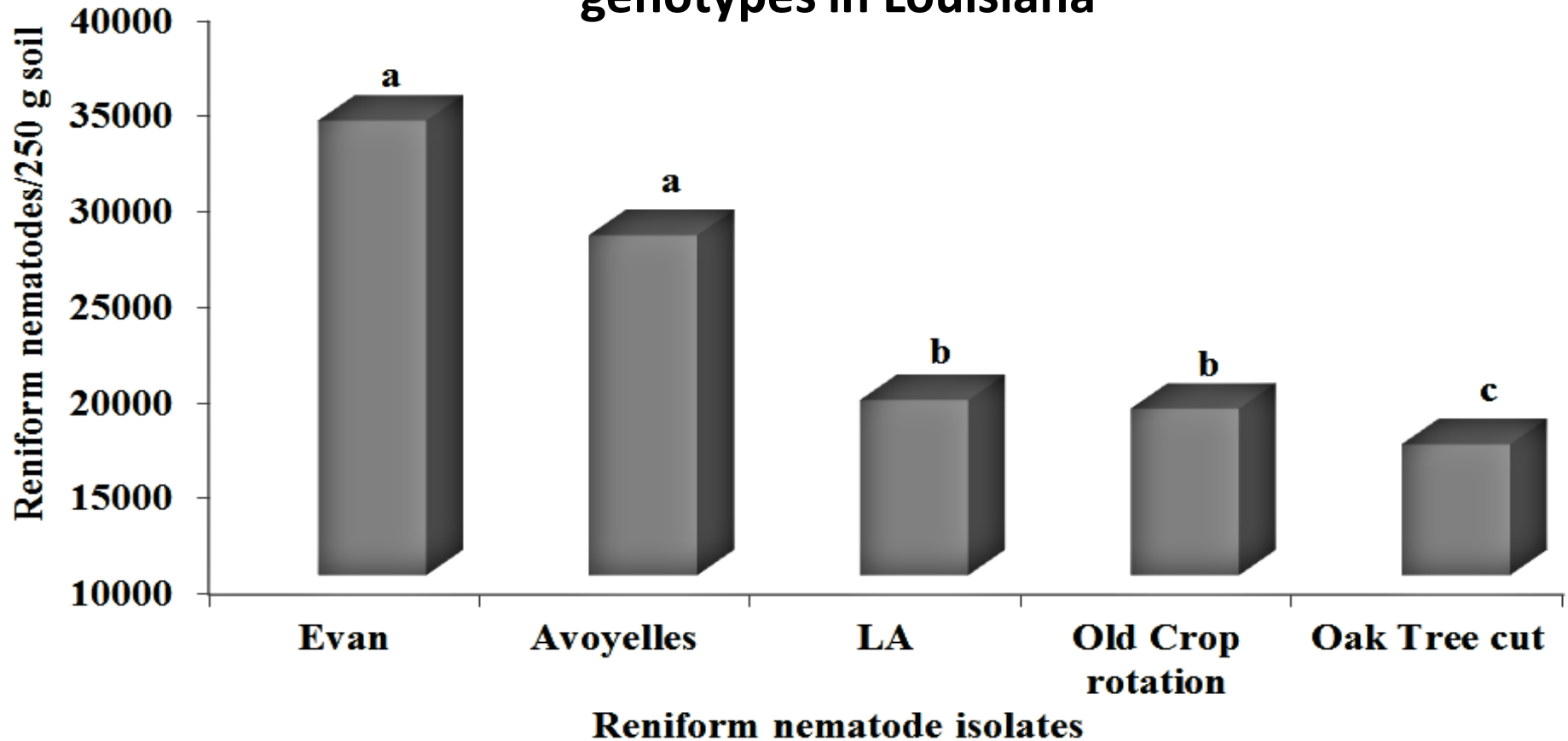
# Average reniform population at harvest across a 48 plot cotton trial in 2014 and repeated in 2015



