



# Participatory Vegetable Crop Variety Trials in the Southeast: Biomass Yields

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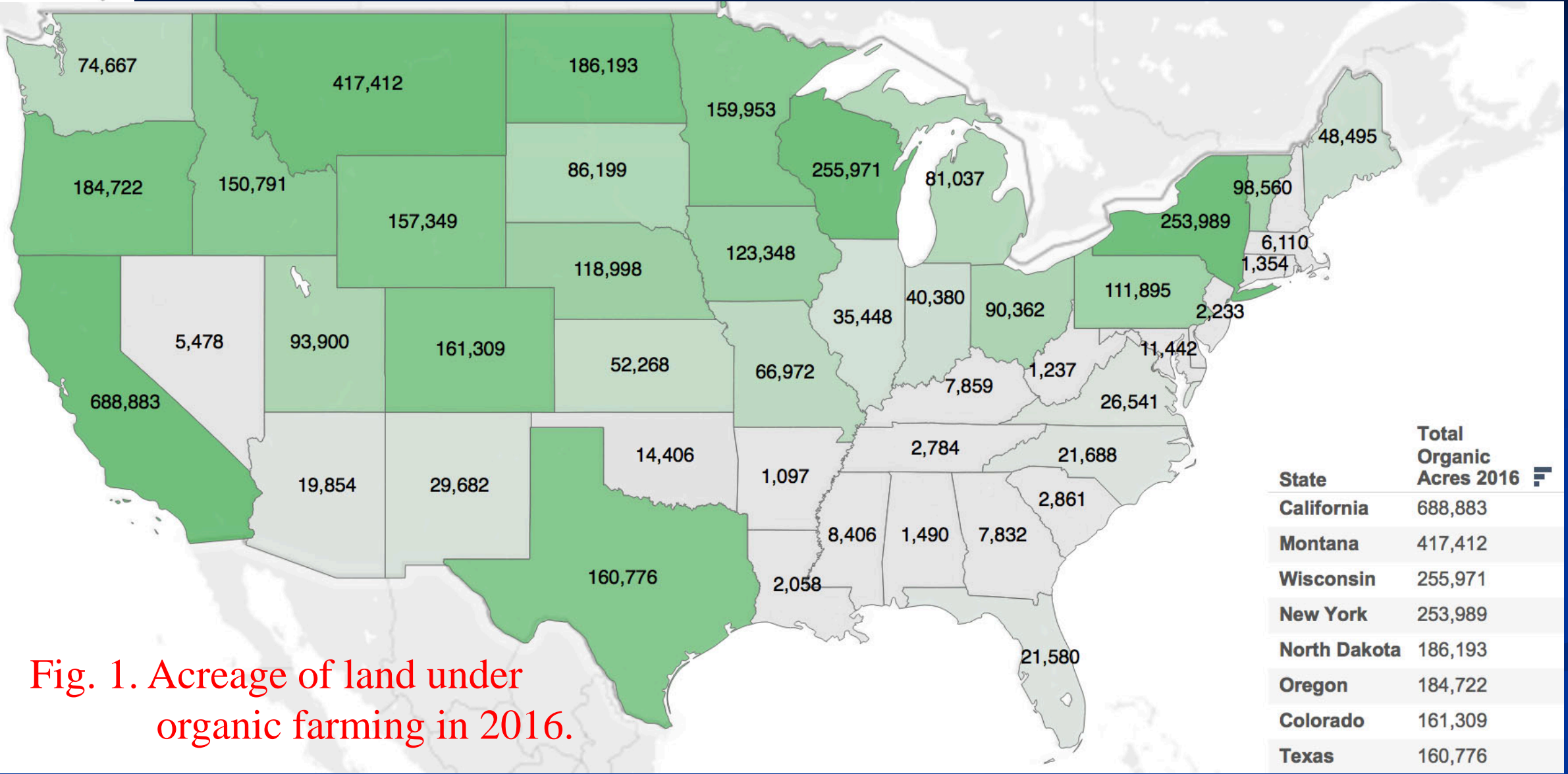


Fig. 1. Acreage of land under organic farming in 2016.



# Some Reasons of Low Organic Farming Activities in the Southeast

- Organic farming is labor intensive;
- Environmental conditions are favorable for rapid mineralization of organic crop residues;
- Disease outbreaks, weed competition, and insect proliferation.

Thus, for successful organic farming in the SE, special attention to agro-ecosystems is needed.

