The effect of adjacent plant communities on the development of flower thrips populations in southern highbush blueberries in Florida

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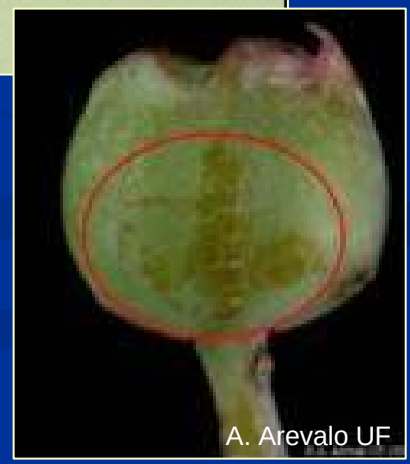
Southern Highbush Blueberries in Florida

- 2009 (USDA, 2010)
  - 6.4 million kg (14.1 million lbs)
  - 1295 ha (3200 acres)
  - Average of $11.89 per kg ($5.40 per lb)

Flower Thrips

- ~90% of thrips captured in FL blueberries are *Frankliniella bispinosa* (Morgan) (Arévalo, 2006)
- ~1 mm in length
- Bristle-like wings and “punch and suck” mouthparts
- Injury caused by feeding and oviposition



Many Thrips are Polyphagous

- Feeding vs. reproductive hosts
- *F. occidentalis* reproduces in weedy species in and around ornamental nurseries during spring and summer in Japan (Katayama 2006)
- Native vegetation around apple orchards supports *F. occidentalis* populations when apple trees are not flowering (Cockfield et al. 2007)

Objectives

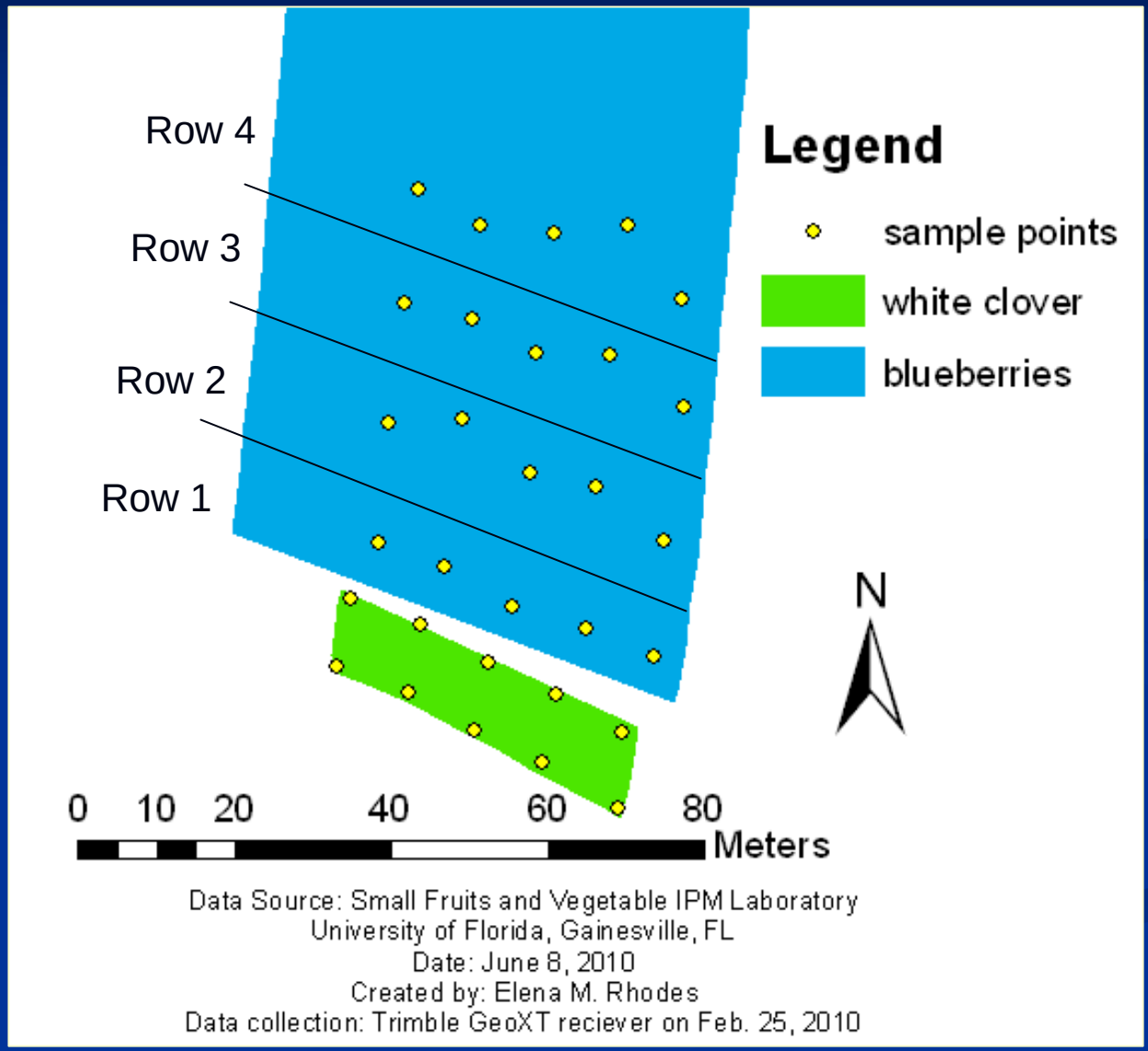
1. To examine thrips dispersal from alternate host plants into blueberry plantings

