

# Insect Pest Update 2021

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# VITICULTURE MANAGEMENT

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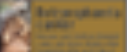
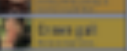
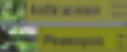


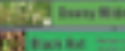

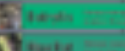

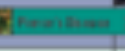


## CULTURAL PRACTICES

Produce a productive vineyard requires thoughtful, profitable, and sustainable techniques and quality vineyard cultural management. Effective practices must be implemented early in the growing cycle to ensure maximum and efficient vineyard gain.

1	2	3	4	5	6	7	8	9	10	11	12	13
<b>DORMANT</b>	<b>BUD SWELL</b>	<b>BUD BREAK</b>	<b>PRE-BLOOM</b>	<b>BLOOM</b>	<b>FRUIT SET</b>	<b>BB-SIZED FRUIT</b>	<b>PEA-SIZED FRUIT</b>	<b>BERRY TOUCH</b>	<b>BUNCH CLOSURE</b>	<b>VERACON</b>	<b>PREHARVEST</b>	<b>HARVEST</b>
												
<b>CANE AND SPUR PRUNING</b>		<b>SHOOT TRAINING</b>		<b>CANOPY</b>	<b>LEAF REMOVAL</b>				<b>LEAF REMOVAL</b>	<b>CANOPY RELAXING</b>	<b>LEAF REMOVAL</b>	<b>HARVEST</b>
												
		<b>FRUIT DAMAGE</b>		<b>SHOOT POSITIONING</b>								
												

## DISEASES

Reduce vineyard disease pressure to increase grape yield and quality. Implement a disease management program throughout the year to maximize vine health.

DORMANT	BUD SWELL	BUD BREAK AND BUDSWELL PERIOD*	PRE-BLOOM	BLOOM	POST-BLOOM*	FRUIT SET*	EARLY-GROW SPURS*	BERRY TOUCH AND BUNCH CLOSURE*	LATE-GROW SPURS*	VERACON	PREHARVEST	POSTHARVEST*
												
												
												
												
												
												
												
												
												
												
												
												

## INSECTS

Keep vineyard free of insect damage to maximize grape yield and quality. Implement an insect management program throughout the year to maximize vine health.

DORMANT	BUD SWELL	BUD BREAK AND BUDSWELL PERIOD*	PRE-BLOOM	BLOOM	POST-BLOOM*	FRUIT SET*	EARLY-GROW SPURS*	BERRY TOUCH AND BUNCH CLOSURE*	LATE-GROW SPURS*	VERACON	PREHARVEST	POSTHARVEST*
												
												
												
												
												
												
												
												
												
												
												



SRSFC Activities ▾

Crops ▾

Regional Experts

IPM/Production Guides

County Agent Training

Weather



## IPM/Production Guides

*Last updated Friday 5 January 2018 8:9 GMT*

### Blueberries

[Southeast Regional Blueberry Integrated Management Guide](#)

[Southeast Regional Blueberry Horticulture and Growth Regulator Guide](#)

[Southeast Regional Organic Blueberry Pest Management Guide](#)

### Bunch Grapes

[Southeast Regional Bunch Grape Integrated Management Guide](#)



### Caneberries

[Southeast Regional Caneberries Integrated Management Guide](#)

[Southeast Regional Caneberry Production Guide \(PDF\)](#)

[Southeast Regional Caneberry Production Guide \(Online Version\)](#)

### Muscadines

[Southeast Regional Muscadine Grape Integrated Management Guide](#)



### Strawberries

[Southeast Regional Strawberry Integrated Pest Management Guide](#)

[Southeast Regional Strawberry Plasticulture Production Guide](#)

[Fungicide Selection for Botrytis and Anthracnose Fruit Rot Management 2017](#)

