# Old World Bollworm & Tomato Commodity Survey

## CAPS & Farm Bill 2023 Edition

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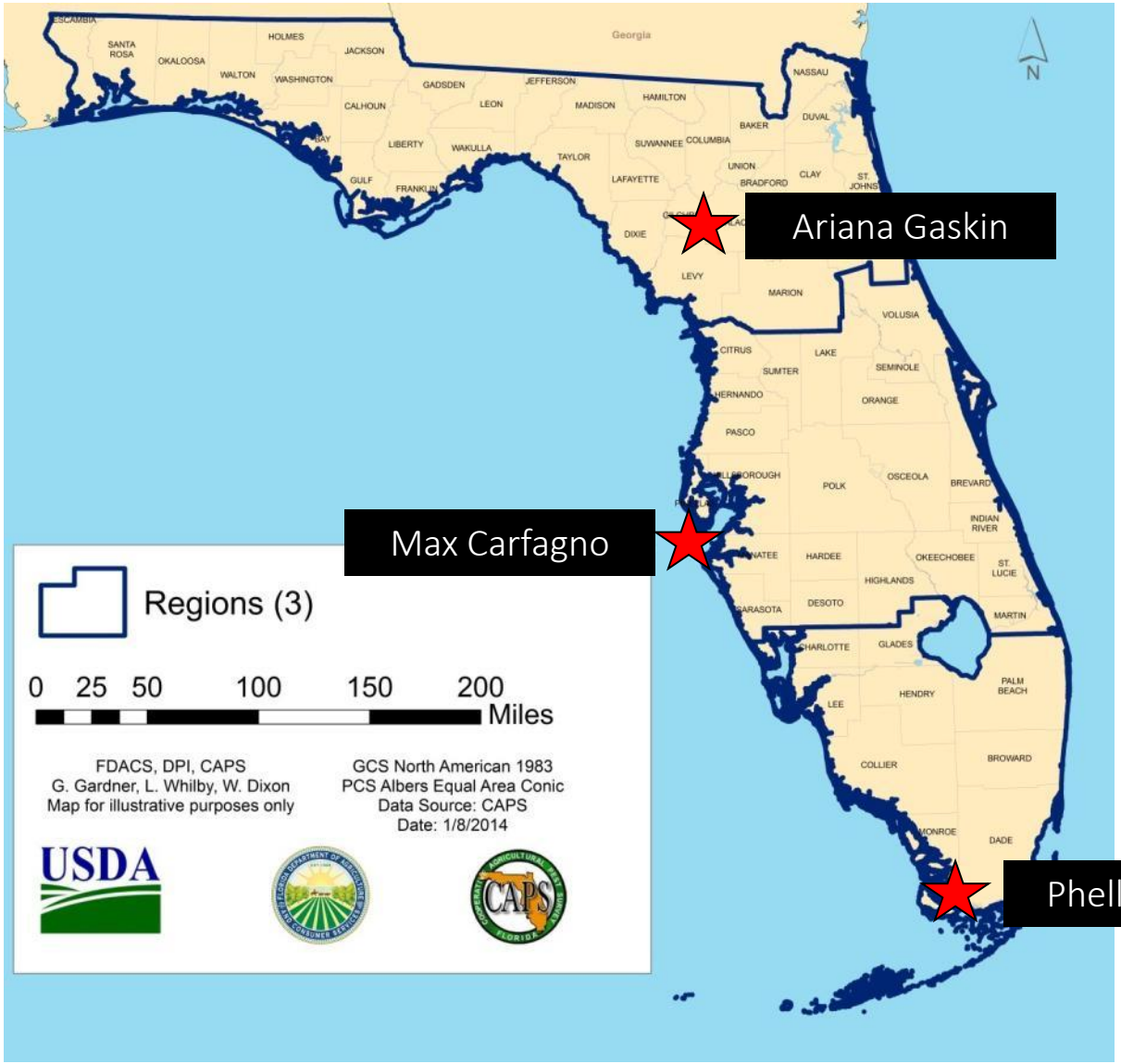
# Tomato Commodity in Florida: Facts and Figures