# Average reniform population and root-knot at harvest across a 80 plot cotton trial in 2015



## Variability of five reniform isolates across six cotton genotypes in Louisiana

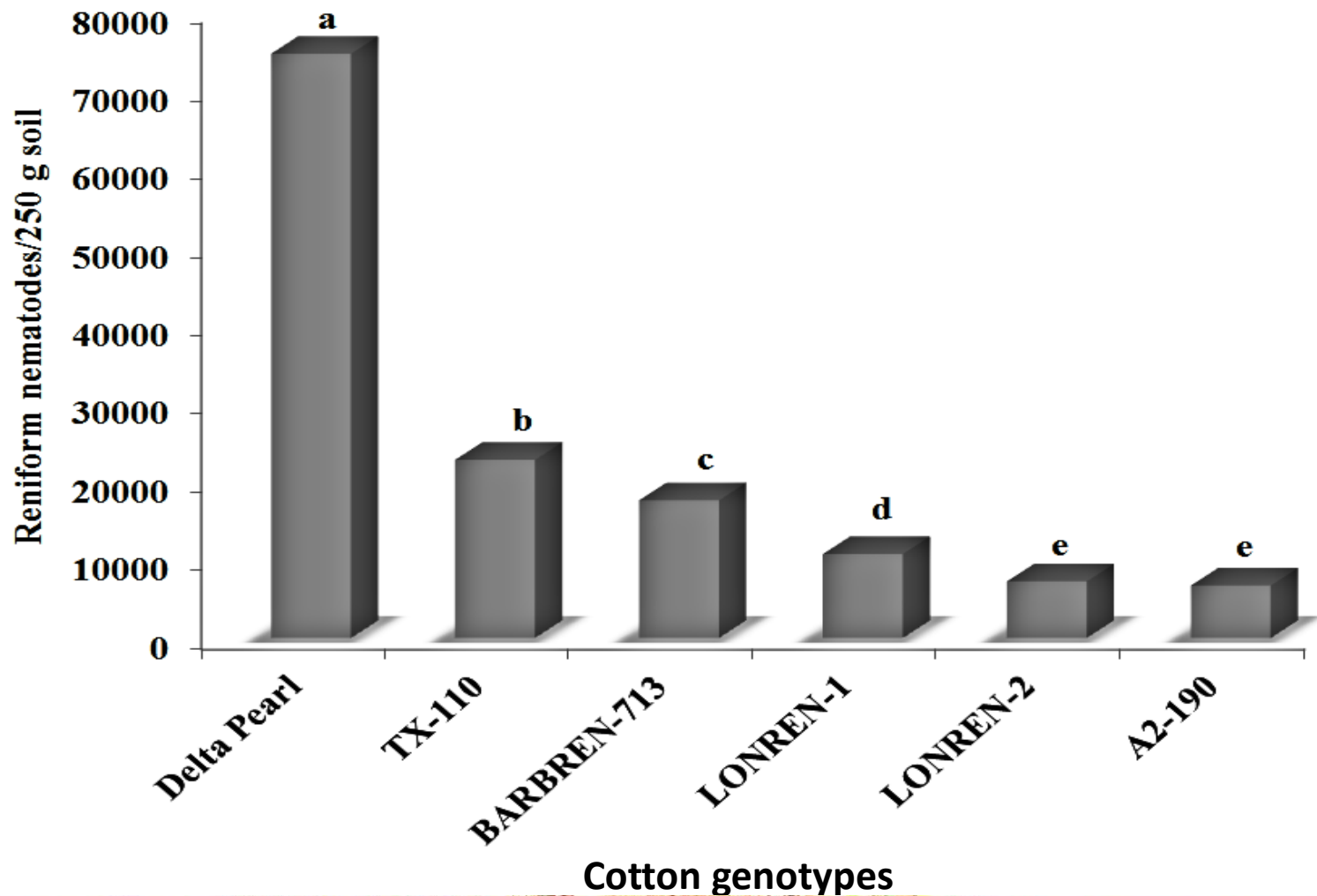


Bhandari, B., G. O. Myers, M. O. Indest, and C. Overstreet. 2015. Response of five resistant cotton genotypes to isolates of *Rotylenchulus reniformis* collected from reniform infested fields in Louisiana. *Nematropica* 45:252-262.