2. To determine the effect of weed control on thrips population levels

Objective 1

- To examine thrips dispersal from alternate host plants into blueberry plantings

Windsor Field Study 2010

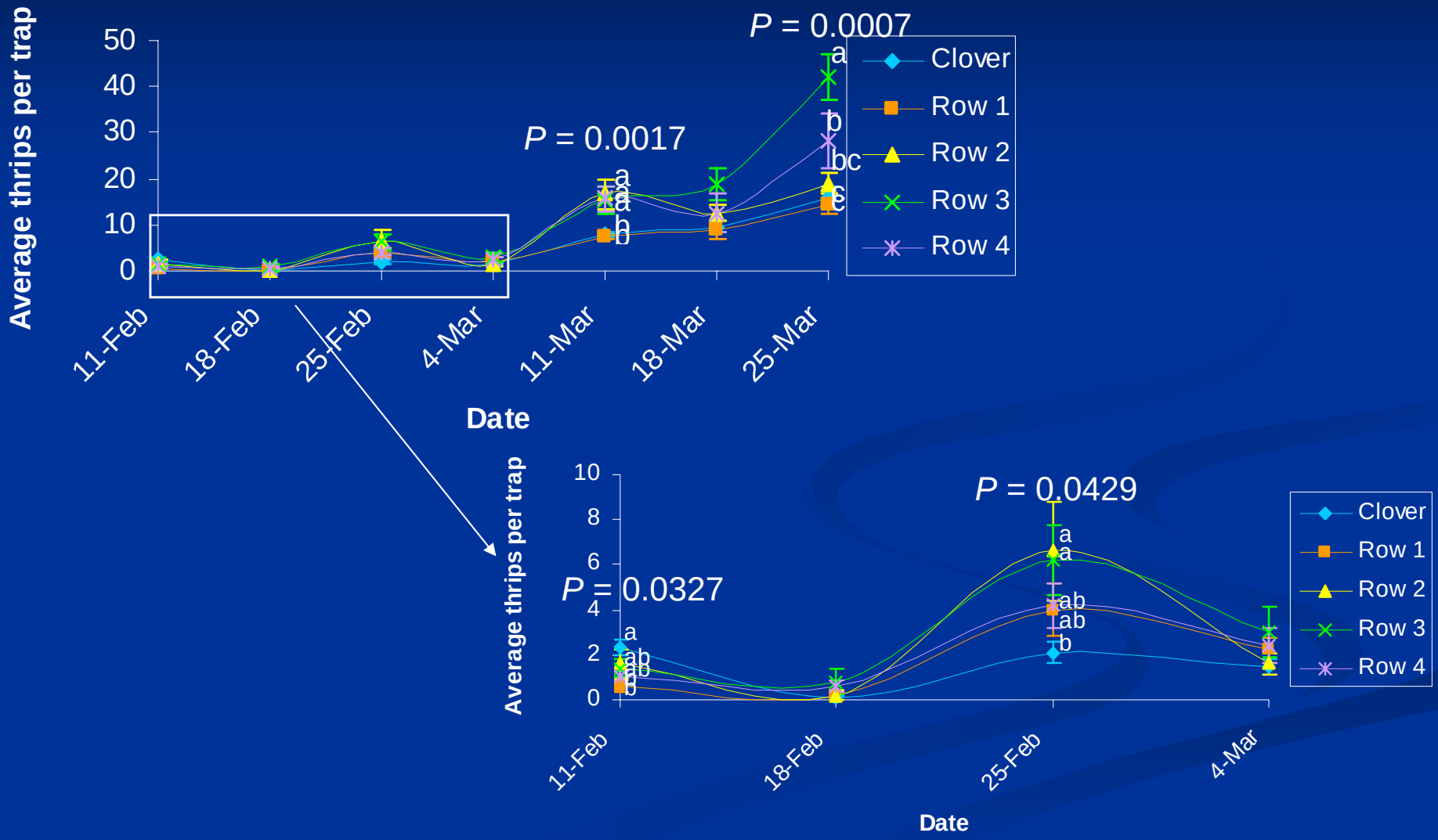


Thrips Sampling Methods

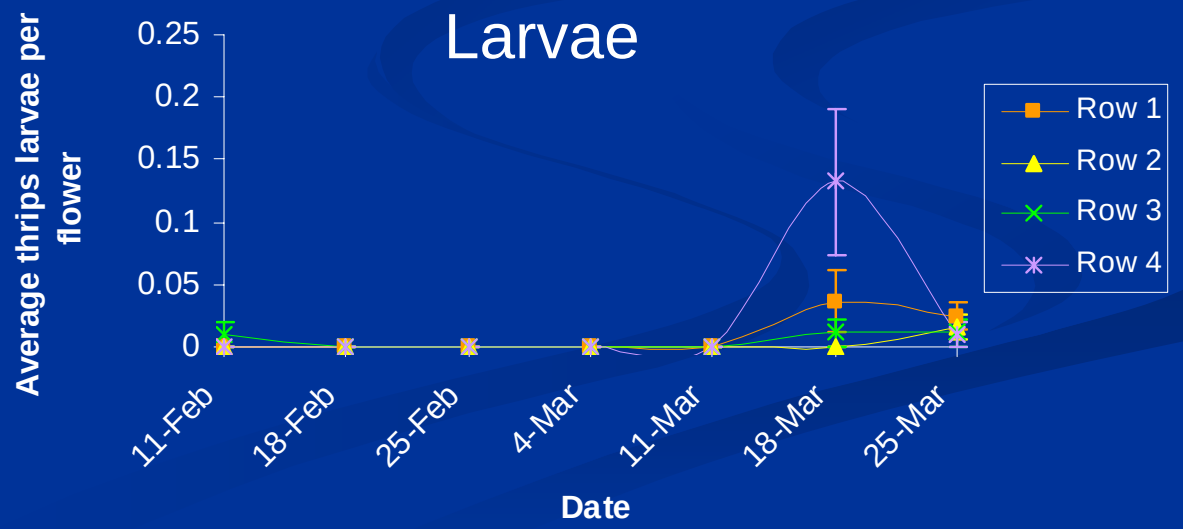
- White sticky traps
  - A total of 30 sticky traps were used
  - They were replaced weekly

- Flower Samples
  - 4 - 5 flower clusters (20 – 25 flowers) were collected weekly from the plant closest to each sticky trap