- Tomatoes are the 3rd most popular ‘vegetable’ in the US after potatoes and lettuce
- Florida ranks #1 in fresh tomatoes at 70% of the United States yield, ships over 1 billion pounds yearly
- Over 31,000 acres utilized for tomatoes with just as many pickers employed for harvest
- Total crop value each year exceeds $619 million

# TCS Regions and Surveyors



# Survey Sites

- Commercial fields
- Community gardens
- Public and private research fields
- Seed and seedling producers
- Tomato packing houses
- University arboretums
- Markets and roadside vendors
- Agricultural refuse piles

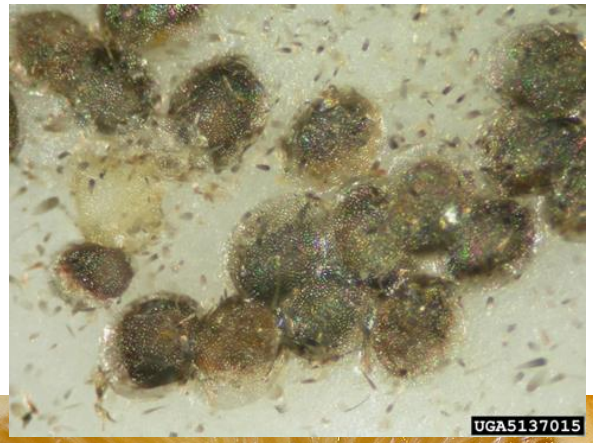
# Invasive Targets


- *Tuta absoluta*
- *Autographa gamma*
- *Neoleucinodes elegantalis*
- *Spodoptera litura*
- *Helicoverpa armigera*
- *Thaumatotibia leucotreta*
- *Bactericera cockerelli*
- *Chrysodeixis chalcites*

# *Thaumatotibia leucotreta*

*False Codling Moth*

- Largely contained within Africa, though occasional outlier sightings occur; first detection in US was 2008 in California
- Intercepted via produce sent to Europe
- Attacks fruits and vegetables directly, piercing surface and residing in core
- Miniscule and translucent eggs leave little indication of infestation