# Common Grape Pests

1. Grape flea beetle



2. Grape phylloxera



3. Grape mealybugs



4. Thrips



5. Leafhoppers / sharpshooters  
(for Pierce's disease)



6. Grape berry moth



7. Mites



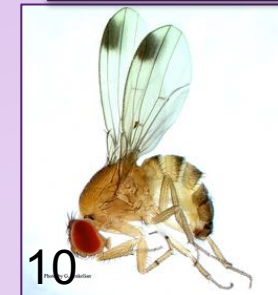
8. Japanese beetles



9. Grape root borer



10. Spotted wing drosophila



# Japanese Beetles



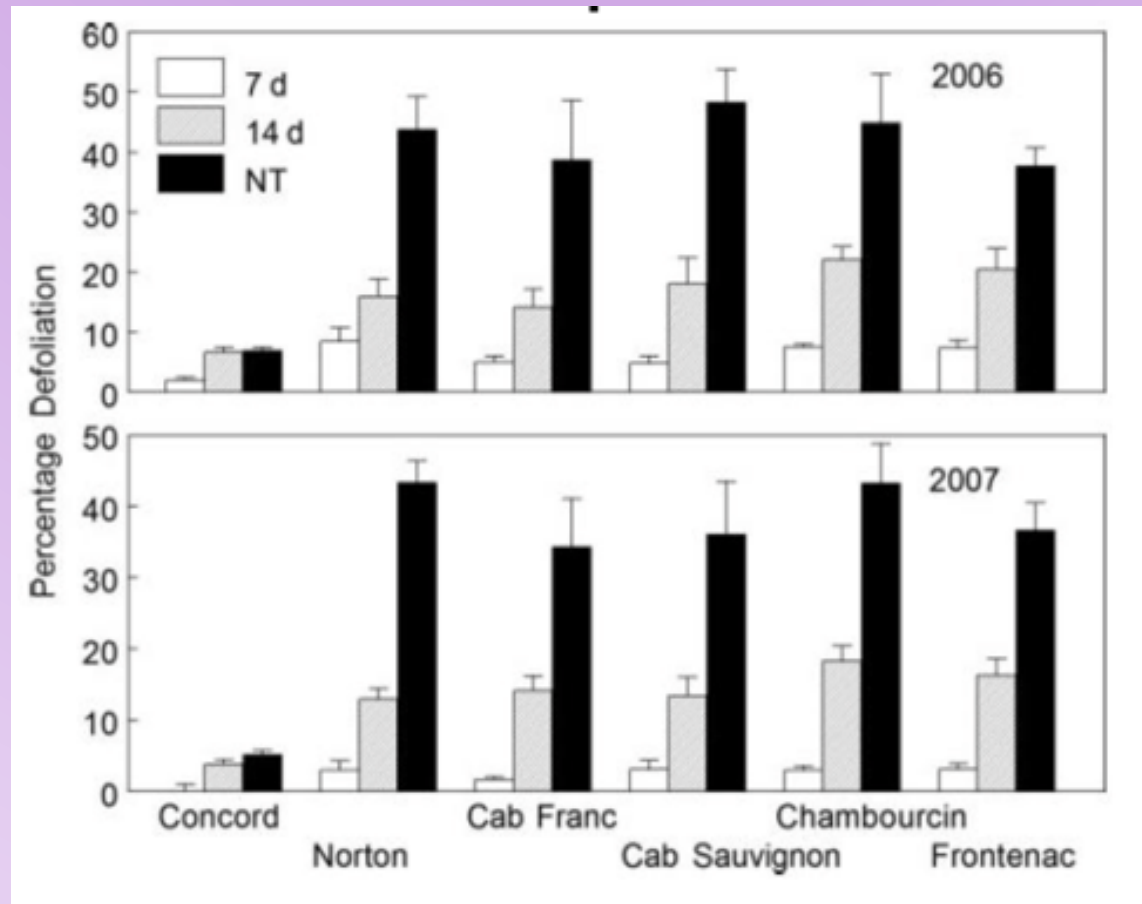
# Japanese beetles

- Adults are shiny green with copper-colored elytra
  - Overwinter as white, C-shaped grubs
- Can be severe pest of grape during the summer
  - Skeletonize leaves, rarely feeding on berries
  - Gregarious; present in great numbers on a few vines
  - Feeding concentrated in the upper part of the canopy
  - Feeding **after veraison** may impact fruit quality
- Monitoring:
  - General thresholds
    - Manage at about **15% of the leaves damaged**
    - Or damage is found **below top trellis wire**



# Japanese beetle management

- Insecticides will reduce defoliation



# Japanese beetle management



## Cover sprays Peppercorn to veraison

Trade Name	Active Ingredient; IRAC	Efficacy
<b>Sevin XLR Plus</b>	carbaryl; 1A	++++
<b>Imidan 70W</b>	Phosmet; 1B	+++
<b>Malathion 8F</b>	malathion; 1B	++
<b>Assail 70WP</b>	acetamiprid; 4A	+++
<b>Avaunt</b>	indoxacarb; 22	+++
<b>Neemix 4.5 + Trilogy</b>	azadirachtin + neem oil	+++



# Grape Root Borer



# Grape root borer

- Adult moths resemble wasps
- Each female lays an average of 300 eggs
  - Only 1.5-2.7% survive
  - Larvae drop to the ground and tunnel into roots
  - The life cycle takes two years to complete
  - Full-grown larvae are about 1 in long, white, and have brown heads
  - Adults emerge from soil in early summer
- Damage reduces the productivity of the vine
  - Roots may be hollowed
  - A lack of plant vigor is usually the first sign
  - Vines eventually die