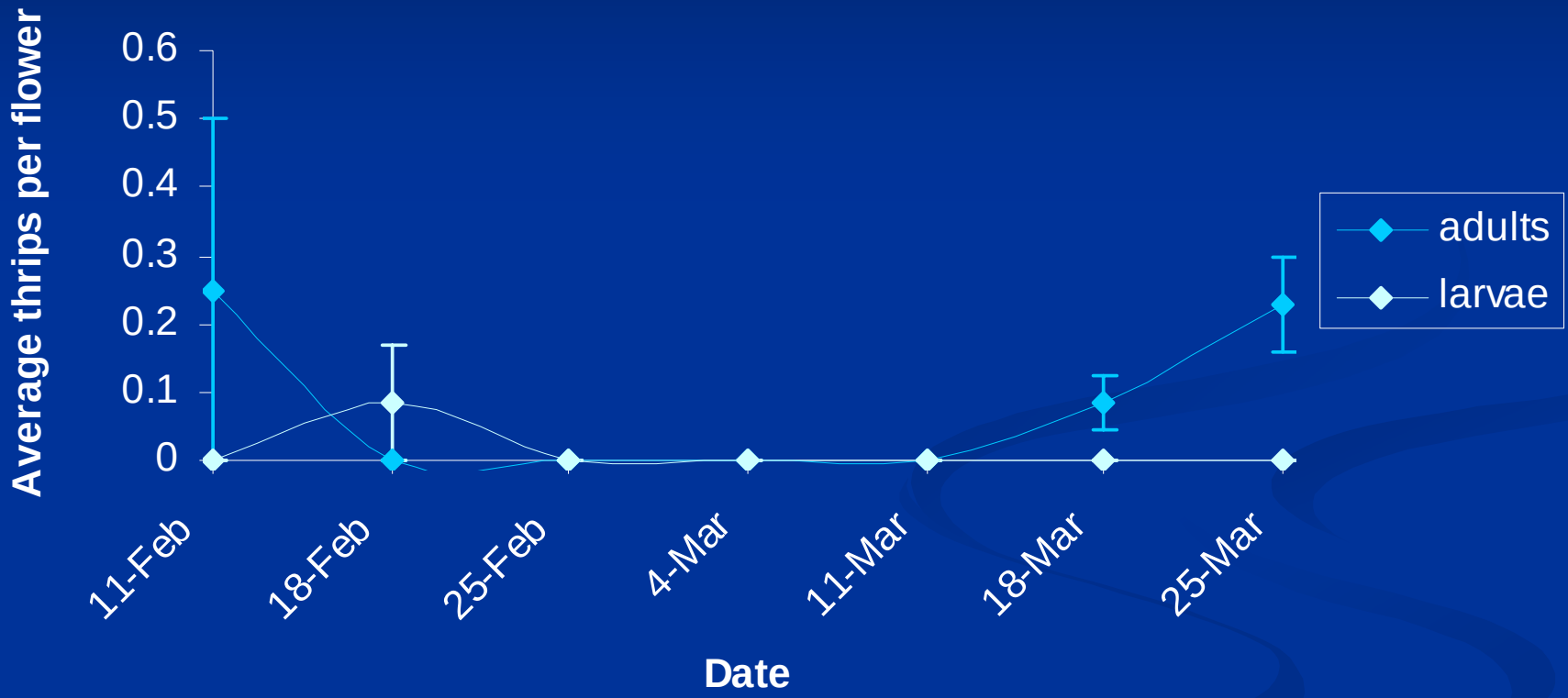
Results: Traps



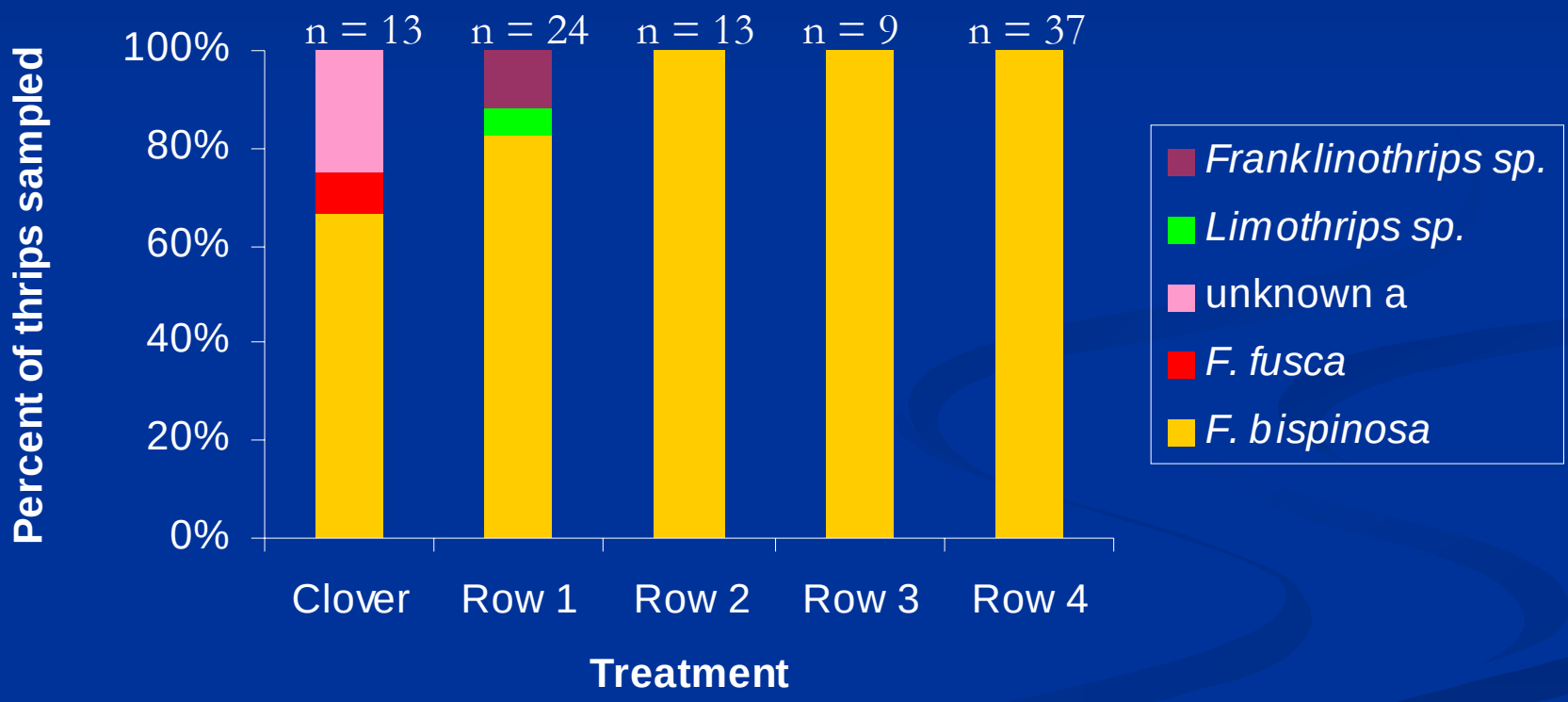
Results: Thrips per flower



Results: Thrips per clover flower