# Objectives

- 1) To give site specific recommendations to organic growers in the Southeast, and
- 2) To explore relationships between crop yields and geographic locations in the Southeast

# METHODOLOGY

- Forty-one organic and transitioning organic farms: Alabama, Georgia, Mississippi, North Carolina, South Carolina, and Tennessee,
- Land space, farming implements, irrigation, and easy road access,
- The grower must agree to plant two varieties (in parentheses) of one of the following four vegetable crops: Sweet Potato (Garnet, Orleans, or Covington), Squash (Gentry, Zephyr, or Spineless Beauty), Southern pea (Queen Anne, Mississippi Silver, or Pinkeye Purple Hull BVR), or Tomato (Celebrity, Mountain Magic, or Rocky Top),
- The grower was also asked to select two varieties of a vegetable crop he/she finds challenging to grow on his/her farm. Once these criteria are met, the grower signed a three-year contract to host the trial for a monetary compensation.

# Grower recruitment for on-farm variety trials





Fig. 2. On-Farm research sites in the Southeast.

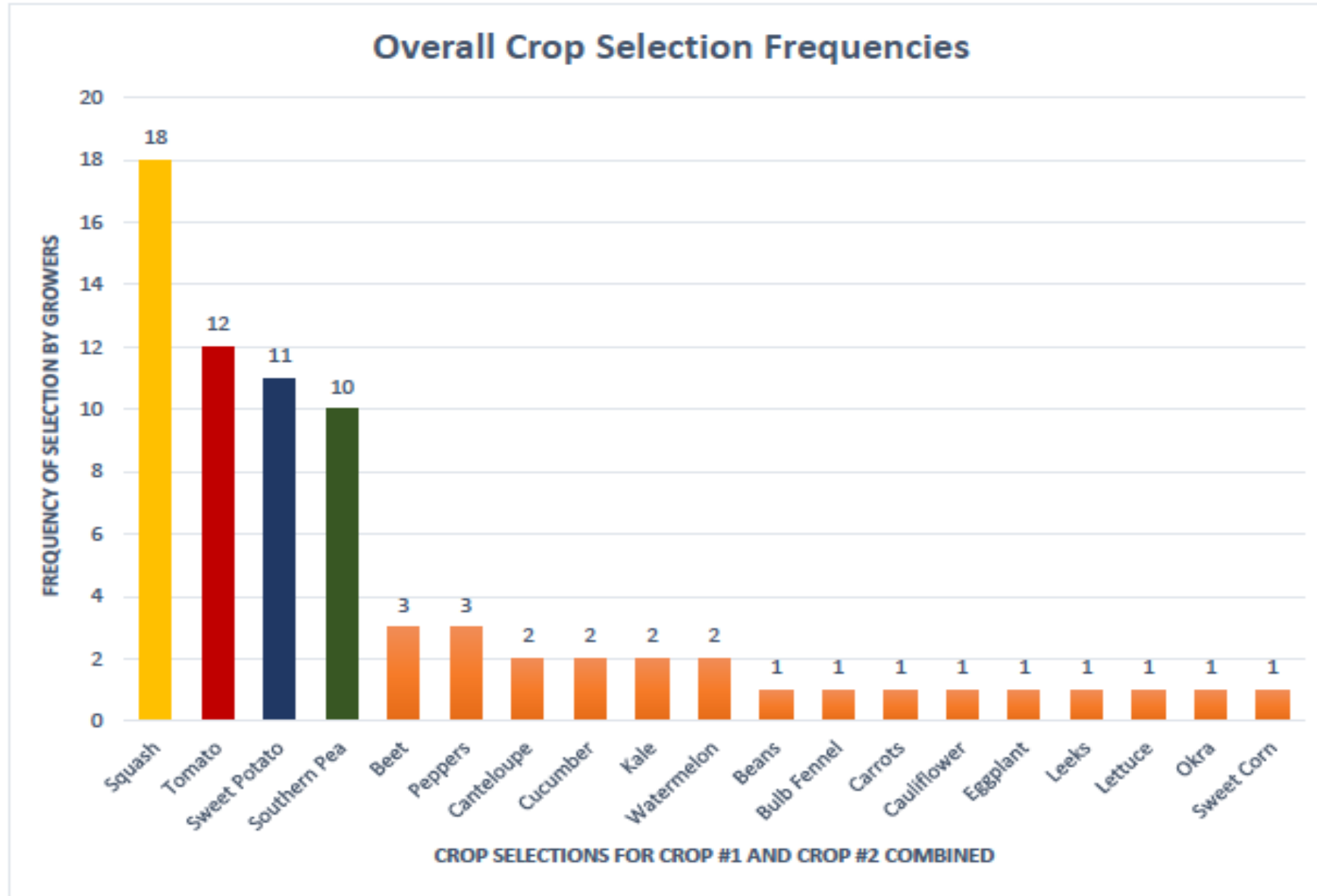
# Crop Varieties

- **Southern pea:** Queen Anne, Mississippi Silver, and Pinkeye Purple Hull BVR
- **Squash:** Gentry, Zephyr, and Spineless Beauty
- **Sweet Potato:** Garnet, Orleans, and Covington
- **Tomato:** Celebrity, Mountain Magic, and Rocky Top



Fig. 3.

