

SHARPSHOOTERS/SPITTLEBUG

Blue-green sharpshooter
Graphocephala atropunctata



Willow sharpshooter
Graphocephala confluence



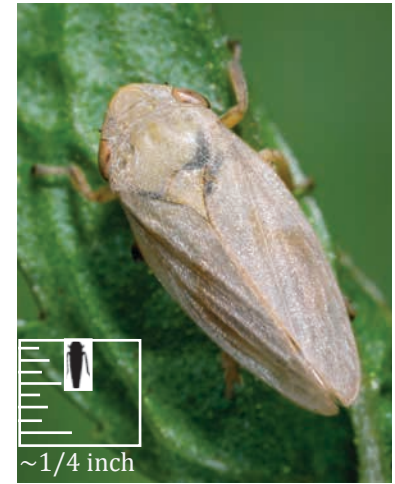
Green sharpshooter
Draeculacephala minerva



Red-headed sharpshooter
Xyphon fulgida



Meadow spittlebug
Philaenus spumarius



Blue-green sharpshooter nymph



Look-a-like

Thamnotettix zelleri

This insect can be confused with BGSS, however it is NOT a VECTOR

Gary McDonald



Glassy-winged sharpshooter
Homalodisca vitripennis



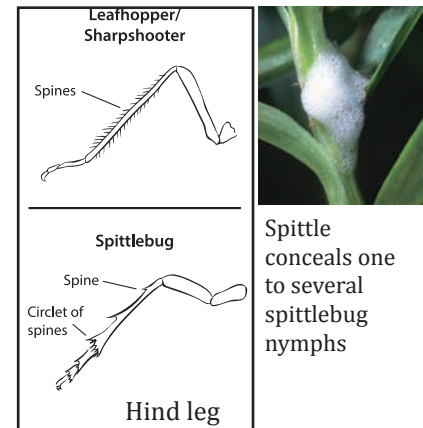
Smoketree sharpshooter
Homalodisca liturata



Smoketree sharpshooter head and back are covered with wavy, light colored lines while glassy-winged sharpshooter is stippled with yellow spots



Color variation in meadow spittlebug



Pierce's Disease Vectors, their Habitat and Monitoring Methods

VECTOR	Blue-green sharpshooter (BGSS)	Willow sharpshooter (WSS)	Green sharpshooter (GSS)	Red-headed sharpshooter (RHSS)	Glassy-winged sharpshooter (GWSS)	Meadow spittlebug ² (MSB)
Number of generations/year	One in California North Coast	One in California North Coast	Three	Four	At least two	One in California North Coast
Transmission Efficiency ¹	High	High	Low	Medium	Low	Low
Breeding Habitats	Riparian areas, some ornamental landscapes	Riparian areas	Grasses in wet area	Grasses in wet areas, but tolerates drier conditions	Crops (primarily citrus), riparian areas, ornamental landscapes, native woodlands, weeds	Riparian areas, ornamental landscapes, weeds in & adjacent to vineyard
Breeding Hosts	Woody perennials	Willows	Sedges, watergrass, rye, fescue	Bermudagrass, semi-aquatic grasses	Woody perennials, herbaceous plants	Herbaceous plants including grasses
Occurrence in breeding habitat	Frequent	Sporadic to frequent	Frequent	Sporadic	Very frequent	Frequent
Movement into vineyard	Along riparian edge	From willows along riparian edge	Along irrigated pastures & ditches	Along irrigated pastures & ditches, on Bermudagrass in & adjacent to vineyard	Widespread	Adults begin emerging in April
Monitoring methods	Yellow sticky traps Check vines visually	Yellow sticky traps Check vines visually	Sweep net (not attracted to yellow)		Yellow sticky traps Beating trays	Sweep net Check vines visually
What to look for	<p>Before budbreak through May: place yellow sticky traps at least 4 x 7" in size at the edge of the vineyard adjacent to a riparian zone, wooded area or ornamental landscape</p> <ul style="list-style-type: none"> Place traps 100 to 200 feet apart Check traps at least once a week and record # of BGSS and WSS adults. Do not count look-a-likes. Remove sharpshooters after counting Replace traps when dirty or no longer sticky <p>Mid-April through July:</p> <ul style="list-style-type: none"> Look for <u>BGSS nymphs</u> in their preferred host plants at the edge of the vineyard with sweep net. Empty contents of sweep net into a clear plastic bag for viewing Visually inspect willow trees for <u>WSS nymphs</u> 		<p>April through May: sample lush grasses with sweep net; empty contents of sweep net into a clear plastic bag for viewing</p>	<p>April through May: sample Bermudagrass with sweep net; empty contents of sweep net into a clear plastic bag for viewing</p>	<ul style="list-style-type: none"> Before budbreak through November: place yellow sticky traps at least 5.5 x 9" at the edge of the vineyard adjacent to a riparian zone, wooded area or ornamental landscape Place 1 trap per 10 acres Check traps once a week. If you suspect GWSS, contact the Agriculture Commissioner's office and UCCE Replace traps when dirty or no longer sticky 	<ul style="list-style-type: none"> March and April: monitor vineyard weeds for nymphs; look for frothy foam (spittle masses) which conceal the nymphs April through May: sample ground cover for adults with sweep net; empty contents of sweep net into a clear plastic bag for viewing

¹Transmission efficiency = insect's ability to move the bacterium between hosts.

²The role meadow spittlebug, *Philaenus spumarius*, plays in disease spread is unknown.