Results: Species ID



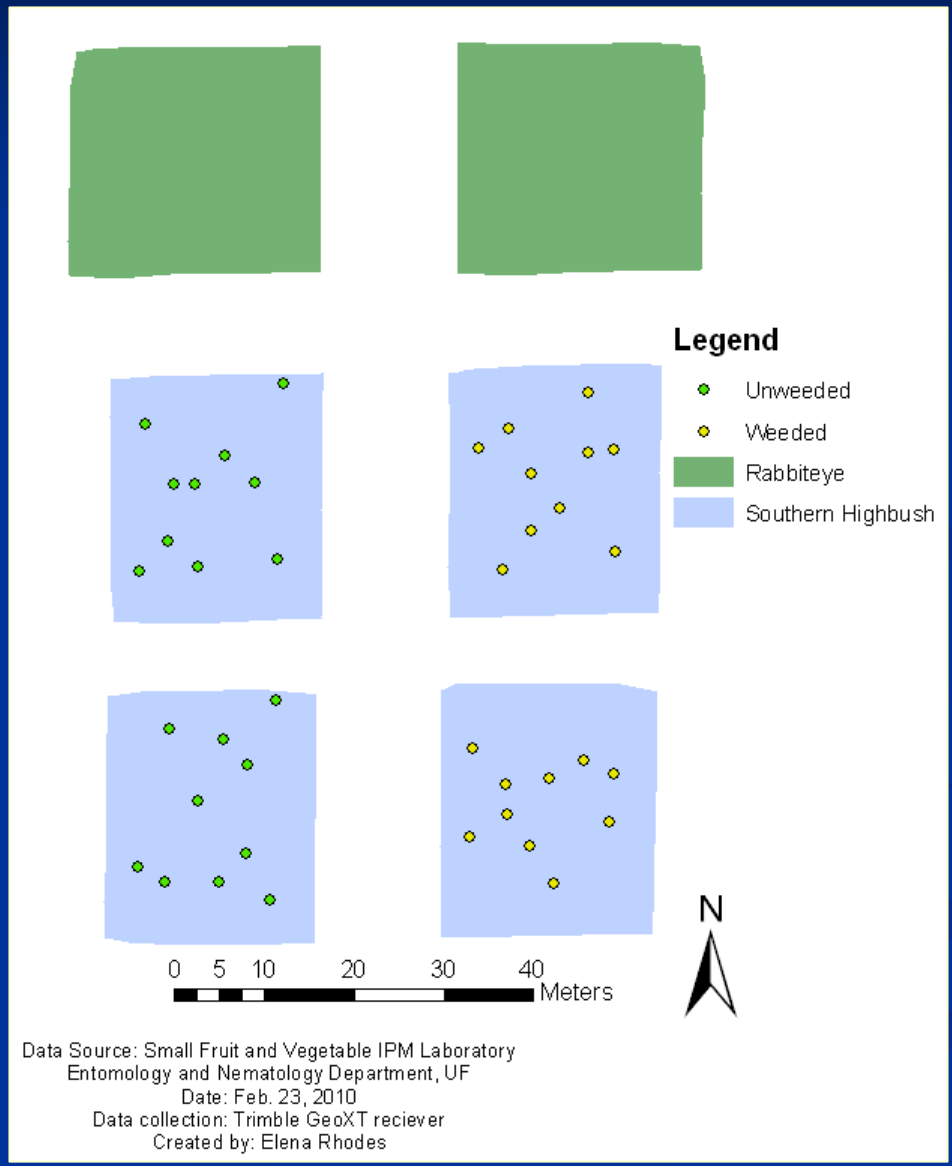
Discussion

- Clover does not appear to be a source of thrips in blueberries
- Other reproductive hosts need to be examined