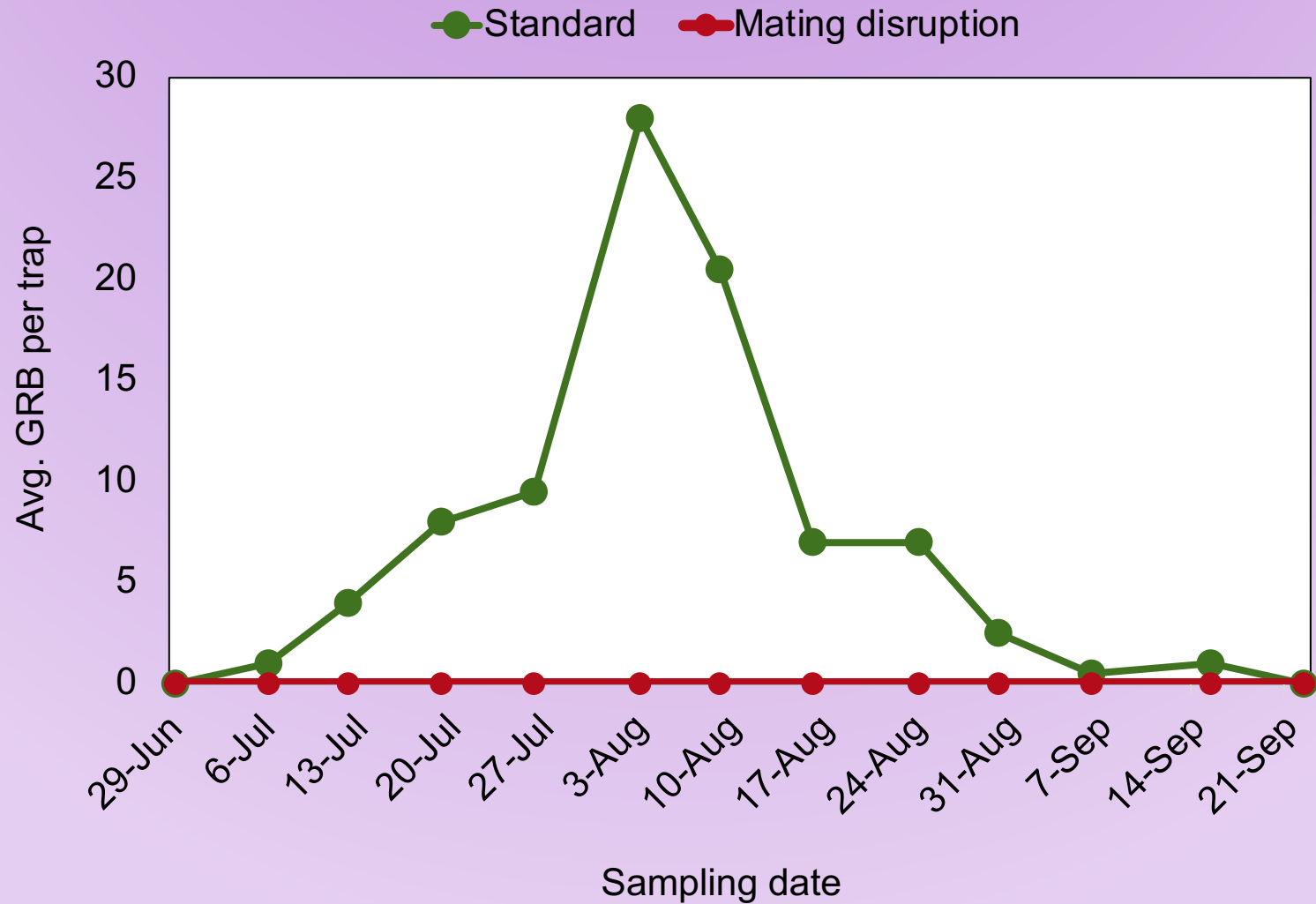


# Grape root borer monitoring

- Bucket trap and pheromone
  - 1 trap per 2 acres
  - Begin mid-June
  - Check traps weekly
- Check for pupal casings at vine base



# Grape root borer activity



# Grape root borer management



**Mid-May to Early-June**

Trade Name	Active Ingredient; IRAC	Efficacy
<b>Isomate GRB</b>	pheromone; mating disruption	++++



# Grape root borer management



**Mid-May to Early-June**

Trade Name	Active Ingredient; IRAC	Efficacy
<b>Isomate GRB</b>	pheromone; mating disruption	++++



**Pre-harvest  
at least 35 days**

Trade Name	Active Ingredient; IRAC	Efficacy
<b>Lorsban</b>	chlorpyrifos; 1B	++

# Potential alternative management technique

- Entomopathogenic nematodes
  - *Steinernema feltiae* → commercially available
  - Attack larvae in soil



# Leafhoppers/Sharpshooters





# Leafhoppers / sharpshooters (for Pierce's disease)

- Small with piercing-sucking mouthparts
  - Feed upon xylem or phloem tissue
  - Often cryptic in coloration – hard to observe
  - Adults are expert jumpers and strong flyers
- Potential to vector
  - Numerous species
  - Several culprits:
    - sharpshooter, I**
    - versute sharps**