# *Neoleucinodes elegantalis*

*Tomato Fruit Borer*

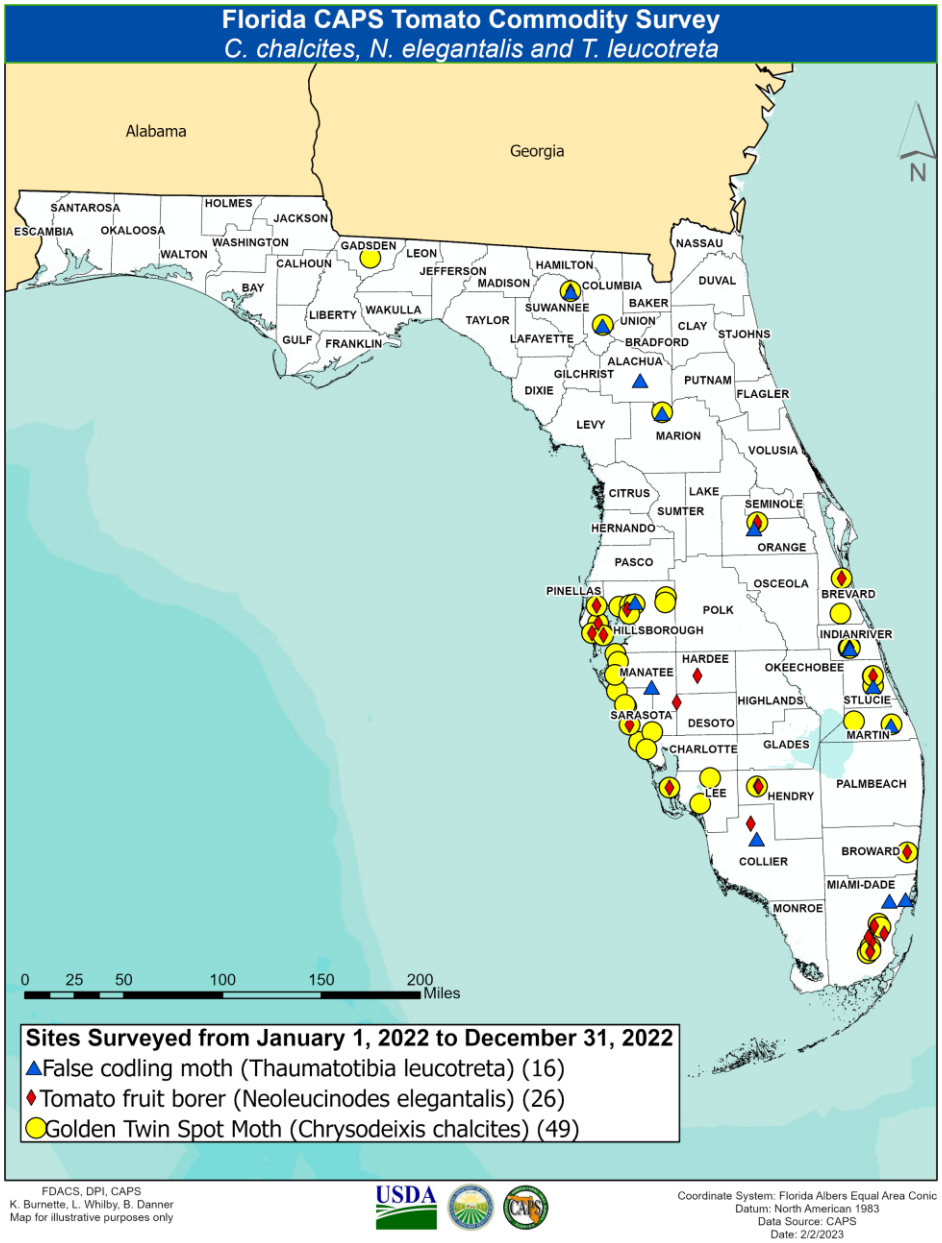
- Larval development happens entirely within the fruit, making pest treatment difficult
- Very distinct form and wing coloration makes identification easy
- Only species of its genus reported to occur in both warm and cold climates
- Nearly 1200 interceptions since 1984

# *Chrysodeixis chalcites*

*Golden Twin Spot Moth*

- Native across Northern region of Africa, established in Europe and the Middle East, has not gained foothold in Western Hemisphere
- Wide range of hosts include cotton, peanuts, cabbage, beans, peppers, cauliflower, banana, coffee, and tomato
- Will skeletonize entire leaves singlehandedly, but does not damage the fruit or vegetable body - *Chrysodeixis includens* similar
- Nearly 400 interceptions since 1984