Objective 2

- To determine the effect of weed control on thrips population levels

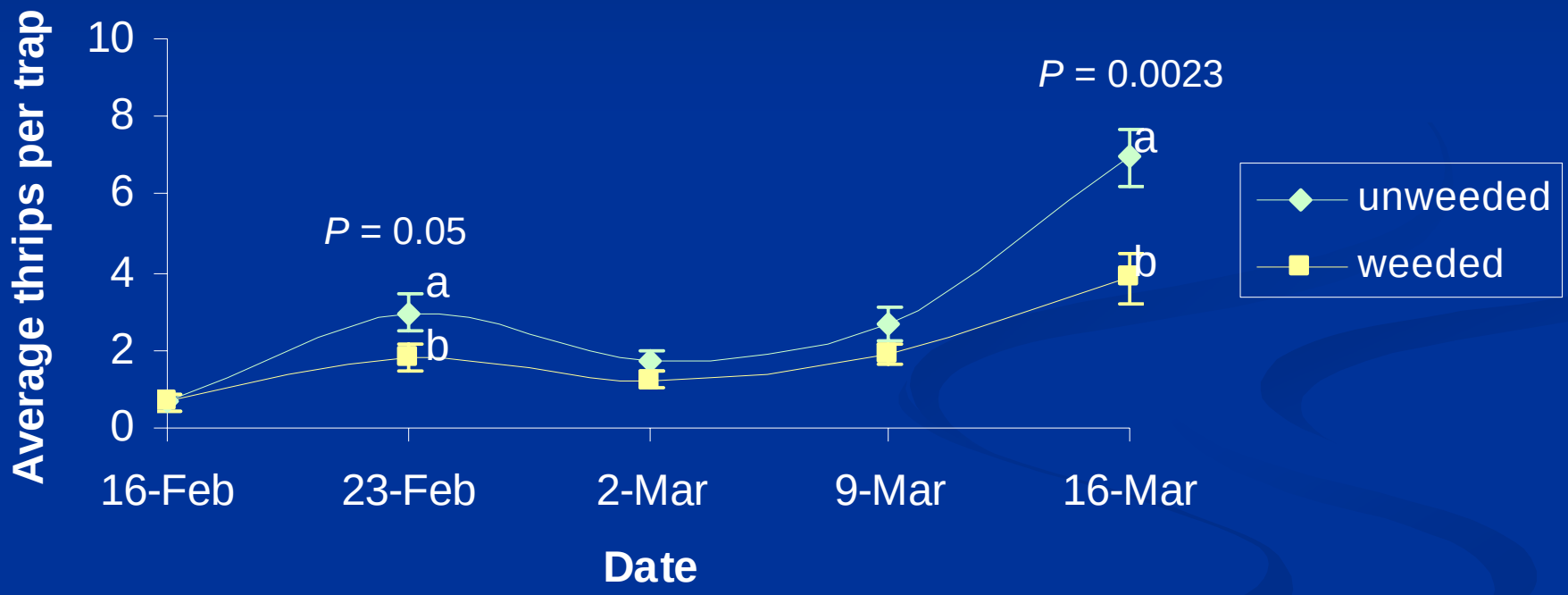
Citra PSREU Study 2010



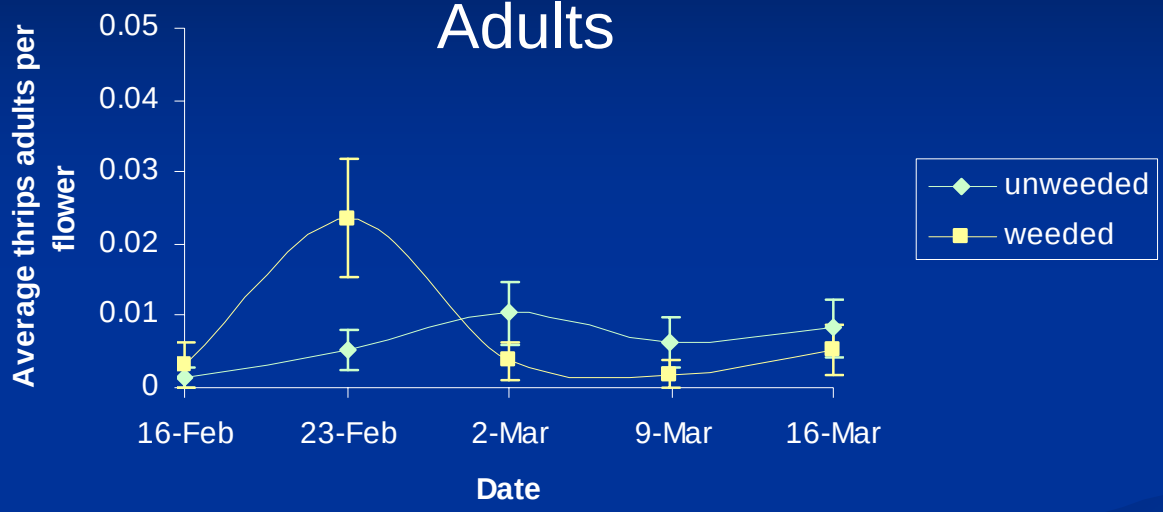
Sampling Methods