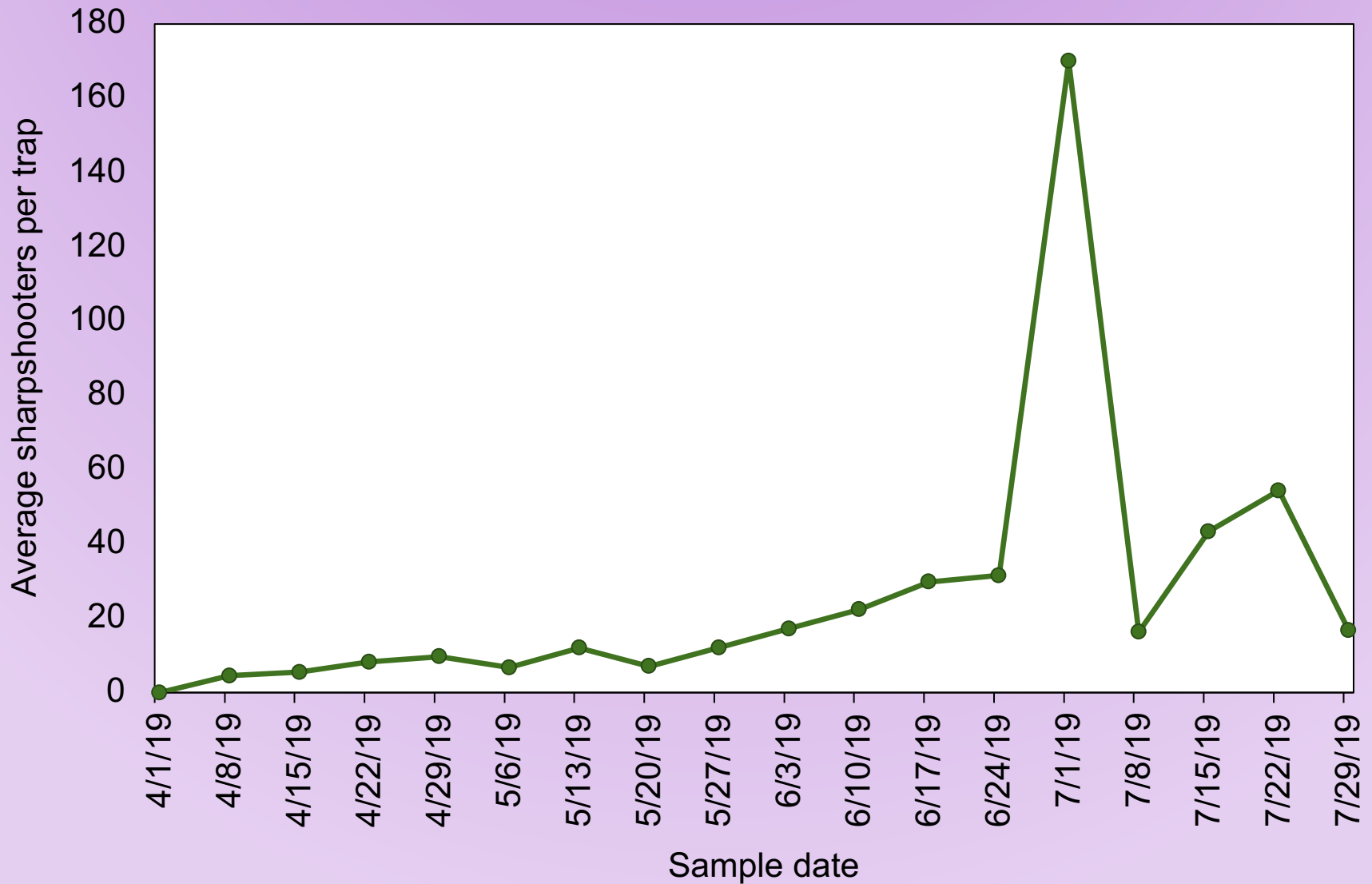


# Leafhoppers / sharpshooters

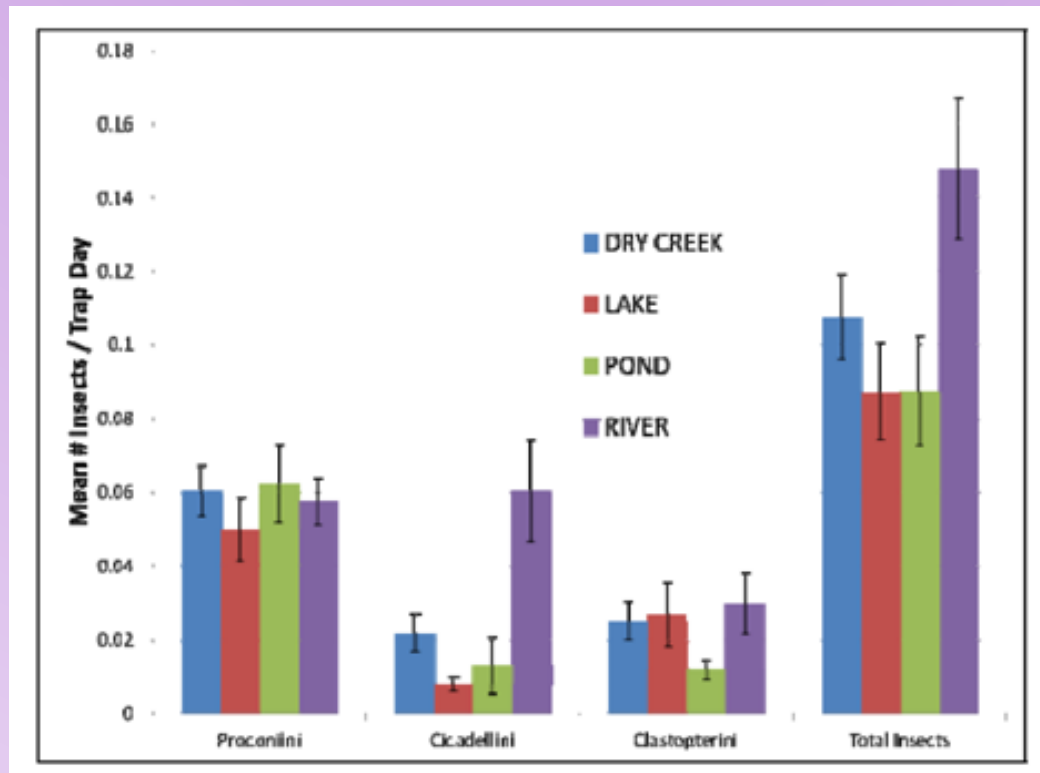
- Buffer zones
  - 100 ft weed-free area surrounding vineyards  
→ reduces Pierce's disease infections
  - Remove/limit alternate hosts
    - Crape myrtle, ragweed, Johnsongrass, sunflower, okra, peach/plum, blackberry, and pokeweed
- Monitoring:
  - Identify abundance and activity
  - Use double-sided yellow sticky traps
  - Begin at bud break
  - Hang traps every 150 feet in canopy
  - Check weekly



