



# **Cotton Nematodes**

## **What's Changing?**

## **What Should You Do?**

### **Charles Overstreet, Extension**

### **Specialist and Professor**

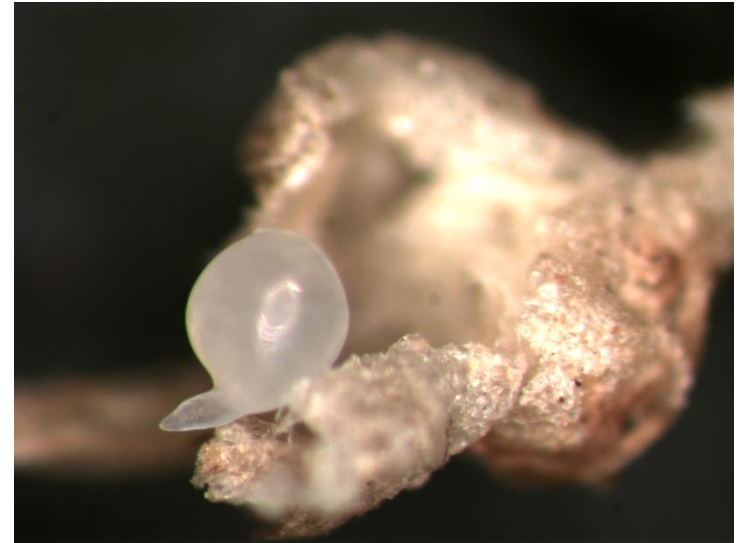
### **(Nematology)**



# Cotton Nematodes in Louisiana

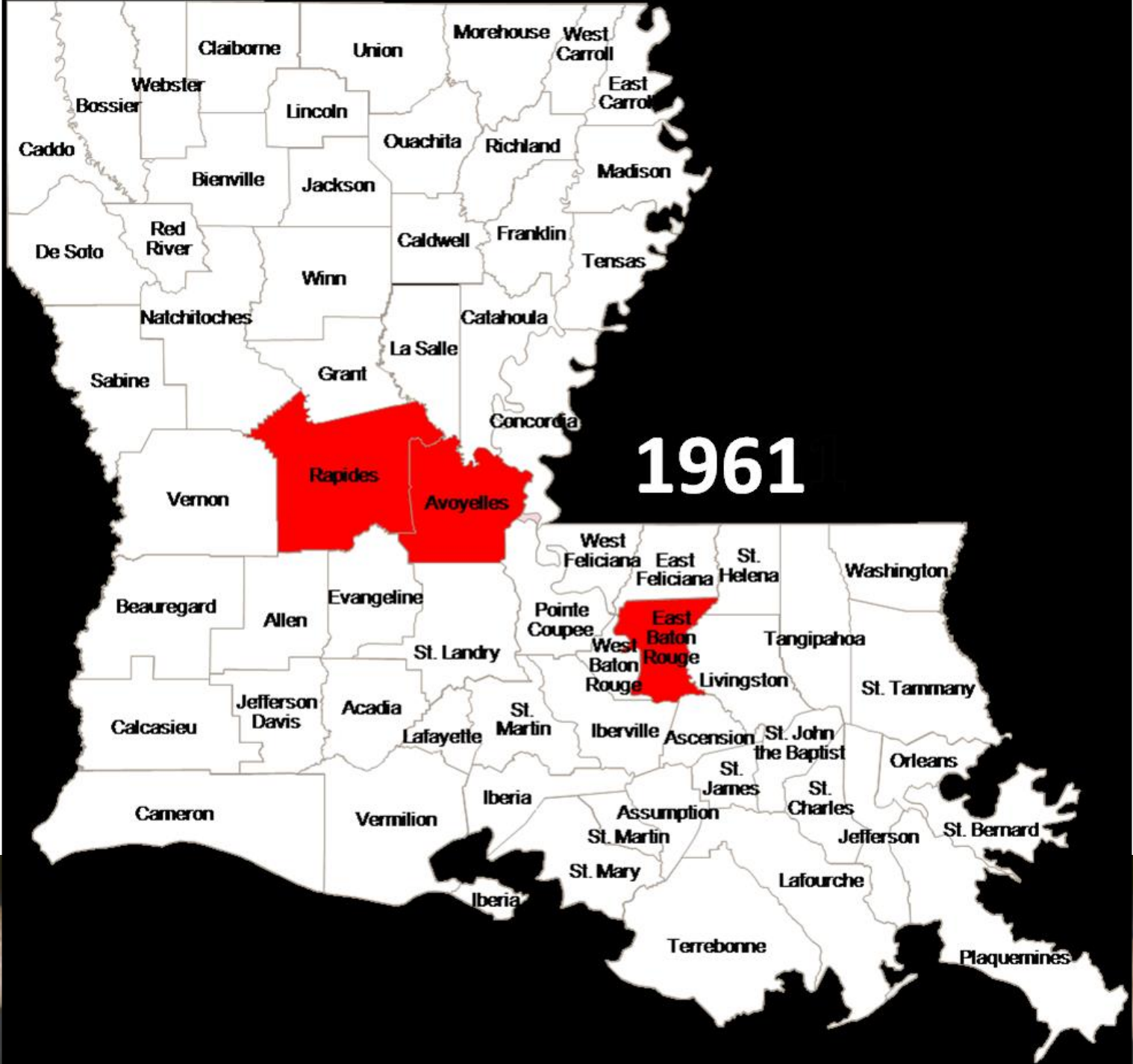


**Reniform nematode**

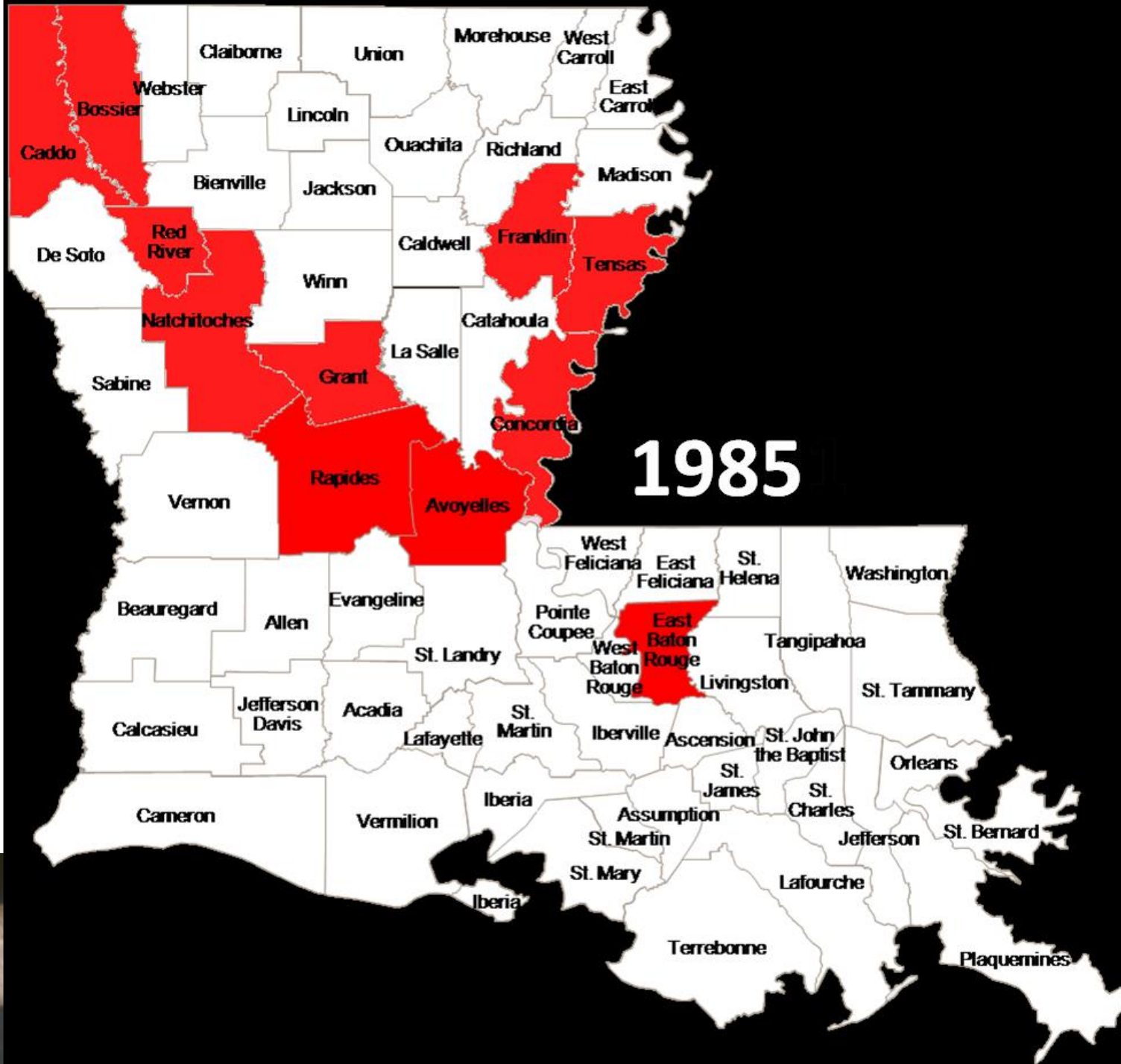


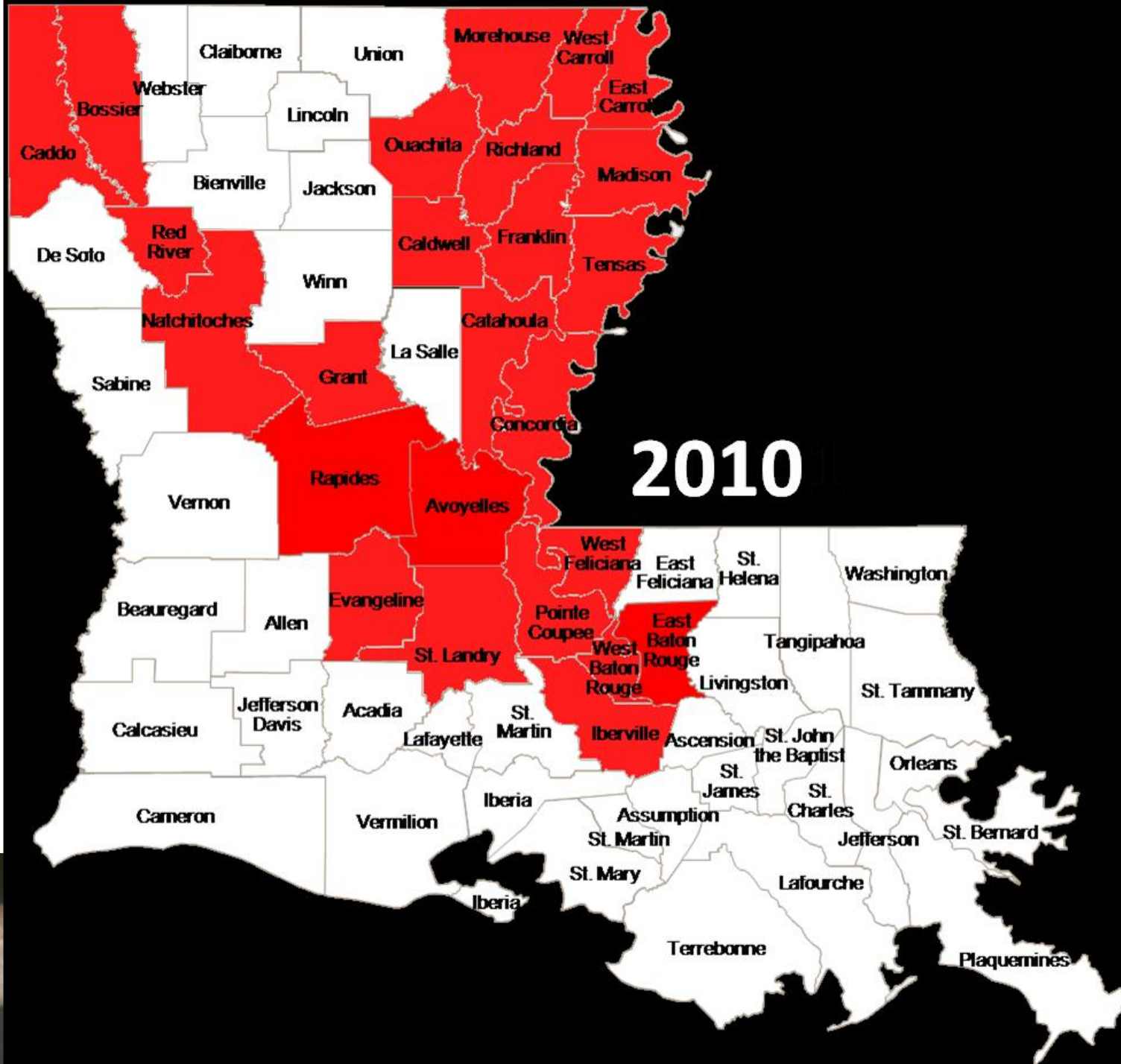
**Southern root-knot nematode**





1961

