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

Glassy-winged sharpshooter
Homalodisca vitripennis

Smoketree sharpshooter
Homalodisca liturata

Color variation in meadow spittlebug

University of California
Agriculture and Natural Resources

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# Pierce’s Disease Vectors, their Habitat and Monitoring Methods

<table>
<thead>
<tr>
<th>VECTOR</th>
<th>Blue-green sharpshooter (BGSS)</th>
<th>Willow sharpshooter (WSS)</th>
<th>Green sharpshooter (GSS)</th>
<th>Red-headed sharpshooter (RHSS)</th>
<th>Glassy-winged sharpshooter (GWSS)</th>
<th>Meadow spittlebug&lt;sup&gt;2&lt;/sup&gt; (MSB)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Number of generations/year</strong></td>
<td>One in California North Coast</td>
<td>One in California North Coast</td>
<td>Three</td>
<td>Four</td>
<td>At least two</td>
<td>One in California North Coast</td>
</tr>
<tr>
<td><strong>Transmission Efficiency</strong></td>
<td>High</td>
<td>High</td>
<td>Low</td>
<td>Medium</td>
<td>Low</td>
<td>Low</td>
</tr>
<tr>
<td><strong>Breeding Habitats</strong></td>
<td>Riparian areas, some ornamental landscapes</td>
<td>Riparian areas</td>
<td>Grasses in wet area</td>
<td>Grasses in wet areas, but tolerates drier conditions</td>
<td>Crops (primarily citrus), riparian areas, ornamental landscapes, native woodlands, weeds</td>
<td>Riparian areas, ornamental landscapes, weeds in &amp; adjacent to vineyard</td>
</tr>
<tr>
<td><strong>Breeding Hosts</strong></td>
<td>Woody perennials</td>
<td>Willows</td>
<td>Sedges, watergrass, rye, fescue</td>
<td>Bermudagrass, semi-aquatic grasses</td>
<td>Woody perennials, herbaceous plants</td>
<td>Herbaceous plants including grasses</td>
</tr>
<tr>
<td><strong>Occurrence in breeding habitat</strong></td>
<td>Frequent</td>
<td>Sporadic to frequent</td>
<td>Frequent</td>
<td>Sporadic</td>
<td>Very frequent</td>
<td>Frequent</td>
</tr>
<tr>
<td><strong>Movement into vineyard</strong></td>
<td>Along riparian edge</td>
<td>From willows along riparian edge</td>
<td>Along irrigated pastures &amp; ditches</td>
<td>Along irrigated pastures &amp; ditches, on Bermudagrass in &amp; adjacent to vineyard</td>
<td>Widespread</td>
<td>Adults begin emerging in April</td>
</tr>
<tr>
<td><strong>Monitoring methods</strong></td>
<td>Yellow sticky traps Check vines visually</td>
<td>Yellow sticky traps Check vines visually</td>
<td>Sweep net (not attracted to yellow)</td>
<td>Yellow sticky traps Beating trays</td>
<td>Yellow sticky traps Check vines visually</td>
<td>Sweep net Check vines visually</td>
</tr>
</tbody>
</table>

## What to look for

**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
- 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

**Mid-April through July:**
- Look for BGSS nymphs 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 WSS nymphs

**April through May:** sample lush grasses with sweep net; empty contents of sweep net into a clear plastic bag for viewing

**April through May:** sample Bermudagrass with sweep net; empty contents of sweep net into a clear plastic bag for viewing

- **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

- **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

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<sup>1</sup> Transmission efficiency = insect’s ability to move the bacterium between hosts.

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