# Leafhopper/Sharpshooter activity in North GA



# Leafhoppers / sharpshooters near riparian zones



# Sharpshooters and Leafhoppers of Concern in GA – Vectors of Pierce's Disease

## Common name & Size

Glassy-winged sharpshooter

● 12 mm



Broad-headed sharpshooter

● 12 mm



Red-banded leafhopper

● 7.5 mm



Versute sharpshooter

● 4 mm



Yellow-headed leafhopper

*Xyphon flaviceps*  
● 6 mm



Bespeckled leafhopper

*Paraphlepsius irroratus*  
● 3.5 mm



Lateral-lined sharpshooter

● 8.5 mm



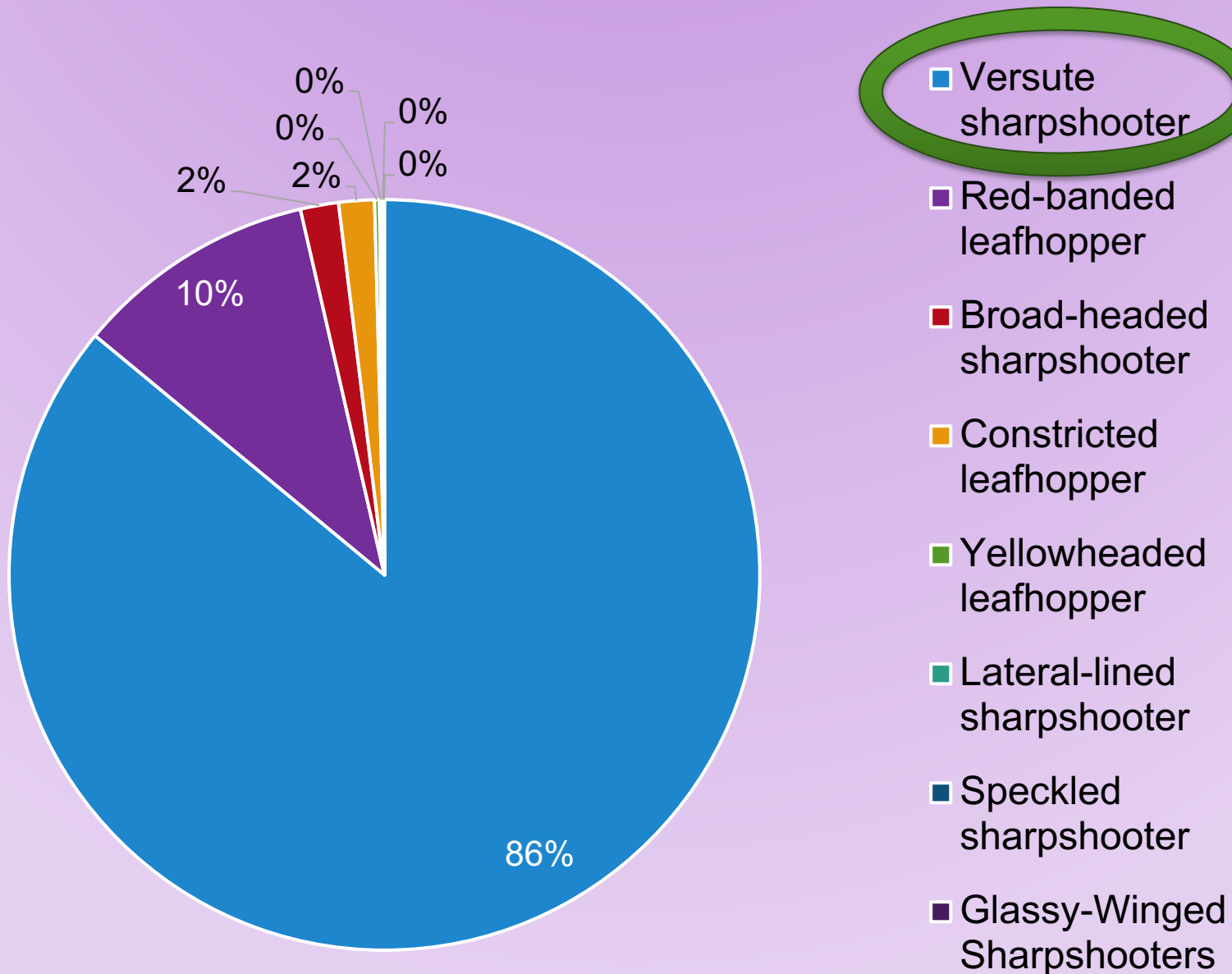
## Vector ability unknown

Speckled sharpshooter

● 12mm



# Sharpshooter/leafhopper community



# Managing sharpshooters/leafhoppers

- Apply insecticides at time of detection