*Thaumatotibia leucotreta*

*Neoleucinodes elegantalis*

*Chrysodeixis chalcites*

Not detected


# *Helicoverpa armigera*

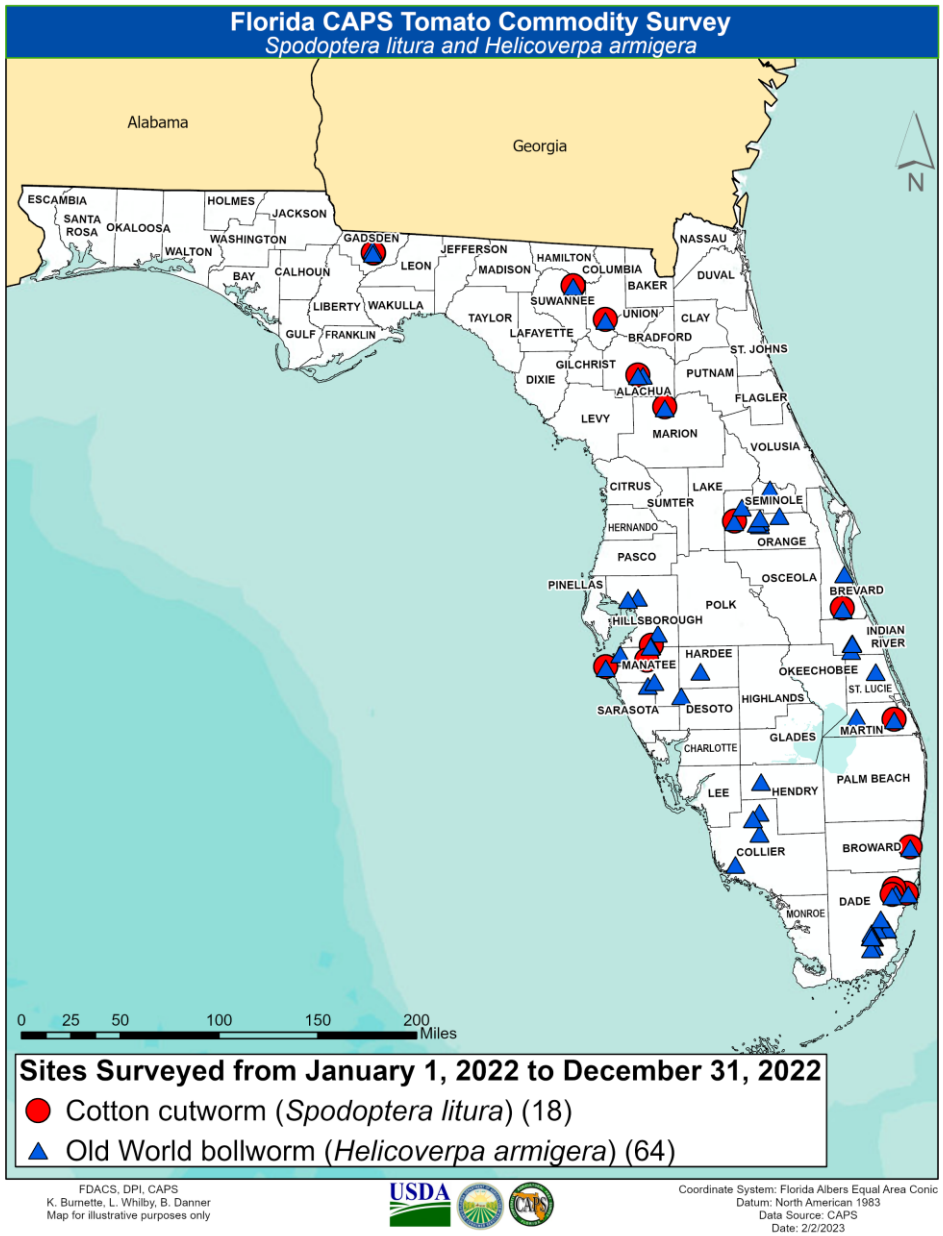
*Old World Bollworm*

- Targets the fruiting/seeding tips of cotton, preventing further growth
- Established presence in Caribbean countries is cause for concern
- Similar in appearance and physiology to the native *Helicoverpa zea*, requires dissection
- Over 4000 interceptions since 1985 across 150 countries, 1 in Manatee

# *Spodoptera litura*

*Cotton Cutworm*

- Native to a wide swath of Asia, from Afghanistan to Thailand
- Attacks leaf stems in groups, causing defoliation at the shoots
- Similar to species *Spodoptera androgea, frugiperda, eridania,* and *exigua,* close inspection required
- Over 1800 interceptions since 1985, 2 US detections in 2007 and 2014


FDACS, DPI, CAPS
K. Burnette, L. Whilby, B. Danner
Map for illustrative purposes only

USDA

Coordinate System: Florida Albers Equal Area Conic
Datum: North American 1983
Data Source: CAPS
Date: 2/2/2023