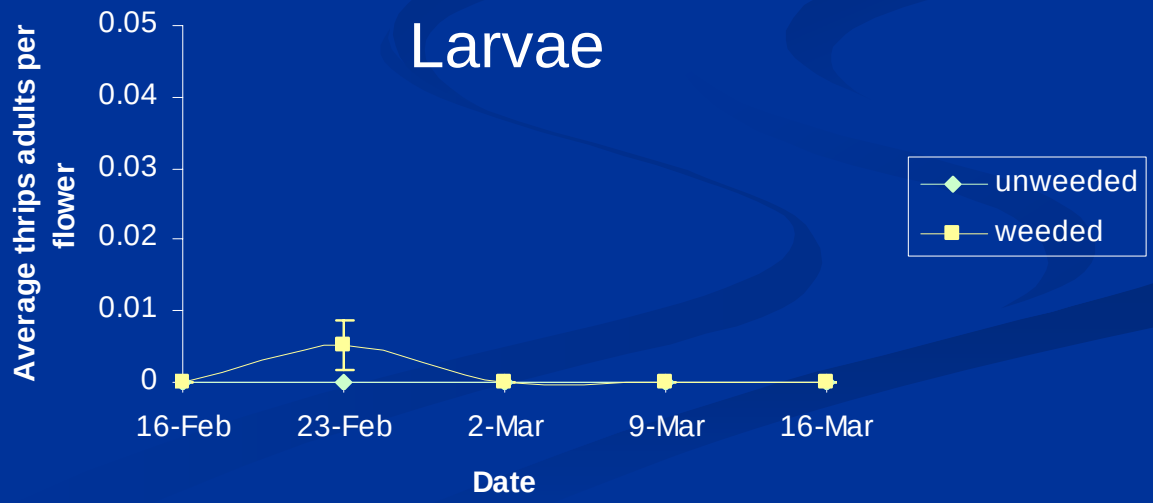
- Sticky traps
  - 20 per treatment
- Flower samples
  - 4 – 5 clusters per plant (~20-25 flowers)
- Yield
  - All ripe berries from each plant twice a week