# Overall Crop Selection Frequencies (including selections for Crop #1 and Crop #2)



# Sweet potato yields



## Yield (ton/acre)

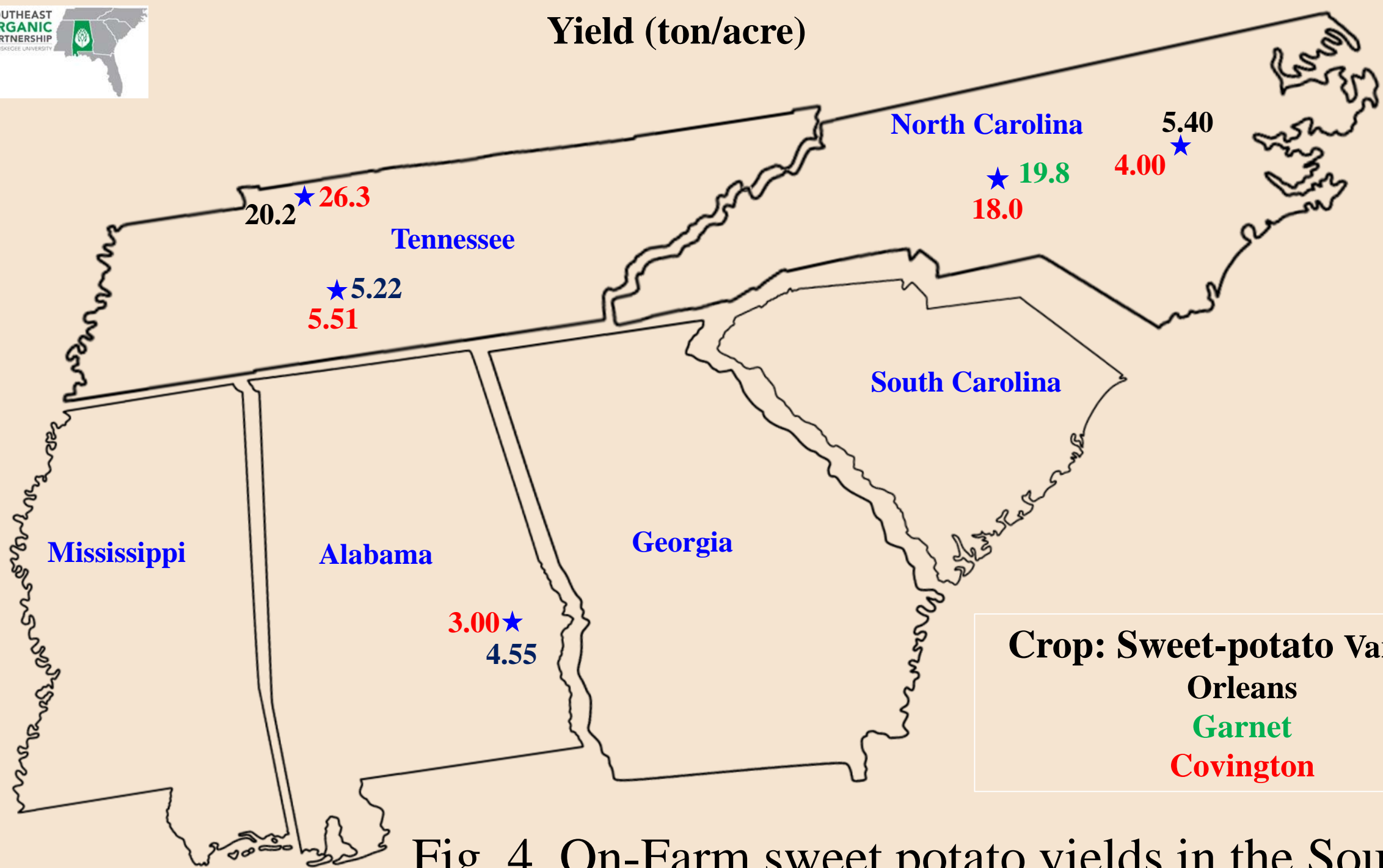


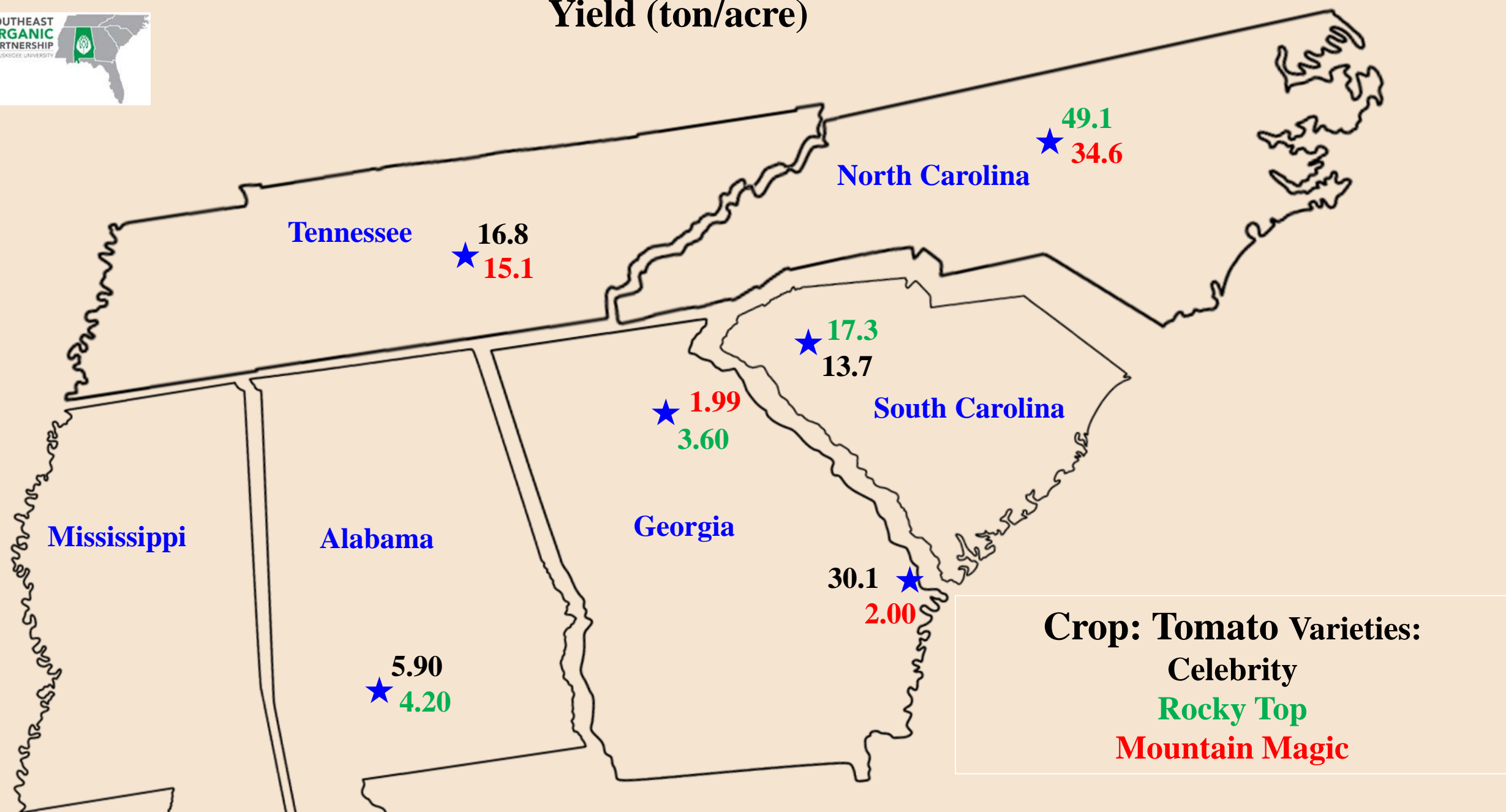
Fig. 4. On-Farm sweet potato yields in the Southeast



# Tomato yields



Yield (ton/acre)



**Crop: Tomato Varieties:**  
**Celebrity**  
**Rocky Top**  
**Mountain Magic**

Fig. 5. On-Farm tomato yields in the Southeast.