*Helicoverpa armigera*

*Spodoptera litura*

Not detected

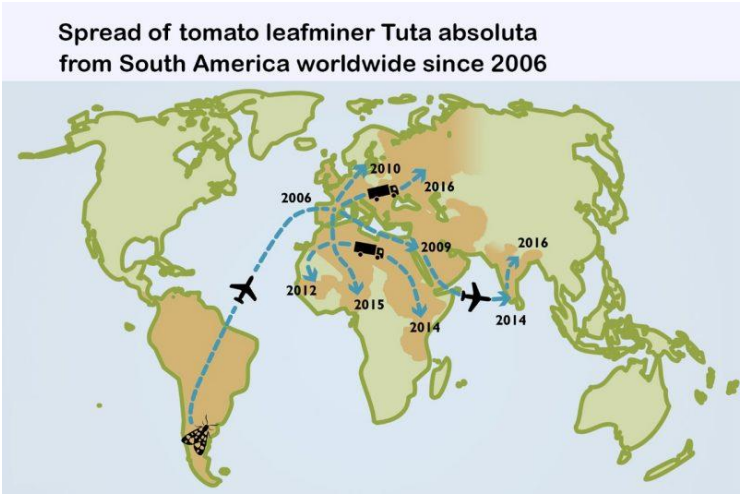
# *Autographa gamma*

*Silver Y*

- Named for distinct Y-shaped mark on its forewings

- Imported from Europe via cut flower industry
- Migratory in nature, covers a wide range of climates

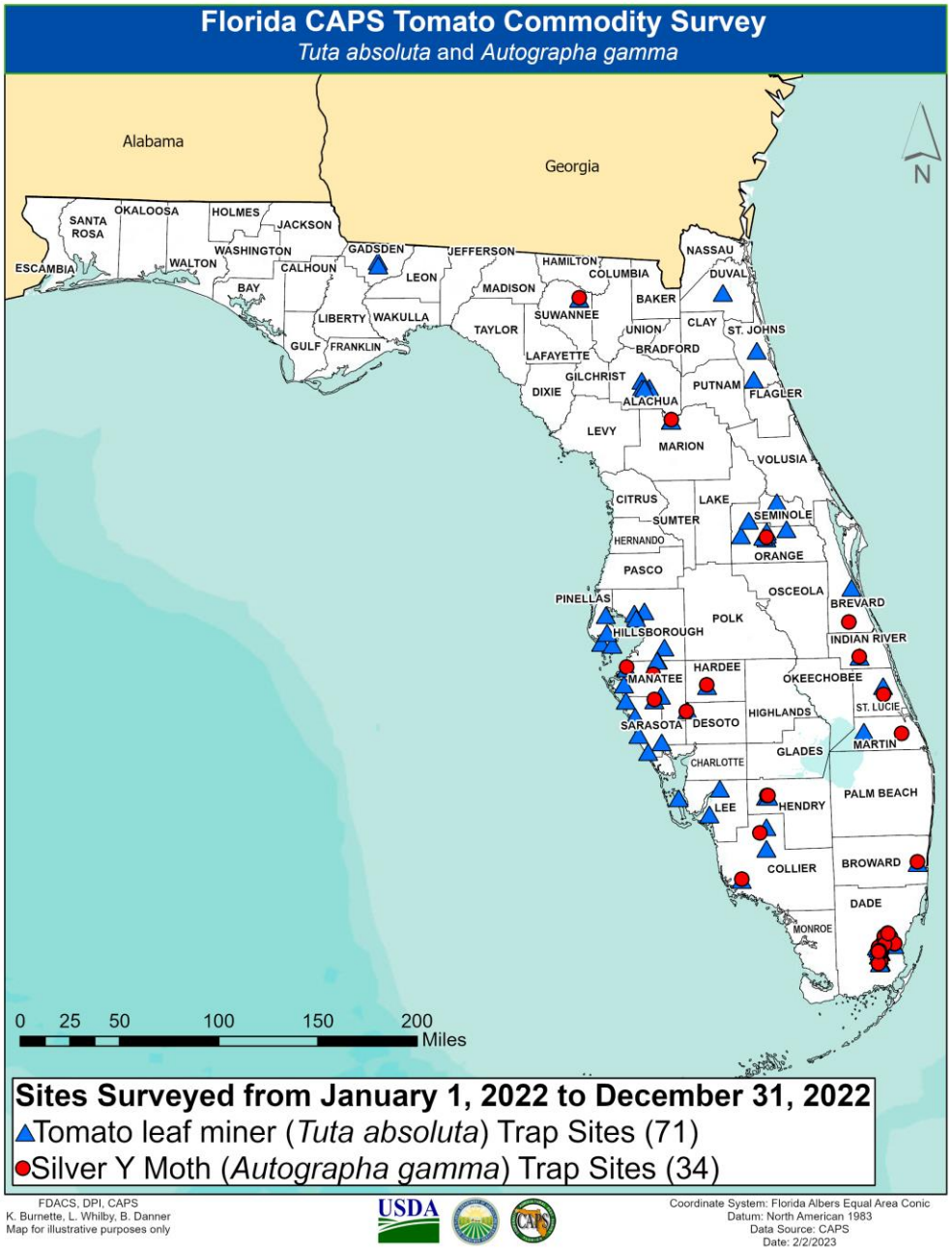
- Egg validity increases with moisture, making Florida a particular area of concern