Results: Traps

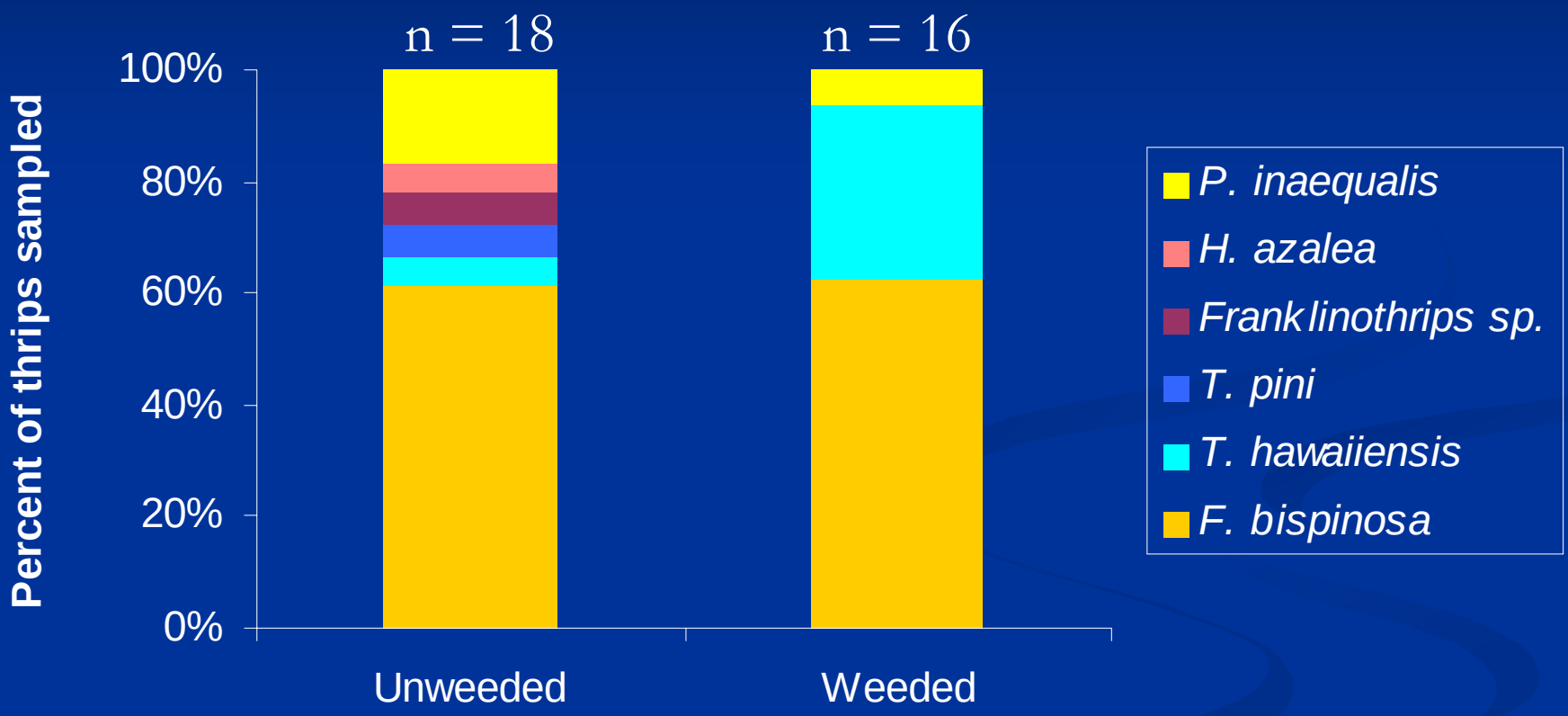


Results: Thrips per flower

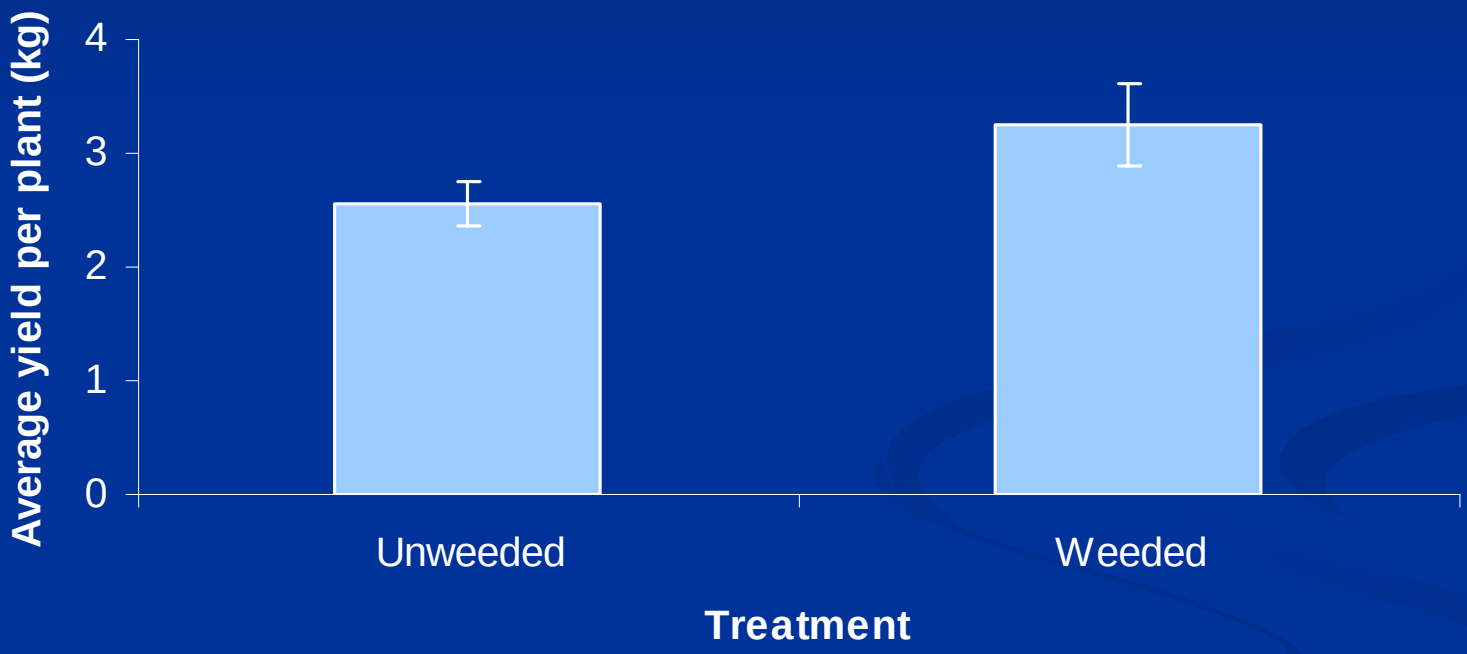




Results: Species ID



Results: Yield



Discussion

- Controlling weeds may reduce thrips numbers
- Further research needed when thrips numbers are higher

Summary

- White clover not a source for thrips in blueberries but other hosts need to be examined
- Weed control may be a viable thrips management tactic

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Questions?