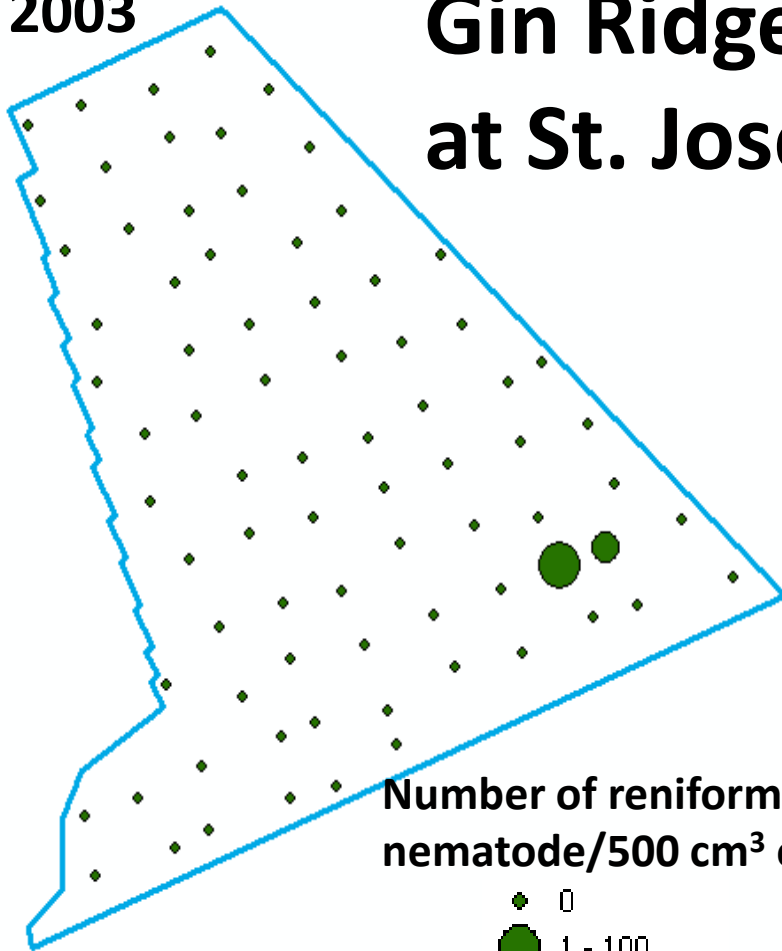




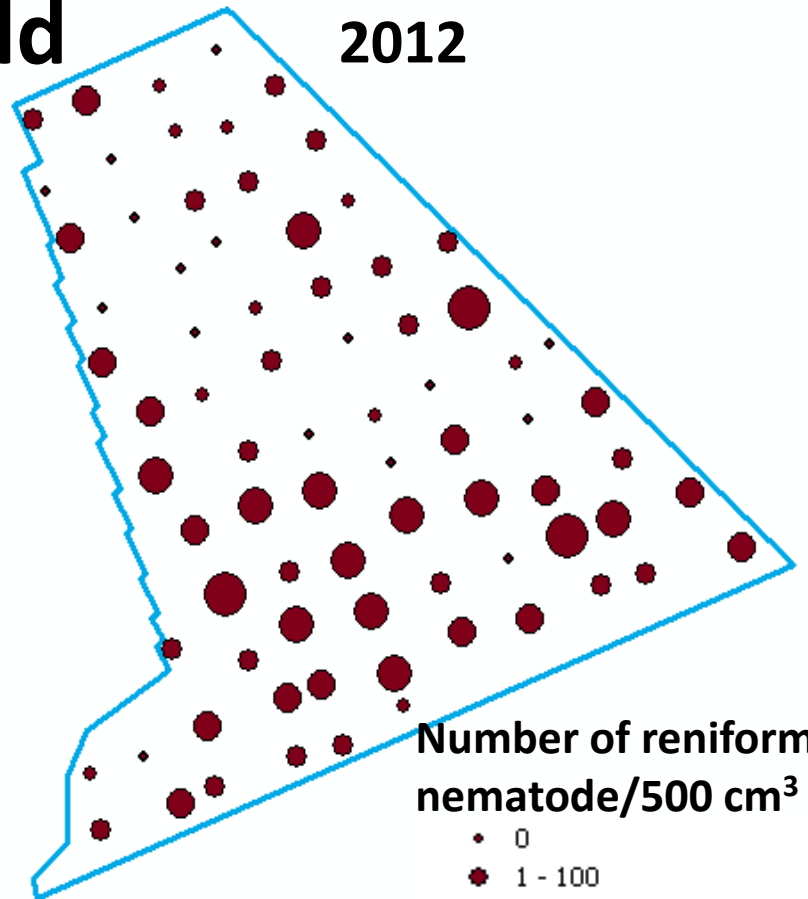
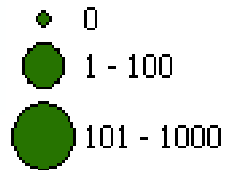
2003

# Gin Ridge Field at St. Joseph

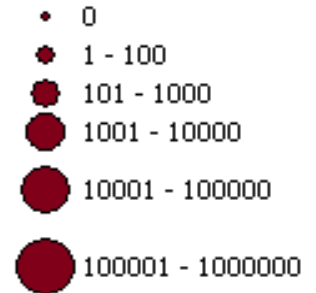
2012



Number of reniform  
nematode/500 cm<sup>3</sup> of soil



Number of reniform  
nematode/500 cm<sup>3</sup> of soil



# Crop Rotation

- **Monoculture prevalent during the 1970s, 1980s, and 1990s**
- **Rotation became more common after that period**