# *Tuta absoluta*

*Tomato Leafminer*

- Named for tunneling behavior through leaves as larvae
- Species of Damsel Bug considered for biological control
- Traps most effective when placed near composting or waste disposal
- Small size makes identification difficult in the field
- 2 notable interceptions in Lebanon and India from baggage bound for US, from AQAS Database

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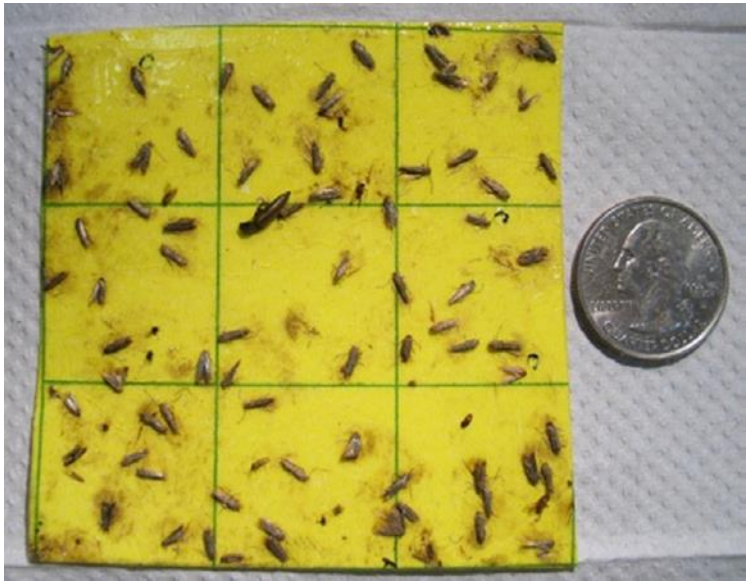