# Variability of six cotton genotypes across five reniform isolates in Louisiana



# Root-knot resistant varieties in silt loam soils in variety trials during 2015

Variety	Dean L	Macon <sup>1</sup>	St. Jo <sup>1</sup>	St. Jo <sup>2</sup>	Macon <sup>2</sup>	Avg
Phytogen 487	1260	1096	1307	1561	1170	1279
Phytogen 427	1409	1206	1227	1283	1392	1303
STN 4946	1287	1174	964	1796	1460	1336
DP 1558	1208	1271	1229	1501	1322	1306
DP 1454 NR B2RF	-	-	-	-	-	-



# Nematicides available for 2016 in cotton

## Seed treatments

- Avicta Complete Cotton and Avicta Duo Cotton
- Poncho Votivo
- AERIS Seed Applied System

## At-planting In-furrow Spray

- Velum Total at 14-18 oz/a

## Pre-plant fumigant

- Telone at 3 gal/a applied site-specifically

## Post-plant

- Vydate C-LV at 17 fl oz/a once or again at 8.5-17 fl oz/a at 14 days

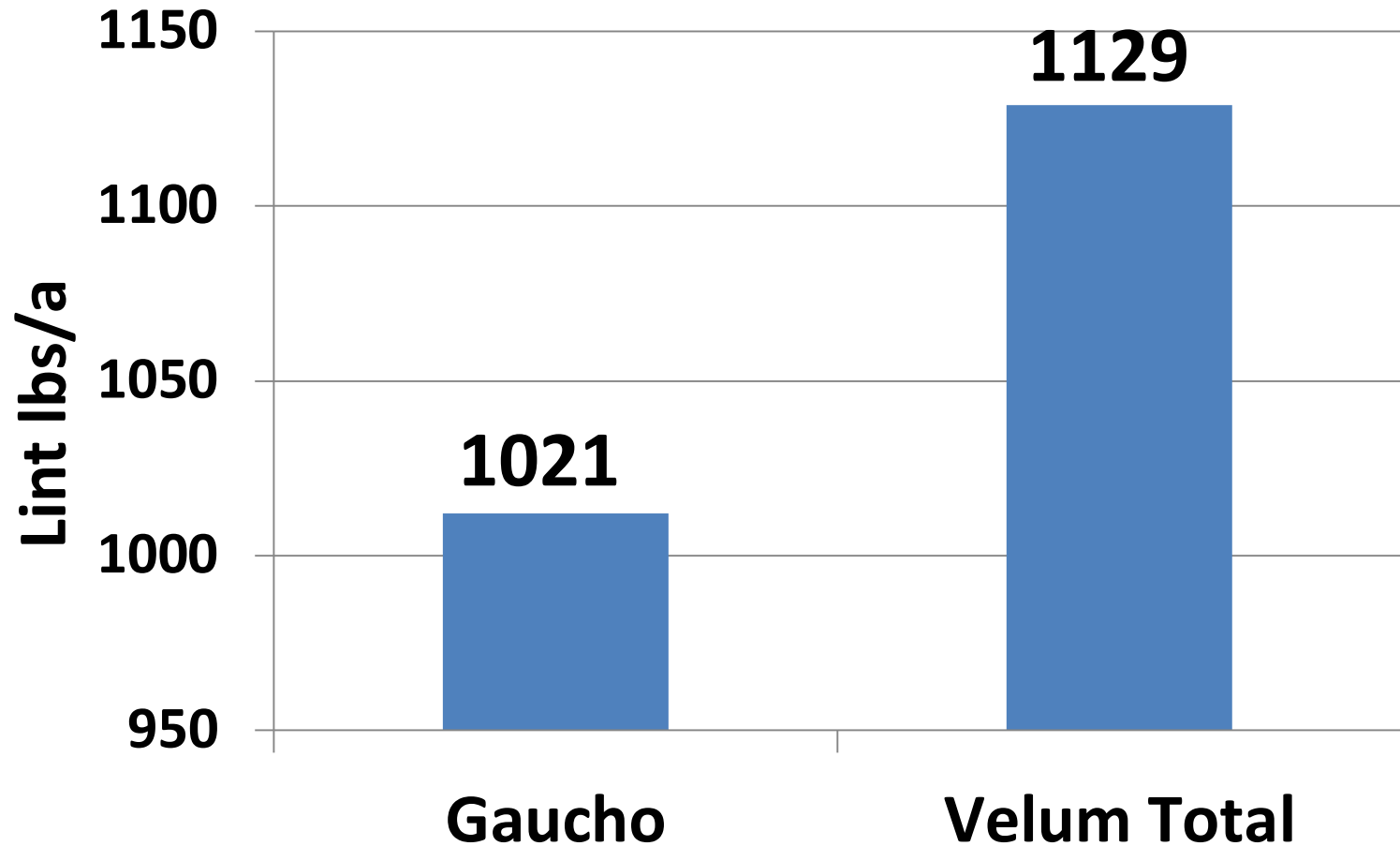




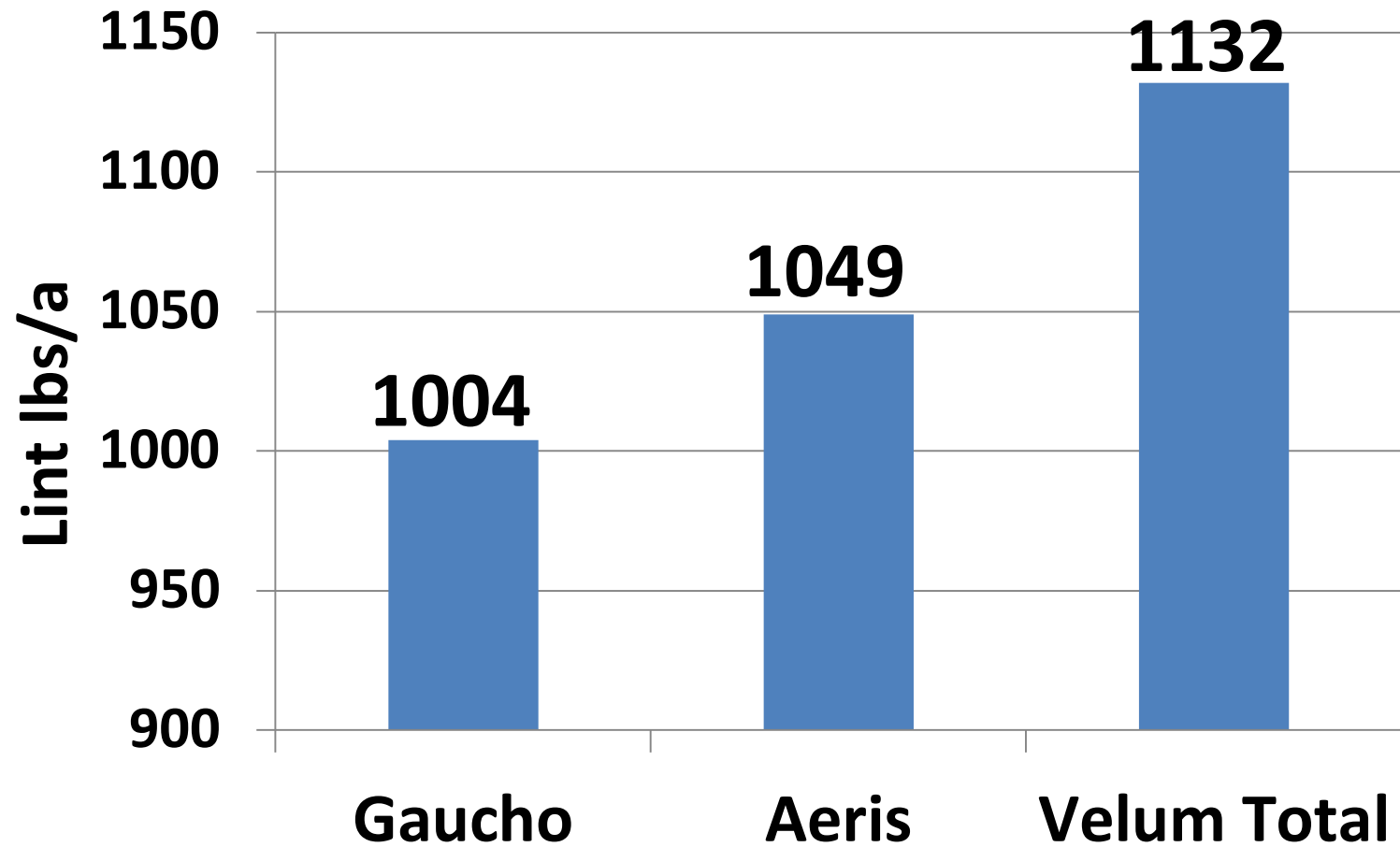
**Velum Total=**  
**Fluopyram and**  
**Imidacloprid**  
**Applied at 14-18 oz/a**  
**sprayed into the**  
**furrow at planting**