# Southern pea yields





# Yield (ton/acre)

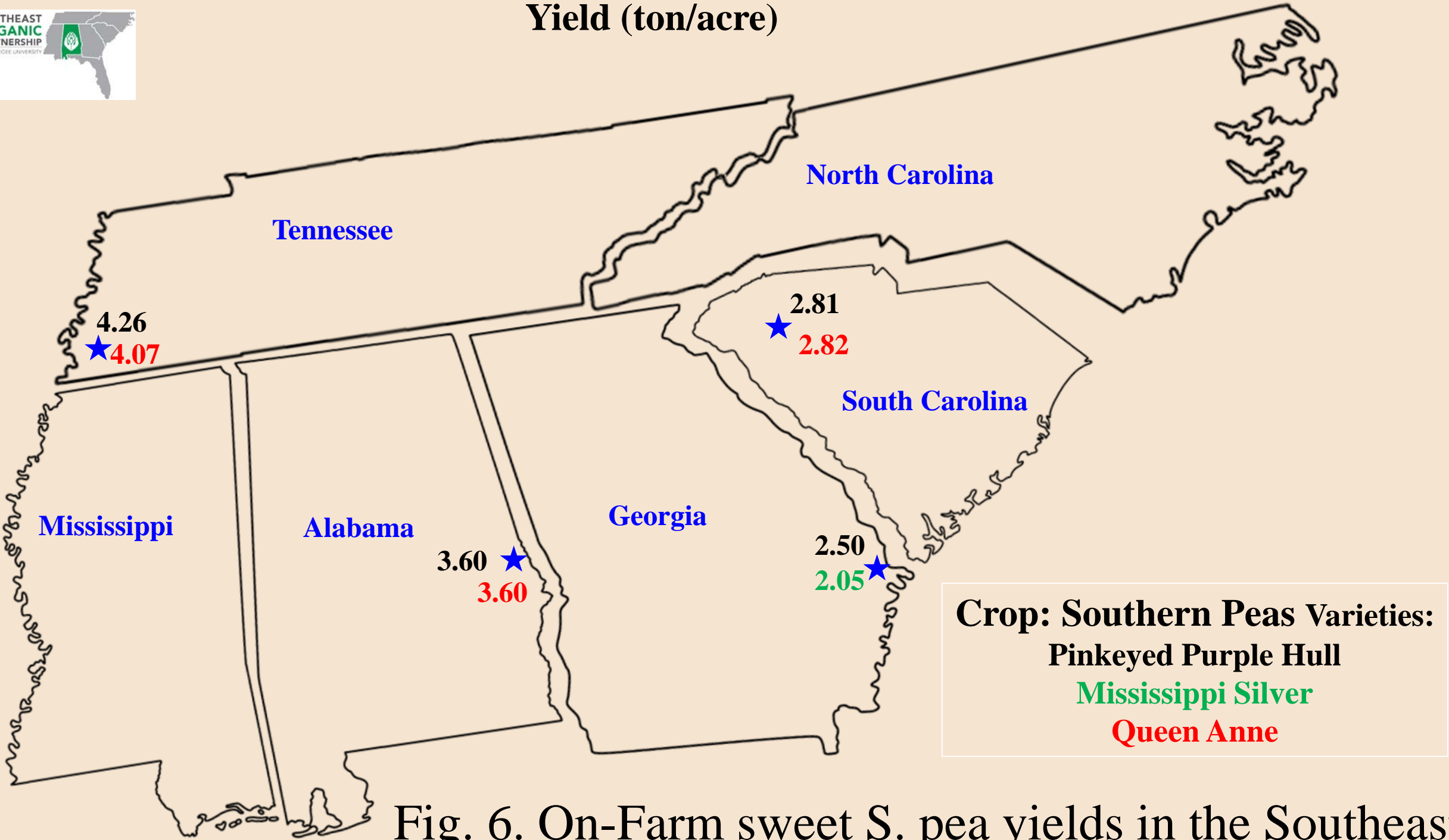


Fig. 6. On-Farm sweet S. pea yields in the Southeast.