# **Soybeans with resistance against the reniform nematode**

## **Roundup Ready varieties**

**Delta Grow DG4940RR**

**MPG 5214NRR**

**Armor AX4520**

**LG Seed C5252R2**

**Asgrow AG5535 GENRR2Y**

**Armor AX4450**

**Dyna-Gro S52Ry75**

**Delta Grow DG5230 GENRR2Y**

## **Conventional Varieties**

**S11-20356**

**S11-20124**







**Southern root-knot on soybean**

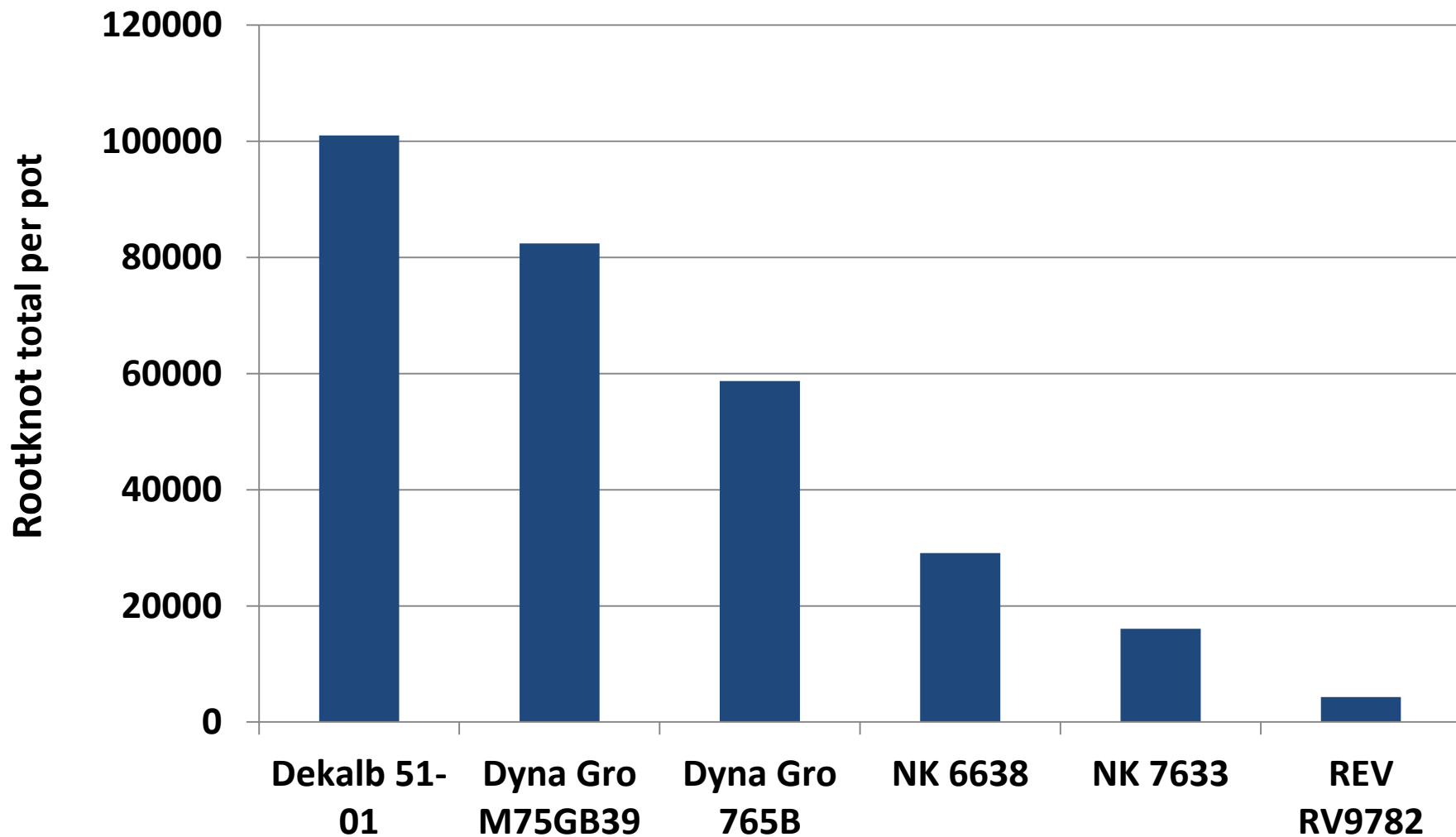


**Southern root-knot on sweetpotato**



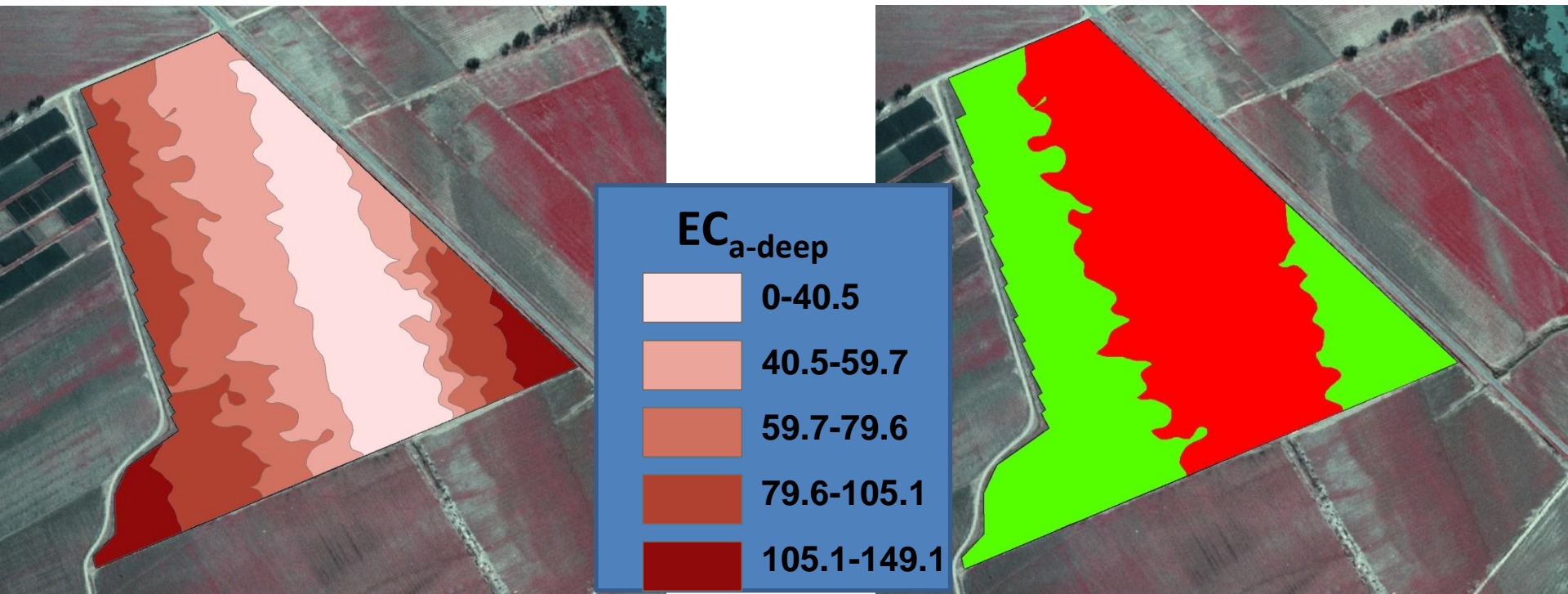
**Southern root-knot on grain sorghum**

# Grain Sorghum varieties tested in 2014

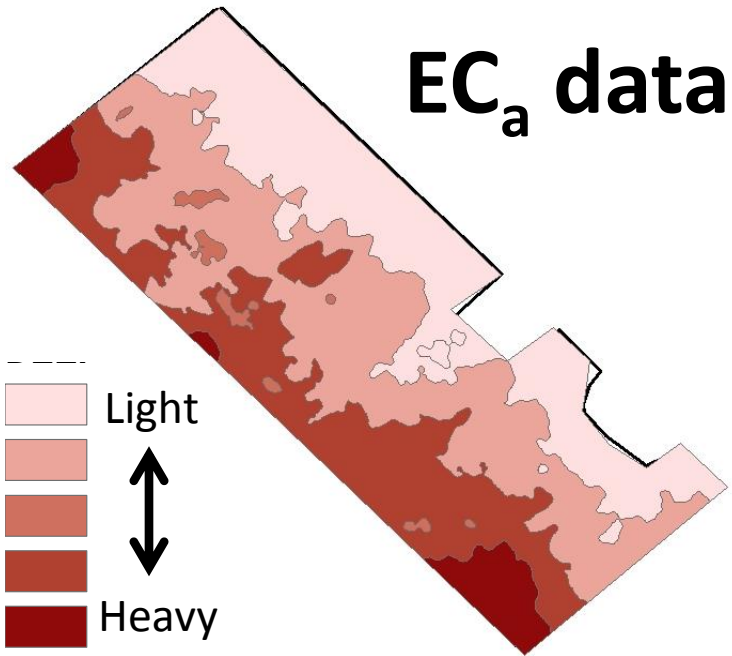


# Site-specific nematode management

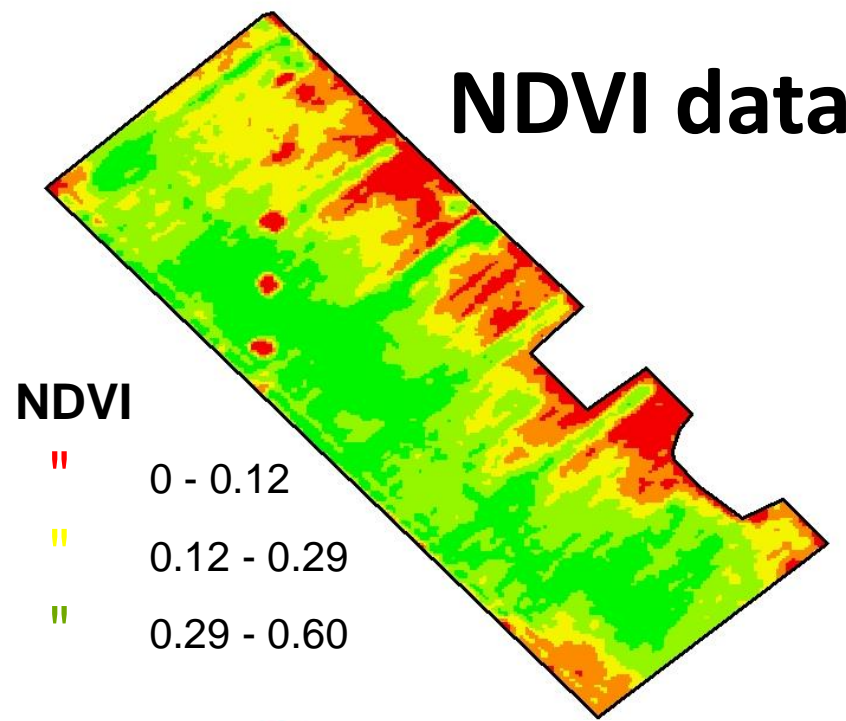
Identifying high risk areas to nematodes within a field