- Large sharpshooters feed on the base rather than on the tips of canes
  - More likely to lead to infections
  - Less likely to be removed through pruning
- Neonicotinoids are effective
  - Foliar can suppress populations
  - **Soil applied** longer lasting, more effective



# Managing sharpshooters/leafhoppers



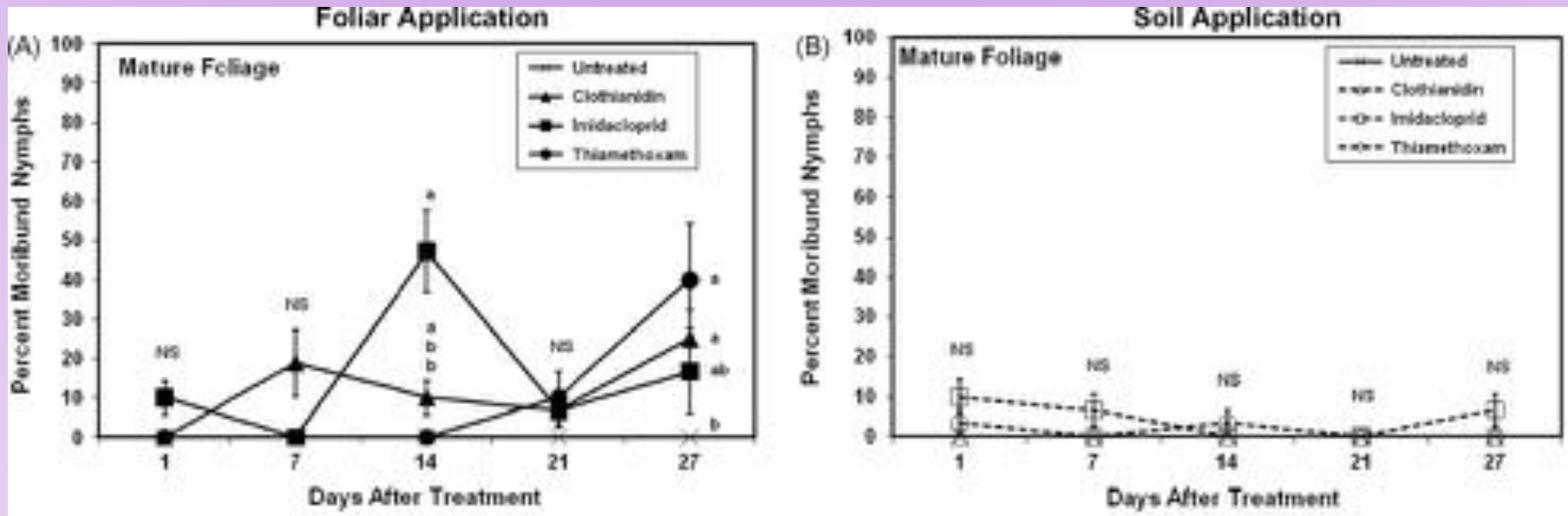
## Prebloom and/or cover sprays

Trade Name	Active Ingredient; IRAC	Efficacy
<b>Sevin</b>	carbaryl; 1A	++
<b>Malathion 8F</b>	malathion; 1B	++
<b>Danitol 2.4 EC</b>	fenpropathrin; 3	++
<b>Admire Pro</b>	imidacloprid; 4A	+++ ++++ (soil)
<b>Belay</b>	clothianidin; 4A	+++ ++++ (soil)
<b>Venom</b>	dinotefuran; 4A	+++ +++ (soil)