# Squash yields



# Yield (ton/acre)

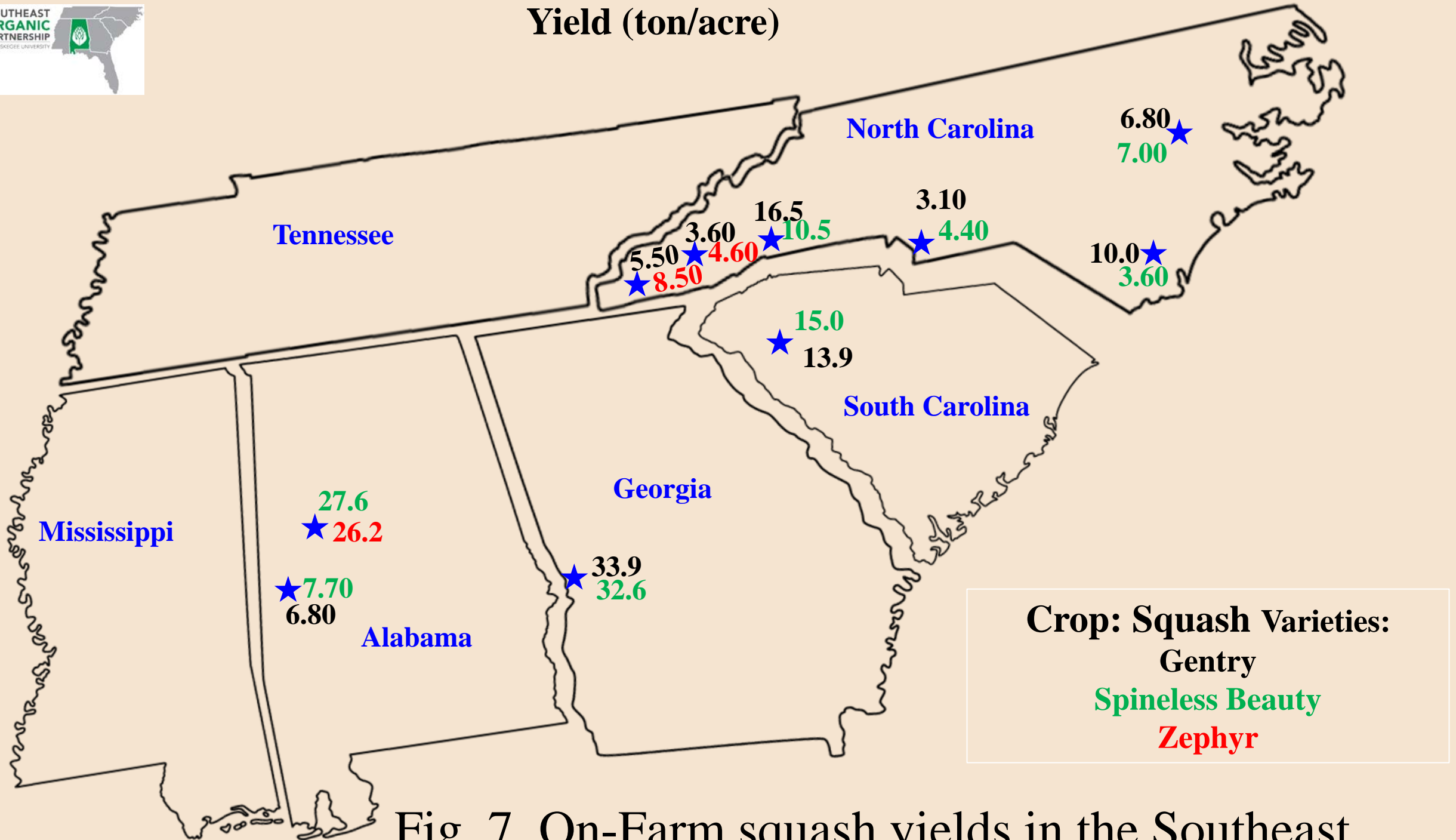


Fig. 7. On-Farm squash yields in the Southeast.



# Conclusions

- 1) We are still collecting data on these on-farm trials,
- 2) As we realized, yield variations depend not only on the crop varieties but also on the grower's ability to collect the data accurately,
- 3) Together with the on-going pesticide trials at experiment stations in Alabama, Mississippi, and North Carolina, we will be able to determine the best varieties for each location and near-by farmlands.