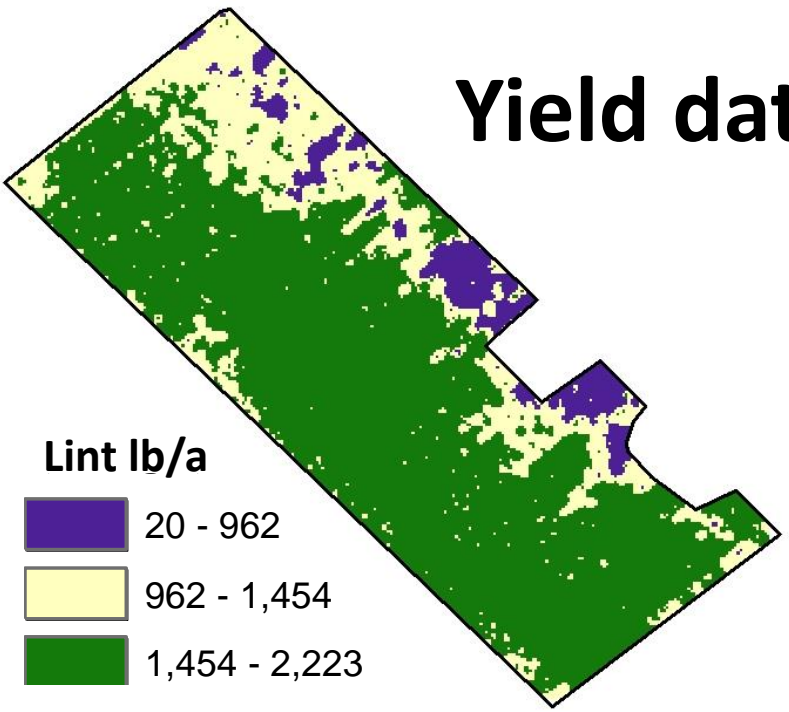
# EC<sub>a</sub> data



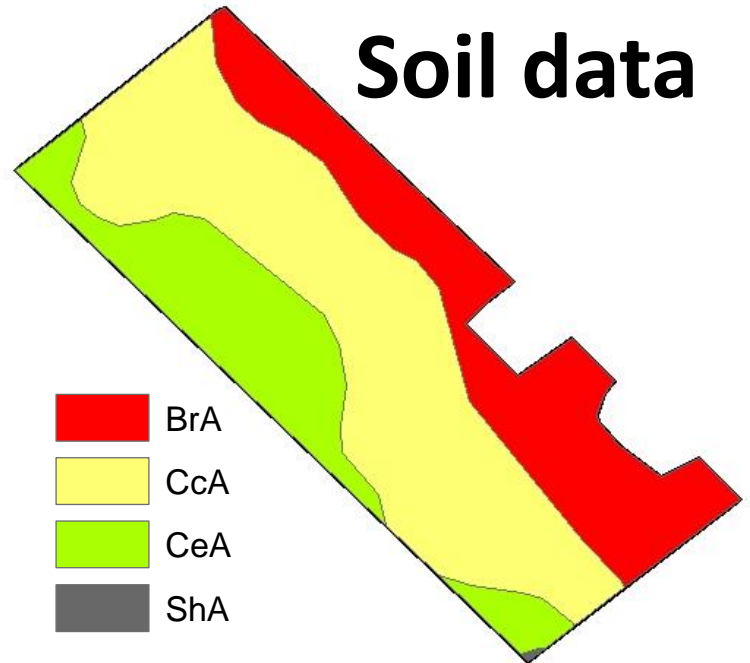
# NDVI data



# Yield data



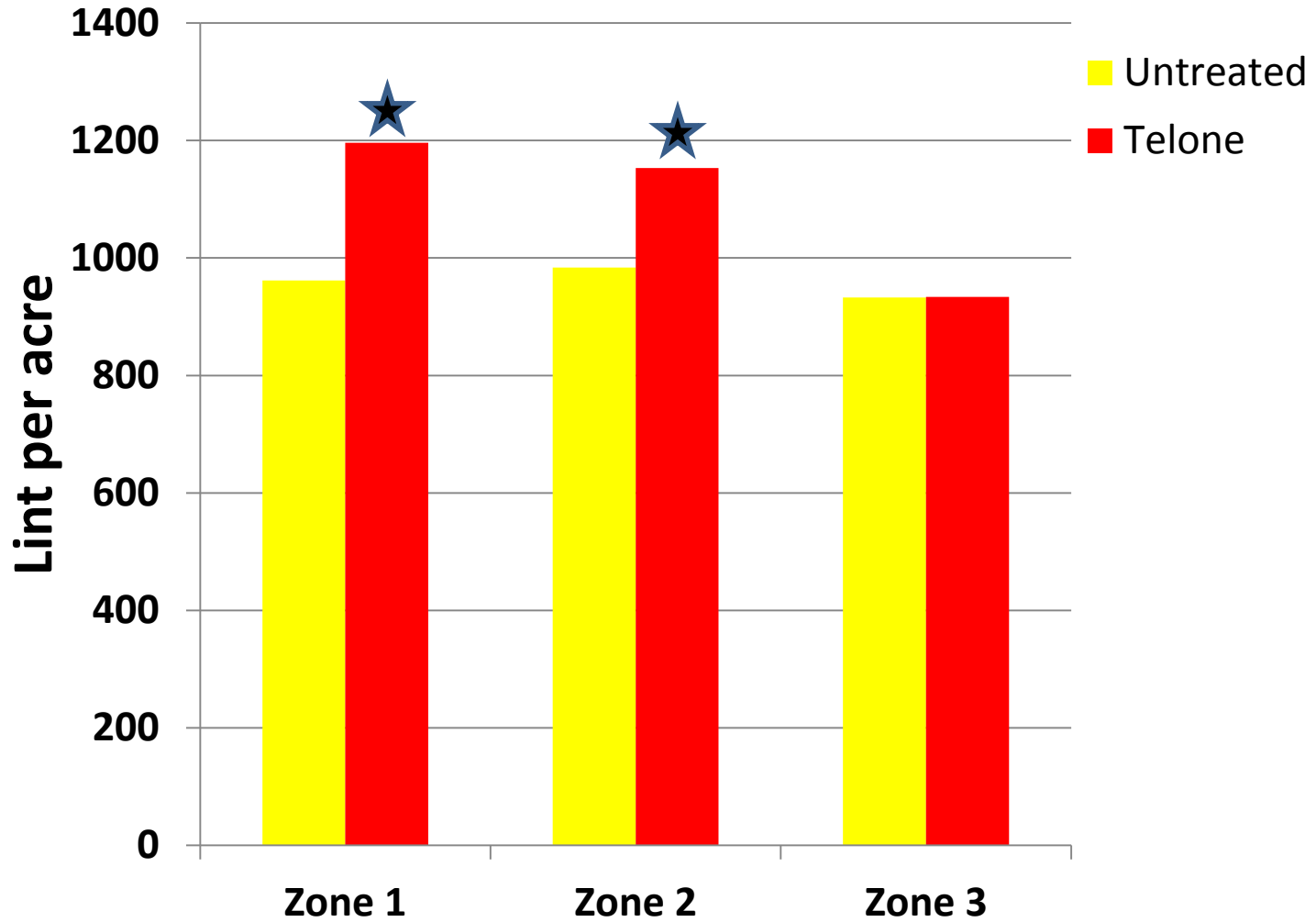
# Soil data



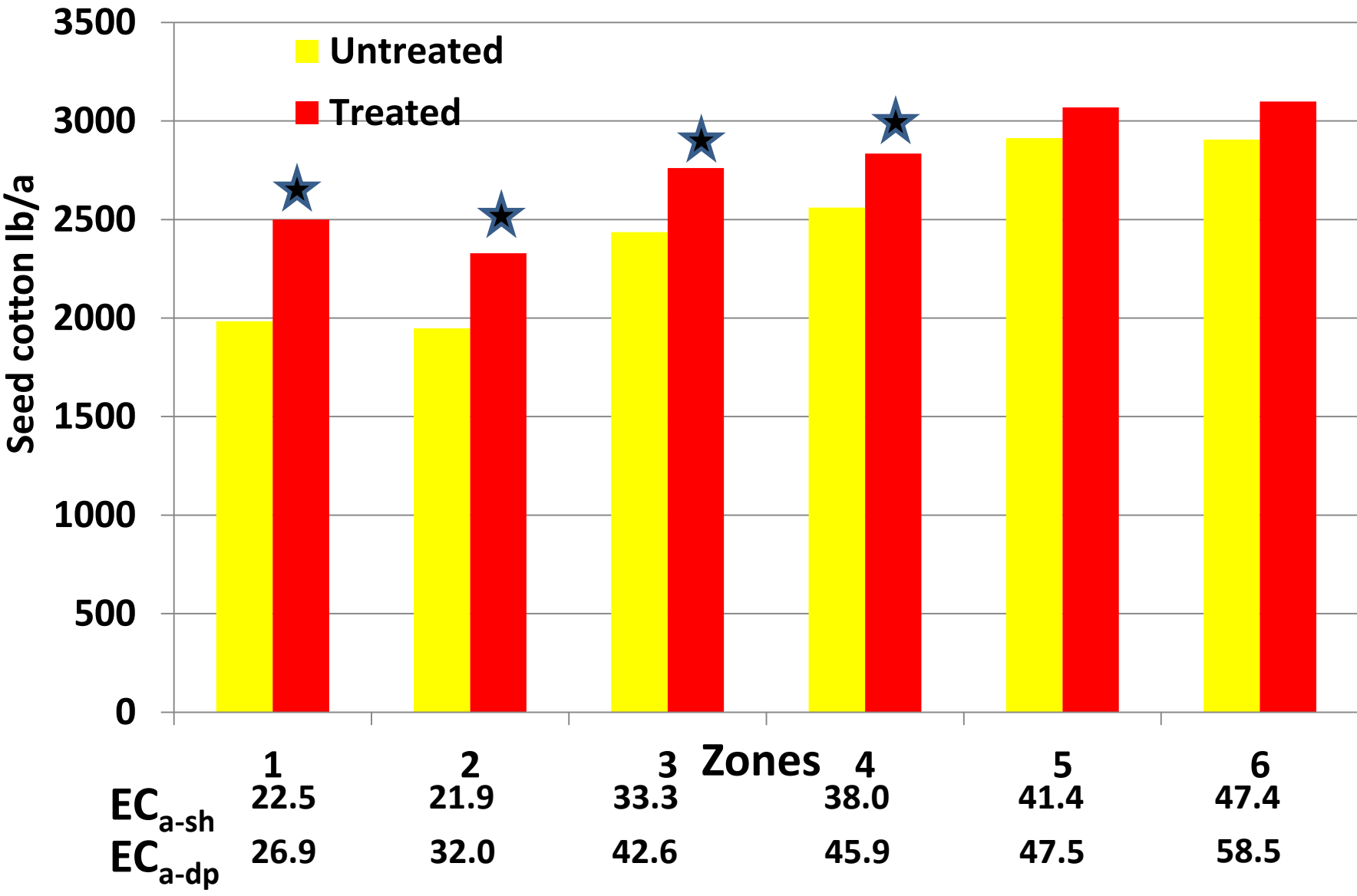