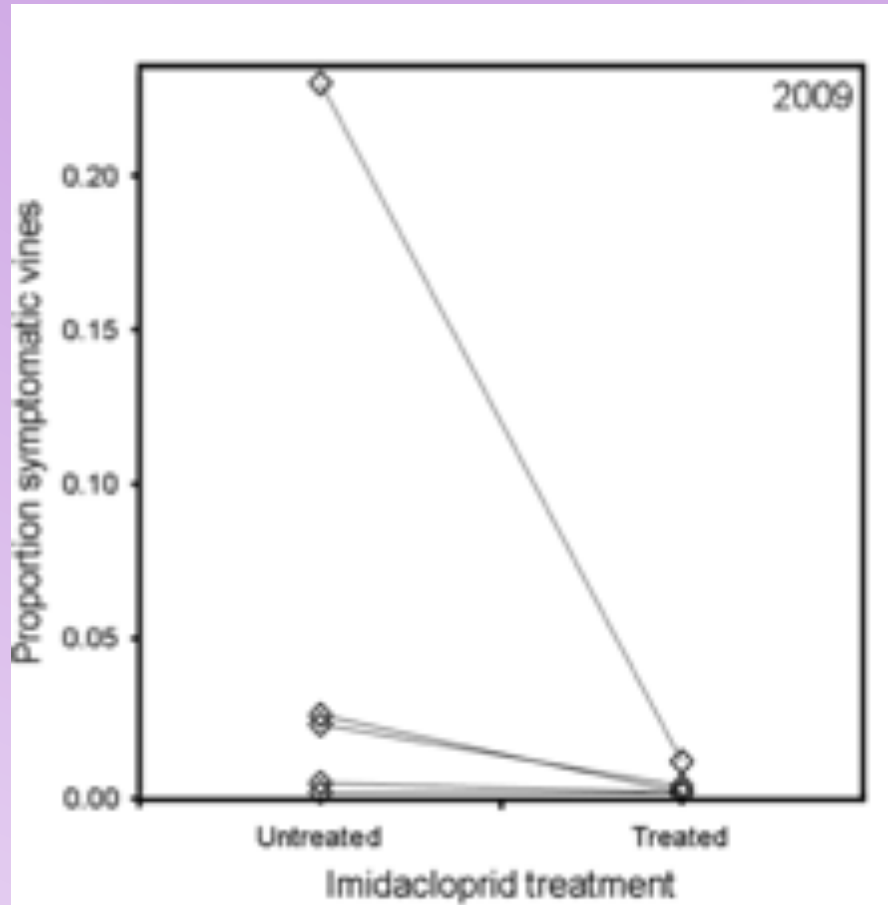
Only  
1-2  
apps  
per  
season



# Neonicotinoids are highly effective against leafhoppers/sharpshooters

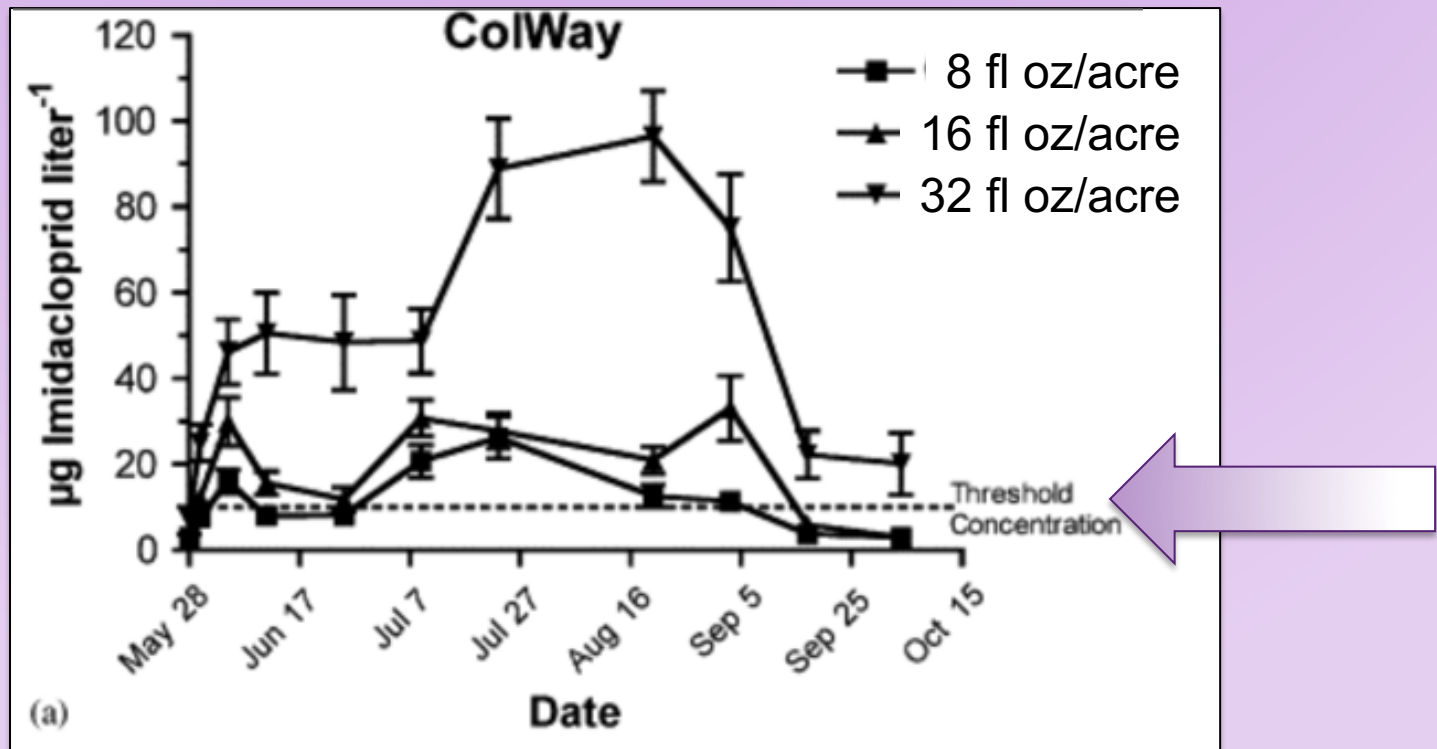


# Neonicotinoids may limit infection of Pierce's disease in vineyards



# Soil application is long lasting

- Chemigation
  - Application of insecticide through irrigation system
- Lasting and effective impact



