Statewide insect pest monitoring for NC grapes

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What is the purpose of this project?

To develop baseline presence and abundance data for grape berry moth and three cornered alfalfa hopper in NC vineyards

To update information on presence and abundance of Pierce's Disease vectors

To conduct preventative in-crop monitoring for spotted lanternfly in grapes

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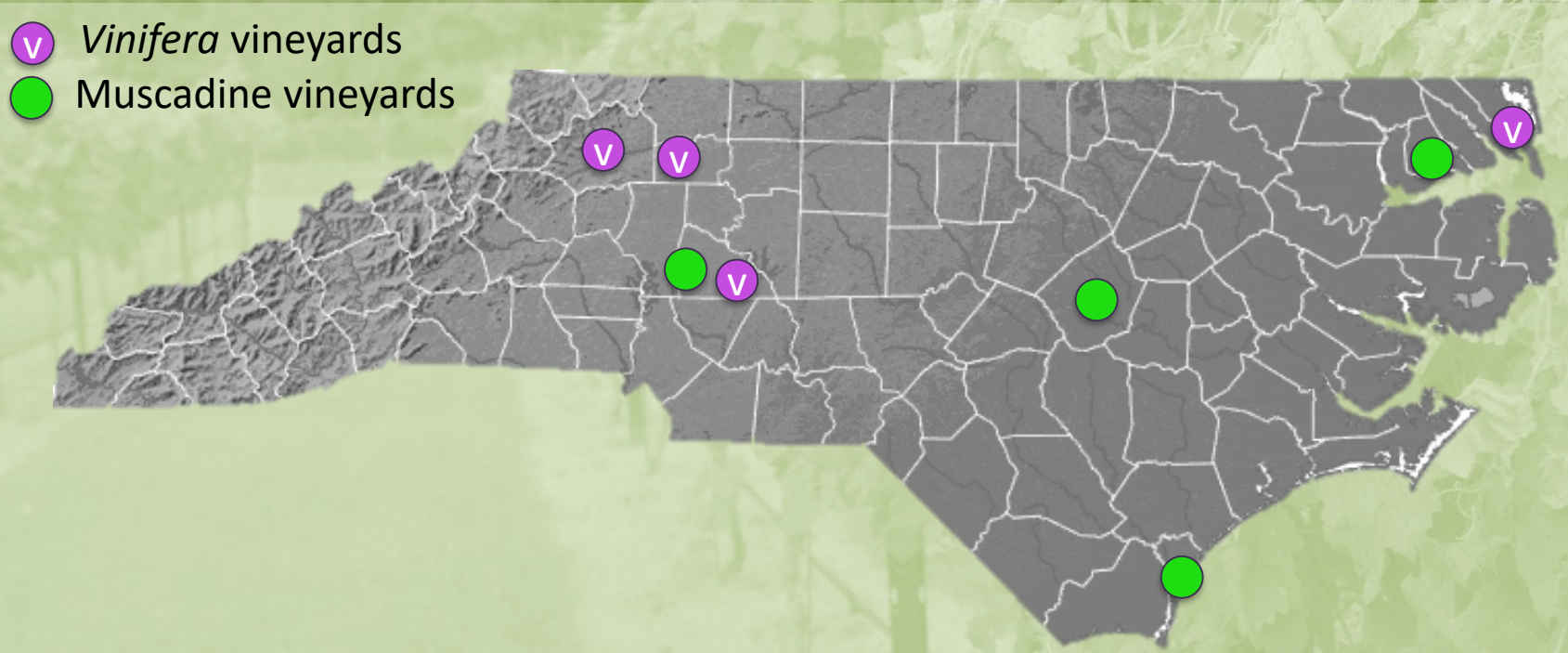
Where are we working?



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What methods are we using?

Sites visited weekly

Two transects of three monitoring sites each along (1) vineyard edge and (2) 6-8 rows into vineyard

Monitoring blocks selected for proximity to potential alfalfa hopper or SLF habitat

Scouting reports posted online at:
https://entomology.ces.ncsu.edu/tags/grape-insect-scouting-2019/

What are we monitoring?

Grape berry moth

Monitored with pheromone lures attractive males – Lures changed every 4 weeks

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An endemic but uncommon pest

Grape berry moth

Grape berry moth is considered a significant pest of grapes in VA and other eastern states, but damage is rarely reported in NC.

We want to understand if GBM is less problematic here or if we are underreporting damage.

What have we found so far?