# Verification Strips



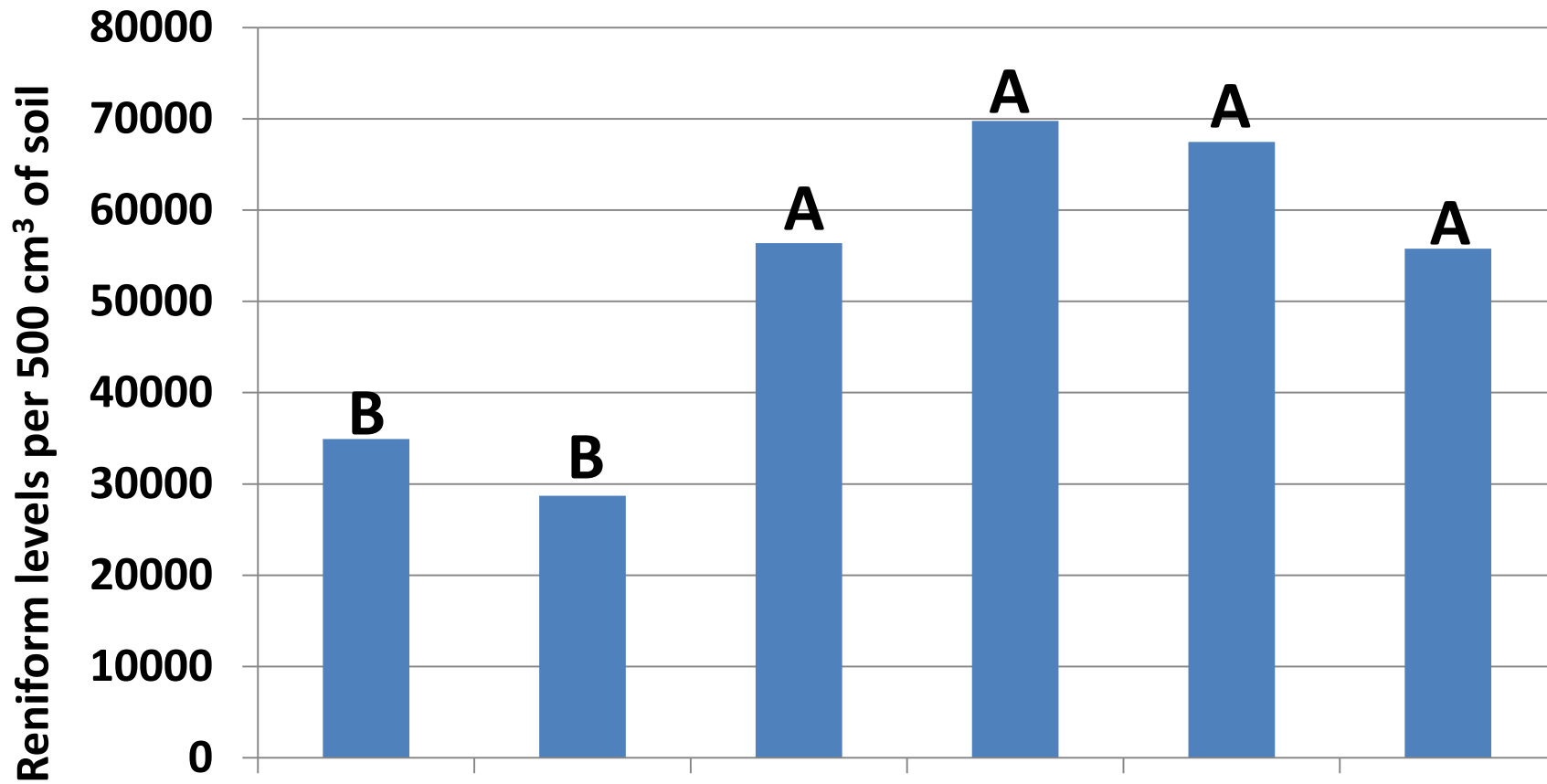
# Spyker Field in Morehouse Parish Against Root-knot



**Average yield in cotton PhytoGen 499 treated and untreated by zone during 2013-14 against reniform nematode at