*Autographa gamma*

*Tuta absoluta*

Not detected

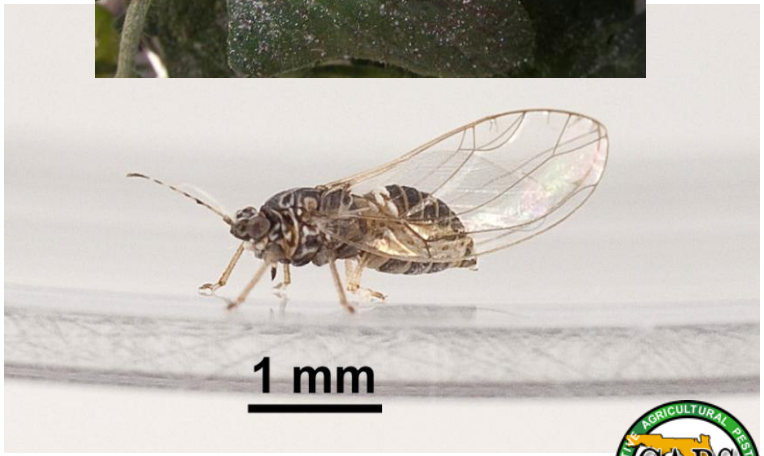
# *Bactericera cockerelli*

*Potato Psyllid*

- Native to American southwest, has begun moving east, introduced to Australia

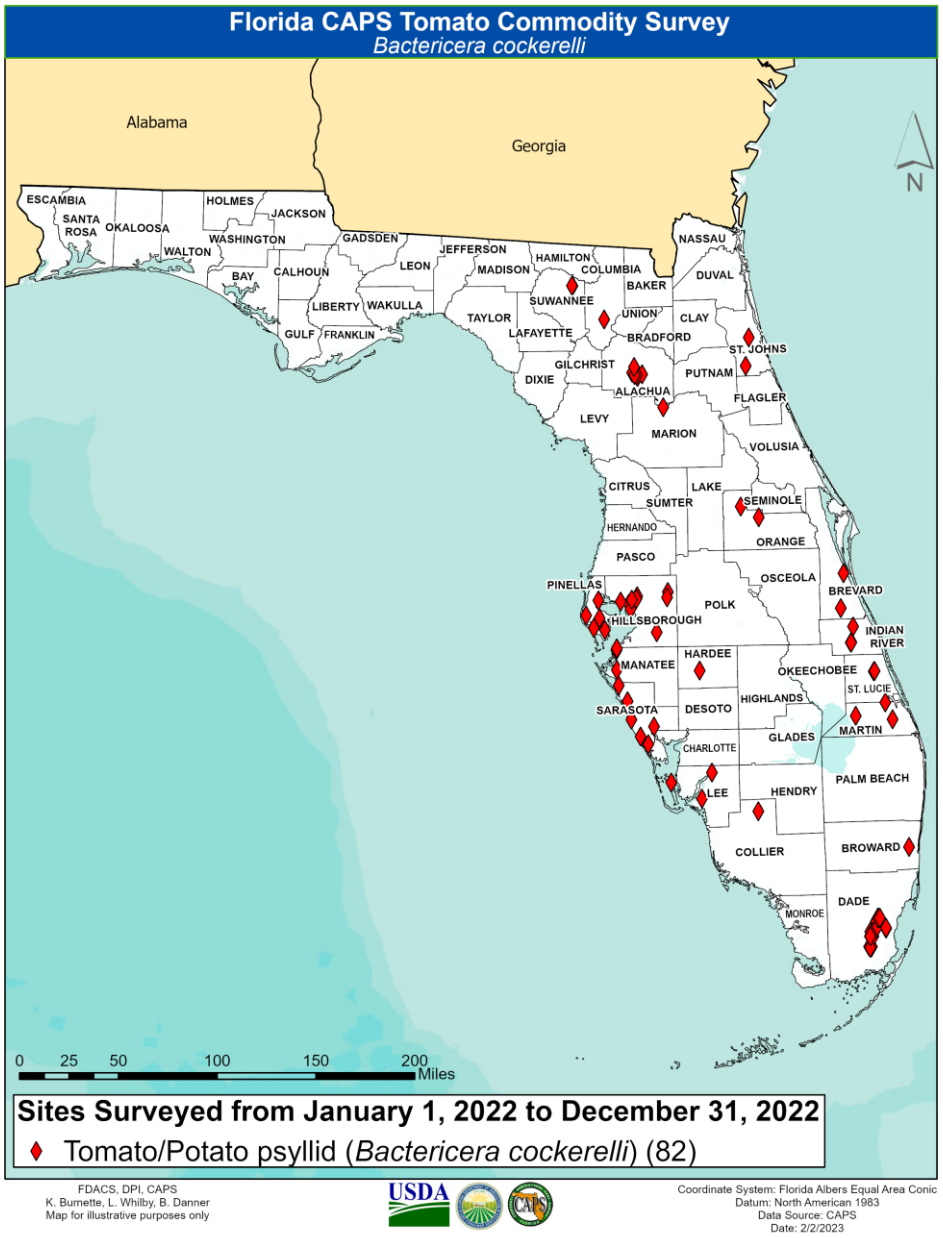
- Causes damage by feeding on phloem, much like aphids and thrips