GBM has been detected at our 4 western locations (1 muscadine, 3 vinifera) in very low densities

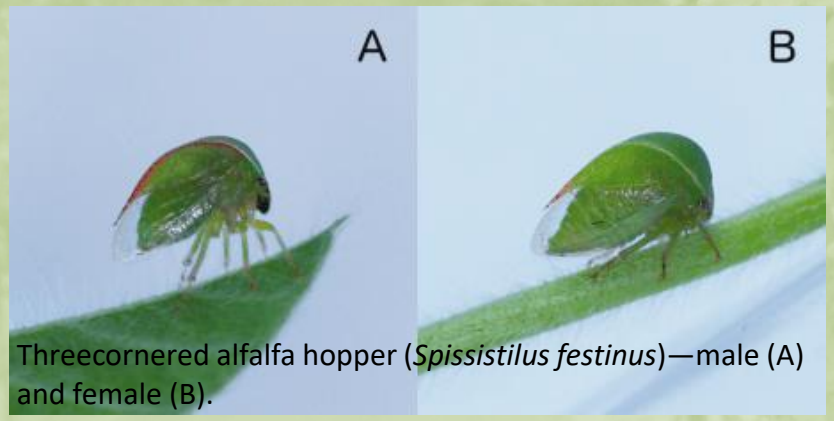
No GBM have been detected in the east thus far, and no crop damage has been observed

(Michigan State University photos)

What are we monitoring?

Three cornered alfalfa hopper

Emerging pest concerns
Three cornered alfalfa hopper



Threecornered alfalfa hopper (*Spissistilus festinus*)—male (A) and female (B).

- Likely 3 to 4 generation in NC
- Seasonal biology in NC grapes unknown
- Understanding when grapes are most likely to be infected is important for defining management programs

- Confirmed vector of grape red blotch-associated virus
- Overwinter as adults and can have multiple, overlapping generations

https://entomologytoday.org/2017/05/05/get-to-know-the-threecornered-alfalfa-hopper-a-maybe-serious-crop-pest/

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What have we learned so far?

We have determined that sticky traps are not an appropriate monitoring tool for alfalfa hoppers in grapes – sweep nets are more effective

We have also established collaborations to test alfalfa hoppers & G. versuta for GVBR via the NCSU MPU

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What are we monitoring?

Pierce's Disease vectors

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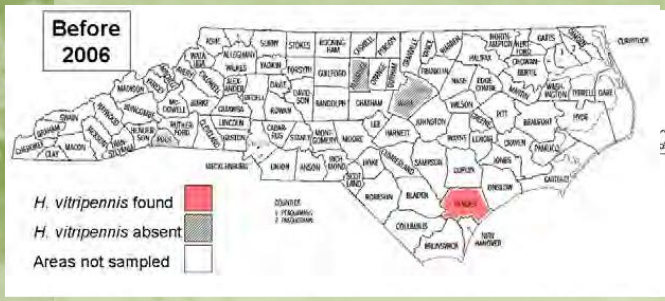
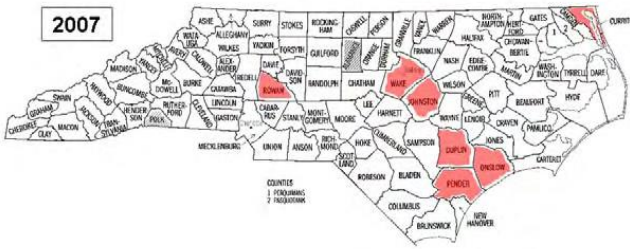
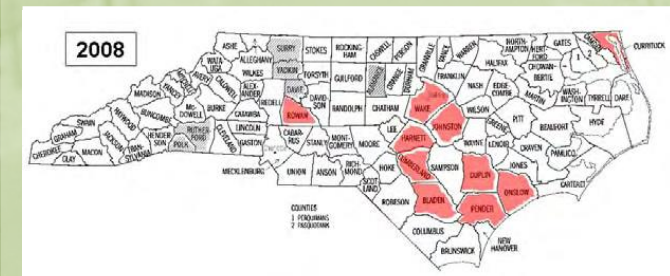
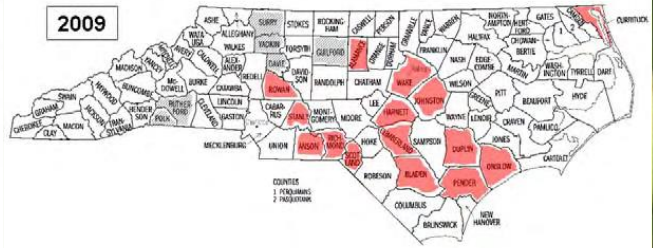
What have we learned so far?









We have confirmed GWSS in New Hanover and Perquimans Counties, areas not previously sampled

What are we monitoring?

Spotted lanternfly

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Invasive species of concern for grapes

Spotted lanternfly

Images via https://extension.psu.edu/spotted-lanternfly-grape-pest-alert

Coordinating with other projects

NDCA surveys will focus on Tree of Heaven (*Ailanthus altissima*), a preferred host of spotted lanternfly

Coordinating with other projects

https://projects.ncsu.edu/goingnative/howto/mapping/invexse/treeofhe.html

https://extension.psu.edu/spotted-lanternfly-on-grapes-and-tree-fruit

NDCA survey at locations in Duplin (2), Surry (5), Yadkin (3), Wilkes (3), Rockingham (1), Davidson (1), Polk (1), Buncombe (2), and Jackson (2) Counties in addition to the locations we are monitoring

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