Northeast Research Station**



# Overwintering reniform levels by zone

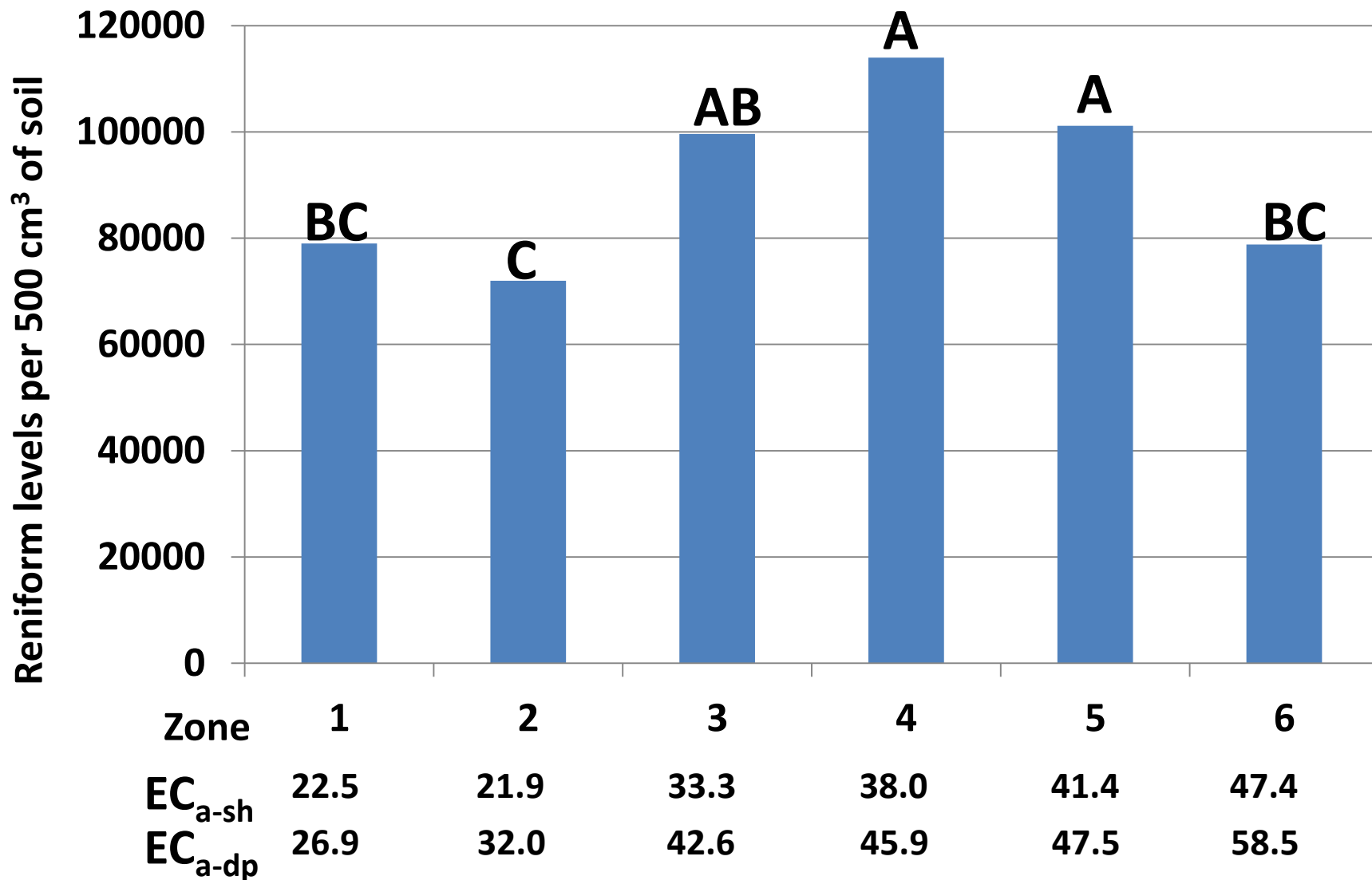


Zone	1	2	3	4	5	6
EC <sub>a-sh</sub>	22.5	21.9	33.3	38.0	41.4	47.4
EC <sub>a-dp</sub>	26.9	32.0	42.6	45.9	47.5	58.5