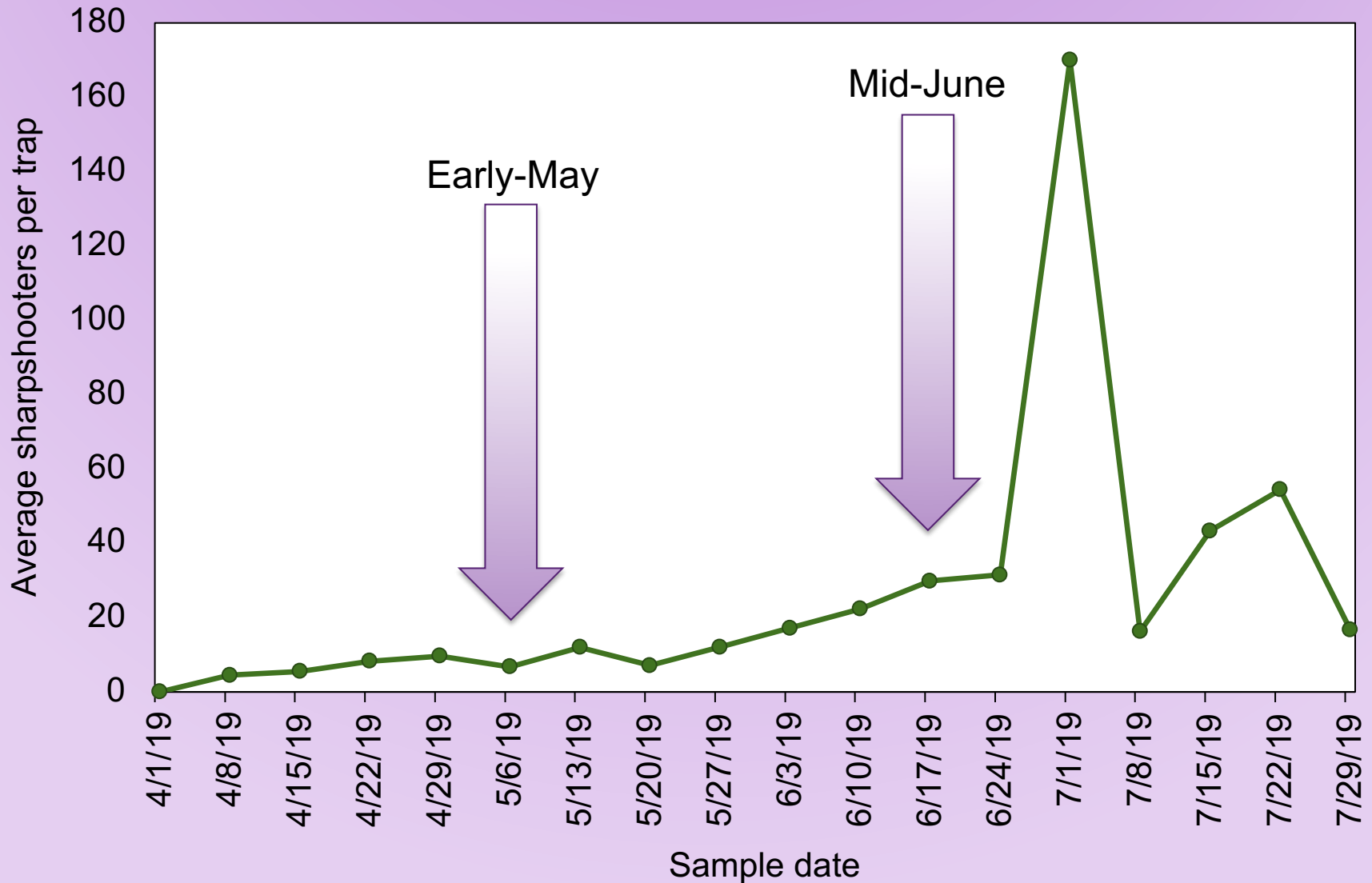
# Soil application is long lasting

- Chemigation
  - Application of insecticide through irrigation system
- Lasting and effective impact
- Imidacloprid labeled 7-14 fl oz/acre for soil app  
(max of 14 fl oz per season)
- Uniform distribution of water through irrigation system is essential
- Make first application at bloom and second 21-45 days later



# Leafhopper/Sharpshooter activity in North GA

## Potential timing for chemigation



**Questions?**