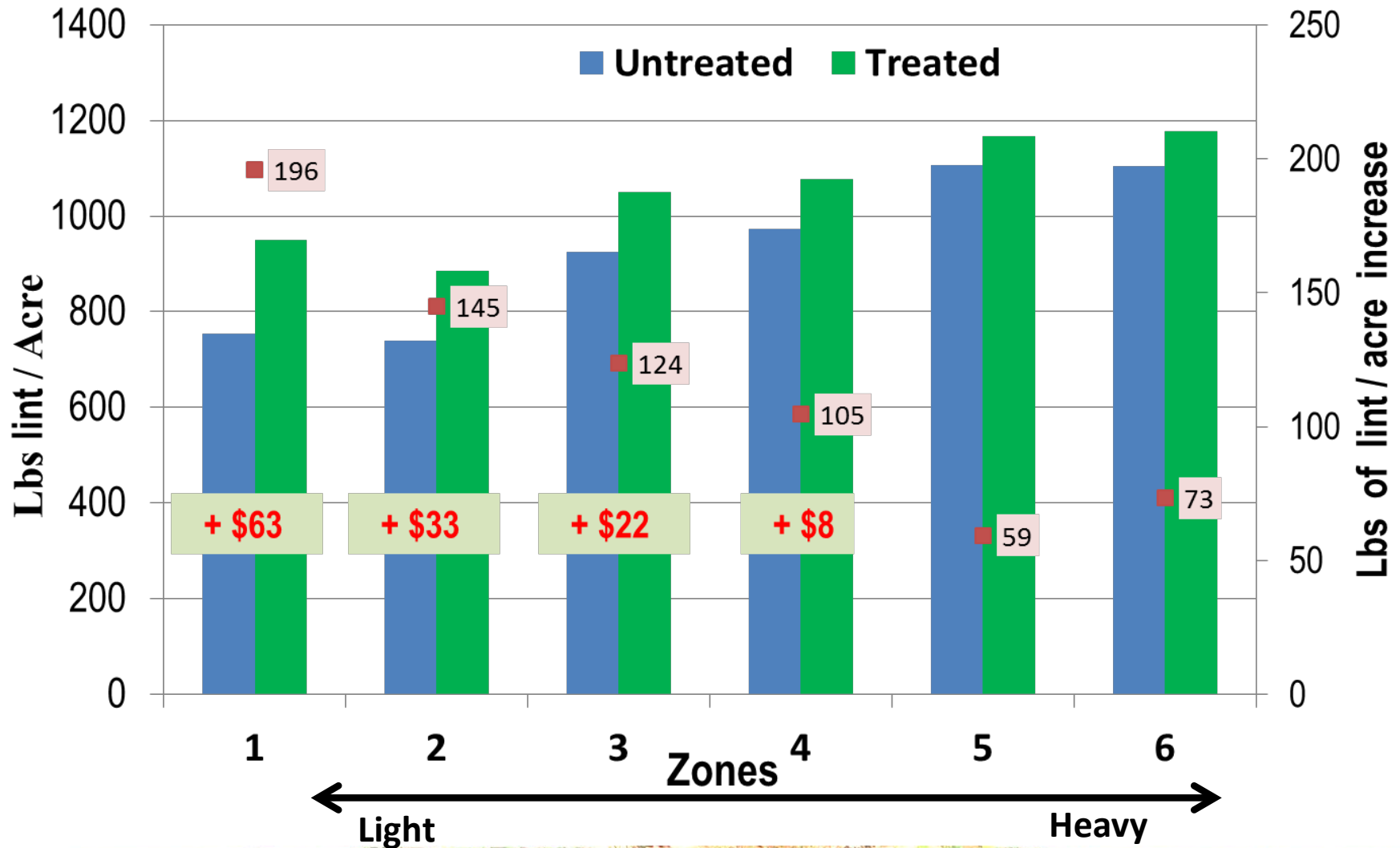
# Average response of Velum Total across 7 trials in Louisiana



# Response of seed treatment and infurrow applications of nematicides in 2015 at St. Joseph against high levels of reniform and root-knot nematodes



**Based on \$0.60 cotton and cost of Telone II of \$50 / acre, the ROI would be ~ \$63 for Zone 1, \$33 for Zone 2, \$22 for Zone 3 and \$8 for Zone 4 at St. Joseph, LA during 2012-2013.**