- Named after favorite host, but will also target tomato




- Known to spread ‘Psyllid Yellows’ and ‘Zebra Chip’ among various bacterium

- Unique method of capture




*Bactericera cockerelli*

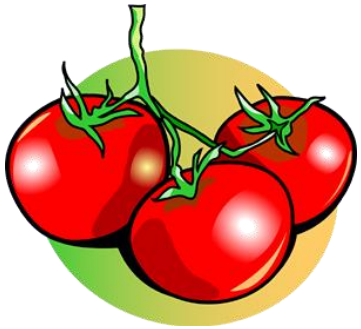
Not detected

…And now a word from Susan Halbert concerning future Psyllid threats…

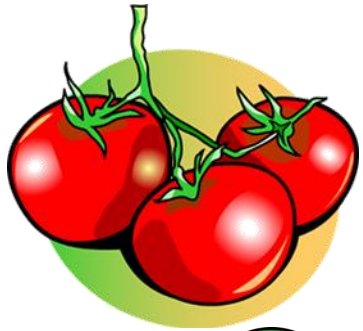
# 2022 Survey Results

| Target Species | Specimens Collected (Last Year) |
|---|---|
| *Helicoverpa armigera* | 696 (666) |
| *Tuta absoluta* | 15 (125) |
| *Chrysodeixis chalcites* | 168 (279) |
| *Spodoptera litura* | 11 (10) |
| *Neoleucinodes elegantalis* | 4 (29) |
| *Thaumatotibia leucotreta* | 44 (44) |
| *Bactericera cockerelli* | 4391 (3803) |
| *Autographa gamma* | 928 (N/A) |

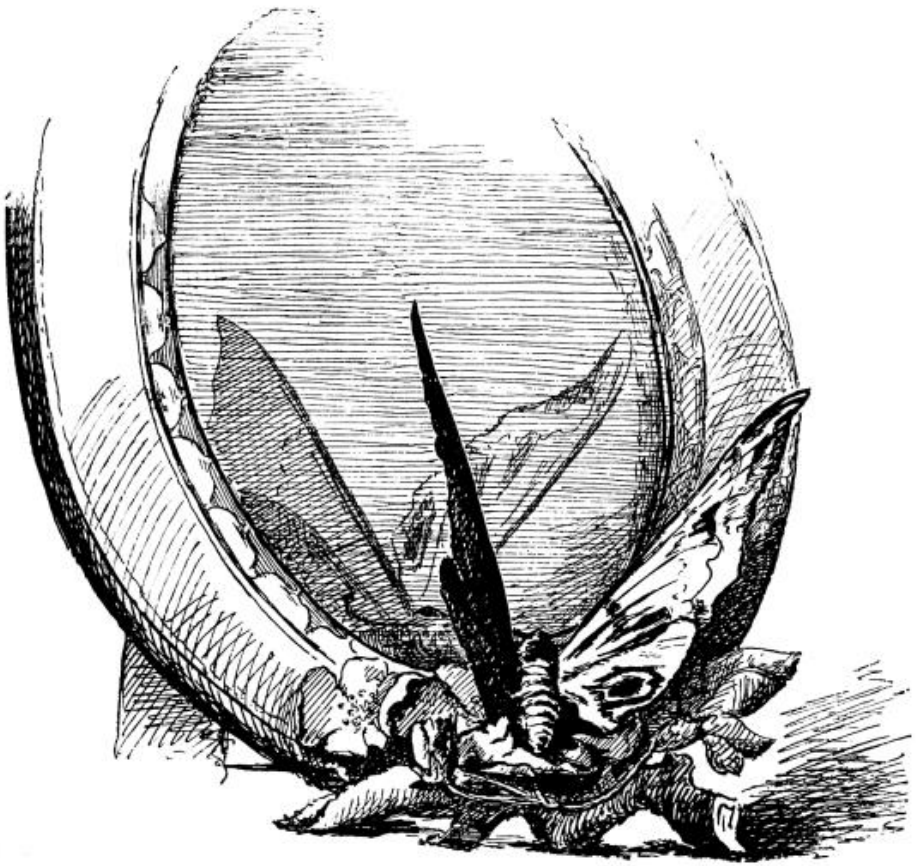
**327 Sites; 2550 Checks; 6257 Specimens collected; 0 Targets found**



| Records | Expanded Info |
|---|---|
| 16 New County Records | 3 pests entered into NAPIS,<br>13 non-pests unentered |



All records are from the 3D printed BC traps



No new program alterations planned at this time!




# Thanks for listening!

Special thanks to Cyndi Moncrief, Doug Restom Gaskill, Julieta Brambila and Kevin Burnette for the data/maps, and to Susan Halbert for the psyllid info!