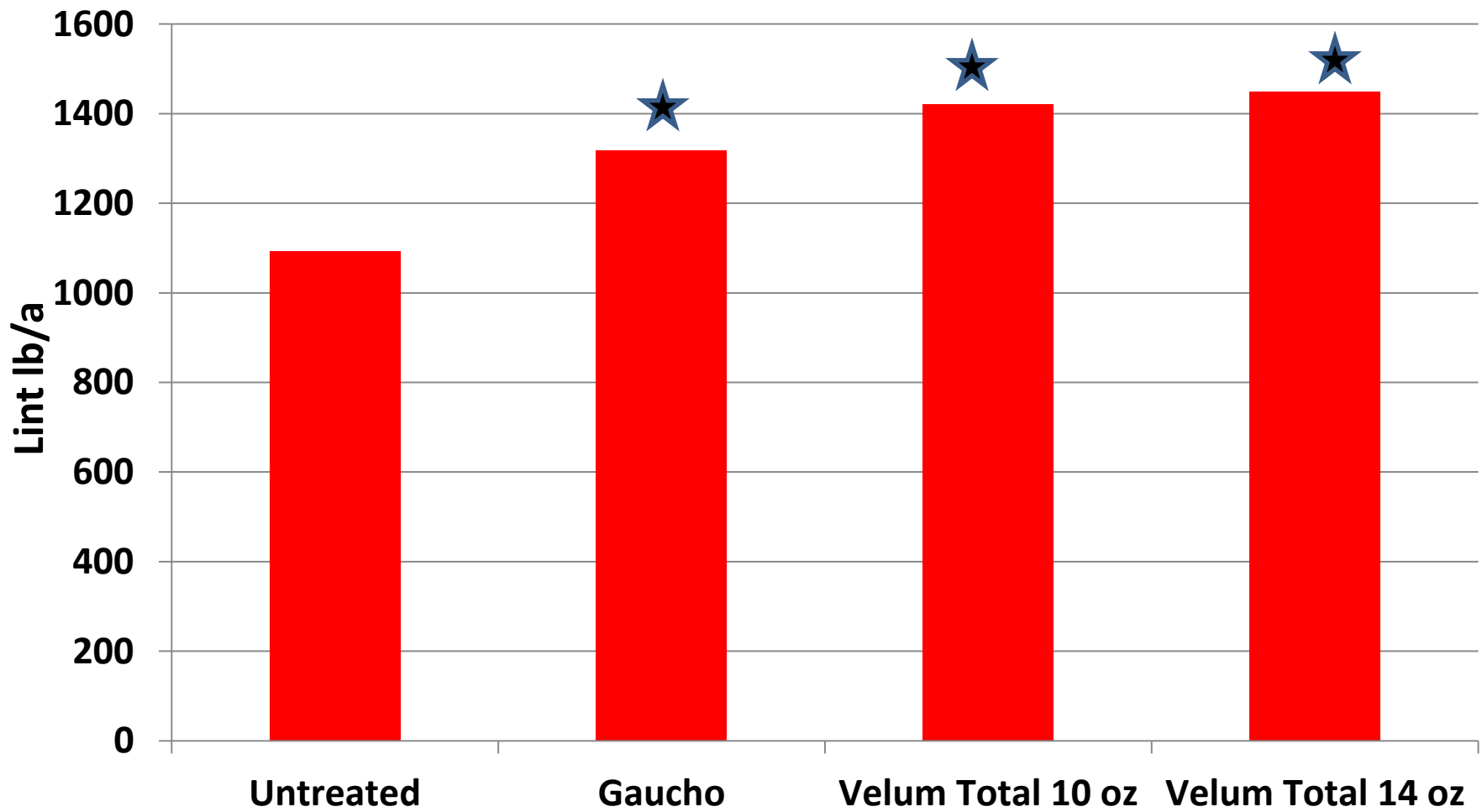
# Harvest levels of reniform by zone

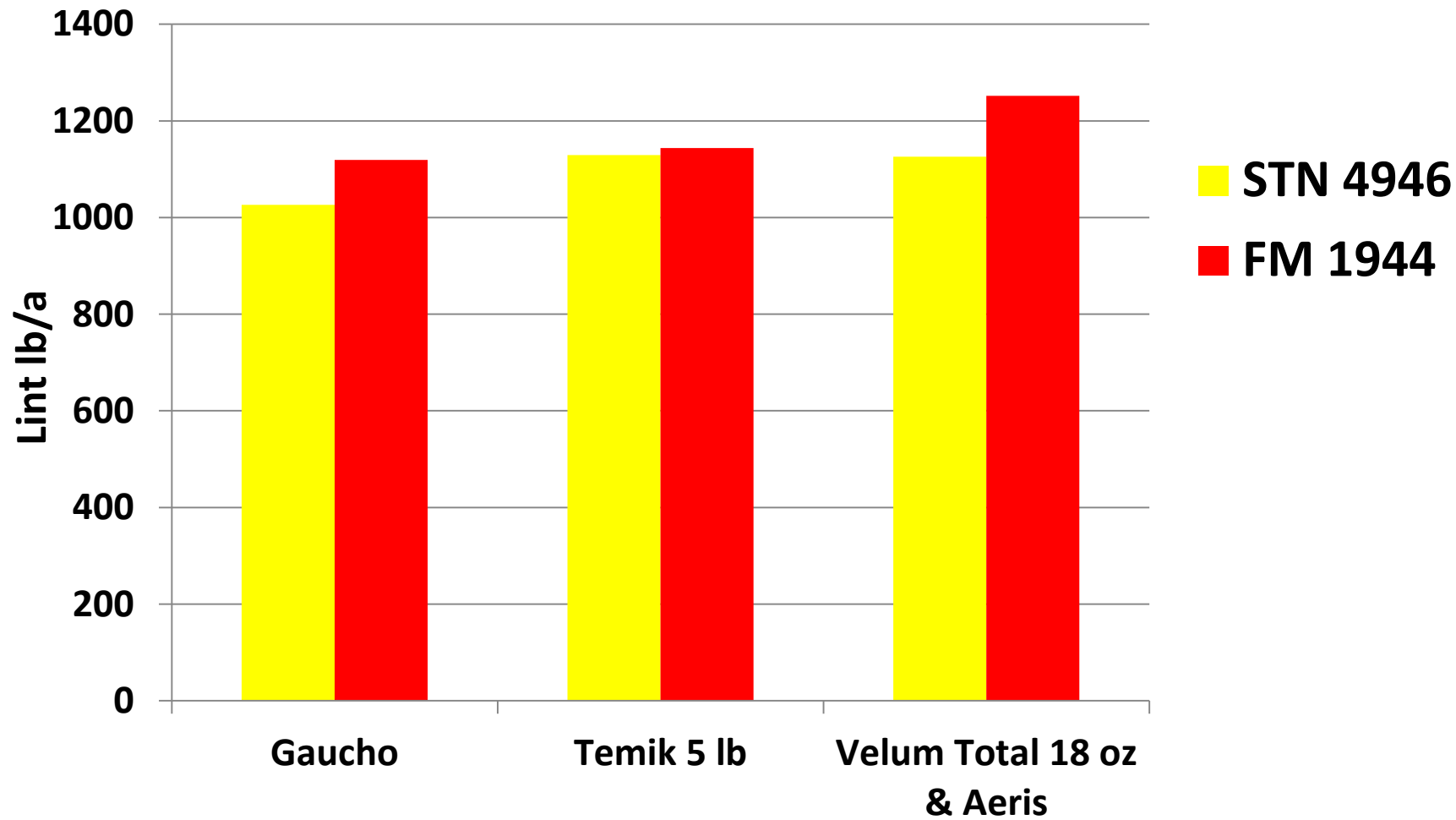


# New Nematicides

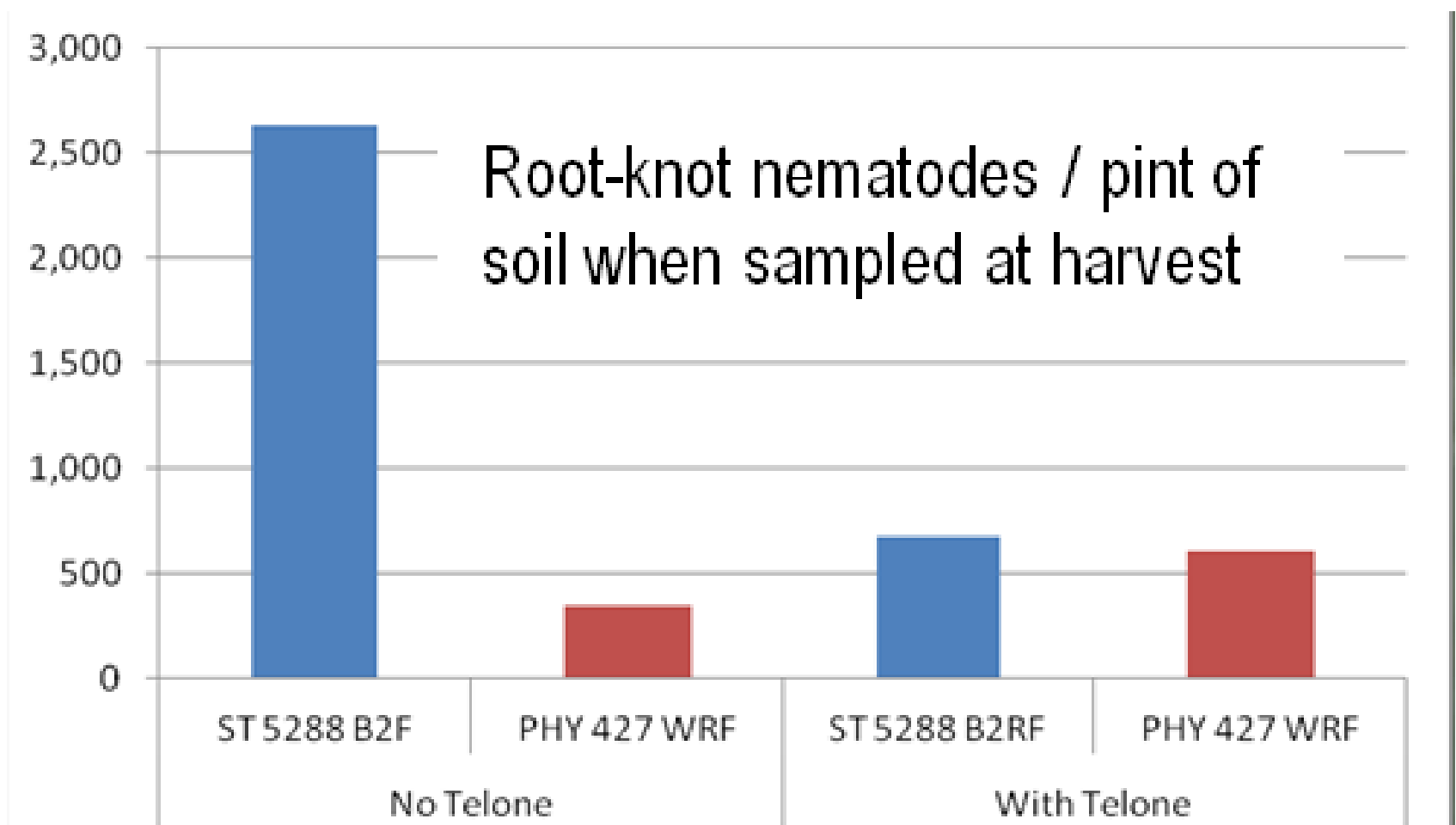
- **Velum Total**
  - **Active ingredient fluopyram**
  - **Expected to be on the market (limited) in 2015 and full usage by 2016**



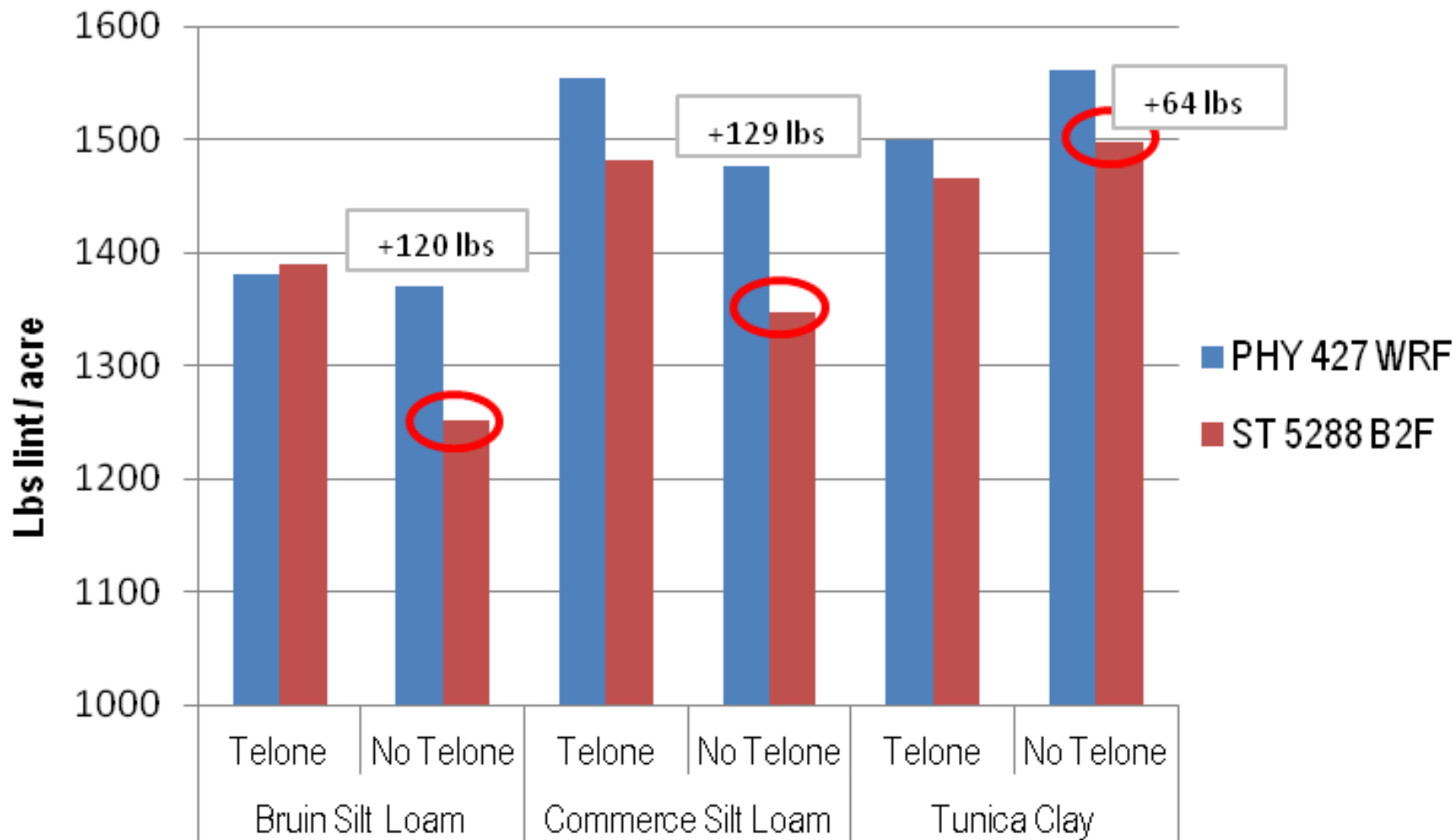




# Resistance and Nematicides



# Resistance and Nematicides



# Summary

## Reniform

- Populations have increased since the 1960s
- Rotation to sorghum, corn, or resistant soybean may reduce populations
- Populations are higher and overwinter better in EC<sub>deep</sub> values of 30 to 60
- Site specific management with nematicides of zones with EC<sub>deep</sub> values from 0 to 60 may be economical (will vary from field to field)

## Root-knot

- Resistant cotton varieties may reduce populations
- Rotation to grain sorghum may reduce or increase populations (depending on hybrid)
- Handful of RKN-resistant soybean varieties
- Site-specific management similar to reniform may be economical