# Crop Rotation Effects on Nematodes

## Host Status for Root-knot Nematode

Cotton > Sweetpotato > Soybean > Corn > Grain Sorghum

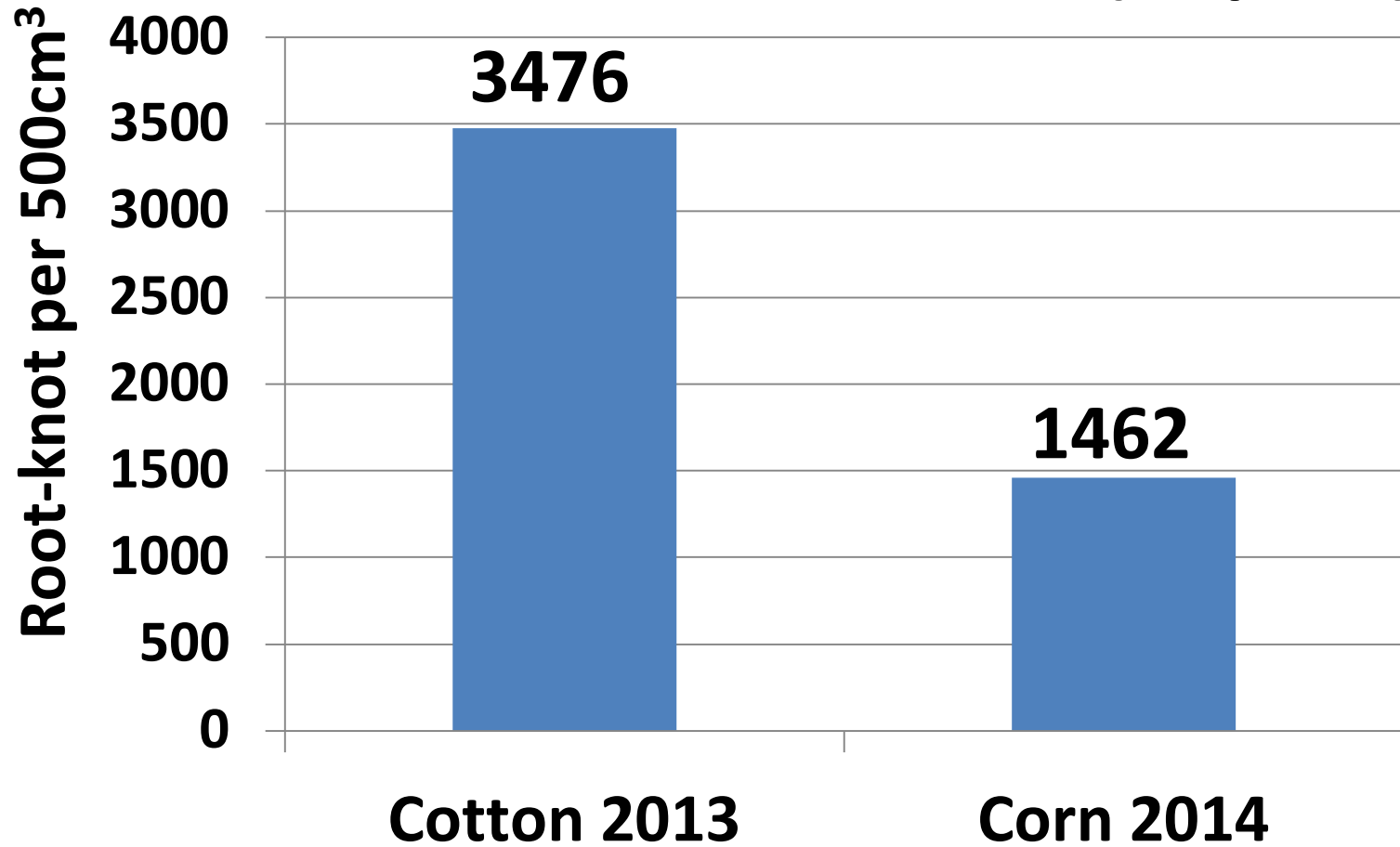
## Host Status for Reniform Nematode

Cotton > Soybean = Sweetpotato  
Corn & Grain Sorghum are nonhosts



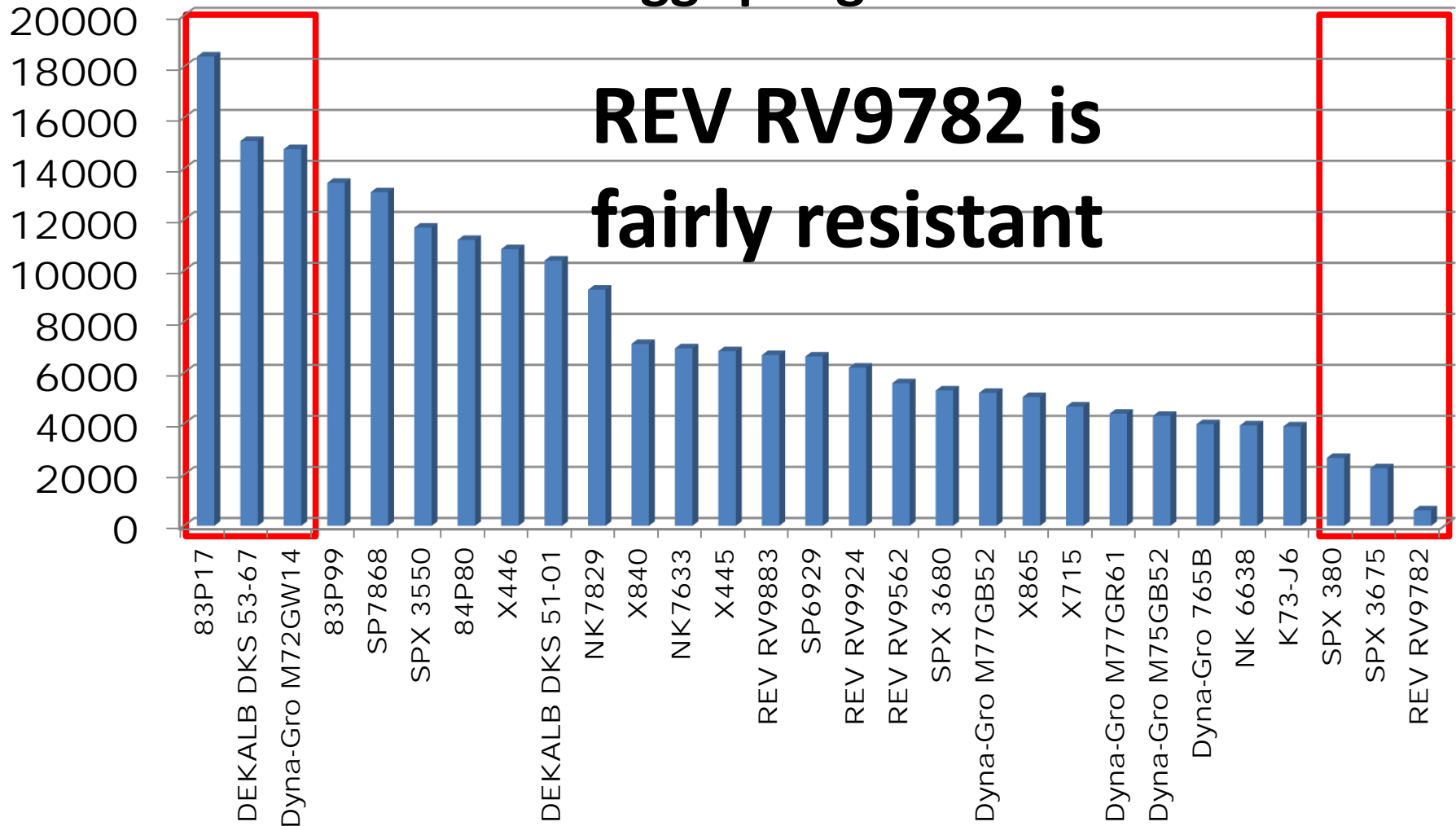


# Root-knot Nematode Levels at Harvest Across a test with Cotton and then Corn (48 plots)

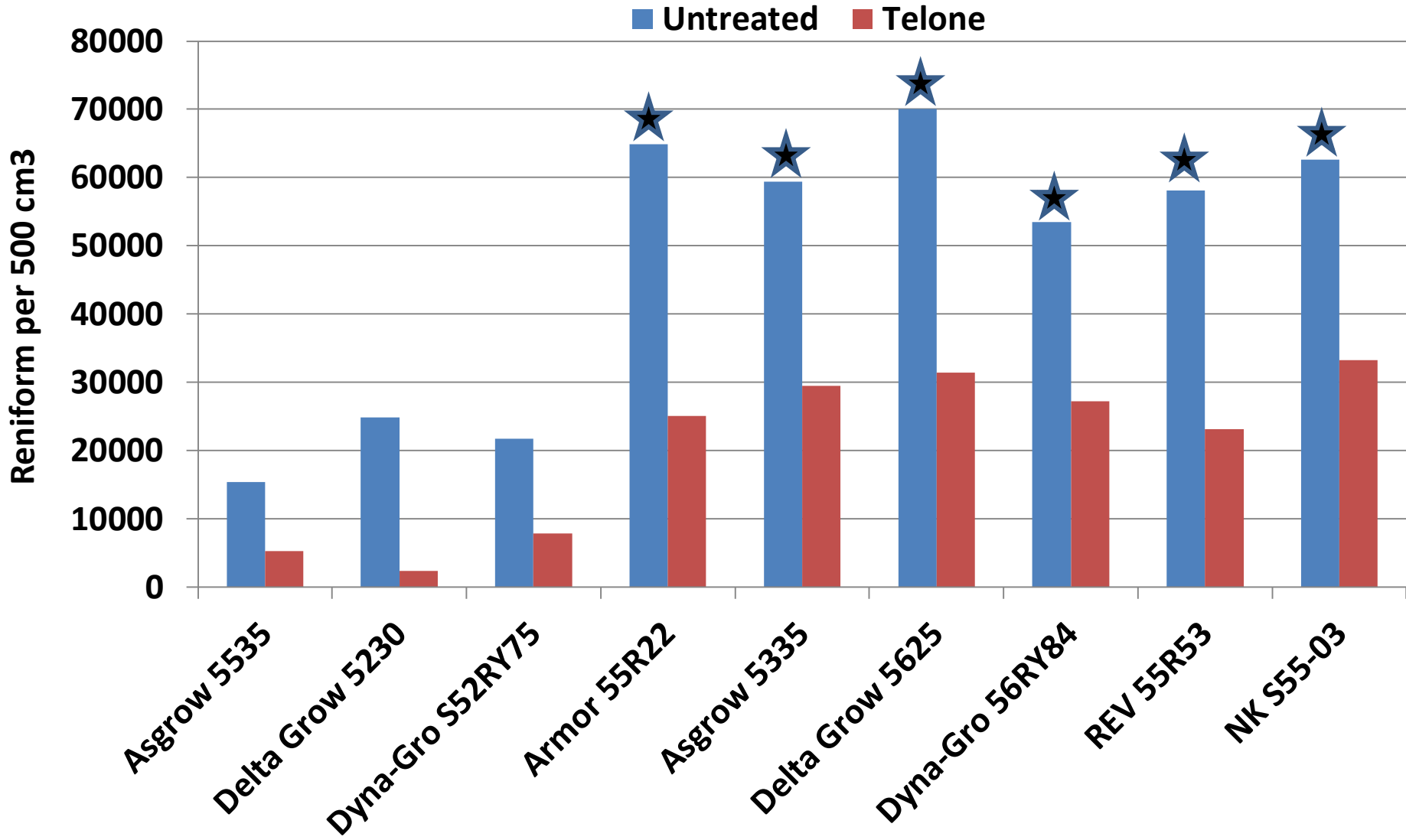


# 29 Sorghum varieties and root-knot nematode

## Number of eggs per gram of root



# Reniform populations after harvest on soybean cultivars with and without Telone at 3 gal/a



# Summary

## ➤ Damage

- Greatest losses usually associated with cotton after cotton

- Sandy soils or coarse silt loams most prone to damage from nematodes

## ➤ Rotations

- Corn is effective against both nematodes but watch out in root-knot fields





**DPL 445 after corn**

# Summary

## ➤ Damage

- Greatest losses usually associated with cotton after cotton
- Sandy soils or coarse silt loams most prone to damage from nematodes

## ➤ Rotations

- Corn is effective against both nematodes but watch out in root-knot fields
- Use resistance in soybeans in fields with high levels of nematodes



# Summary

## ➤ Nematicides

**Low nematode levels**

**Seed treatments, in-furrow sprays**

**High nematode levels**

**Combinations, fumigant**

## ➤ Application

**-Seed treatments are on the seed**

**-In-furrow sprays applied in narrow band**

**-Fumigants or combinations with fumigants should be applied site-specifically**

