Fact sheet

Bacterial leaf scorch and the glassy winged sharpshooter

What are bacterial leaf scorch and the glassy winged sharpshooter?

The glassy winged sharpshooter (GWSS, *Homalodisca vitripennis*) is a sap sucking insect native to North America. It rarely causes economic damage, however, it is a vector of the bacteria *Xylella fastidiosa* which causes a bacterial disease known as bacterial leaf scorch, Pierce's disease, phoney peach or citrus variegated chlorosis. Xylella causes significant economic impact on fruit and nut trees (including blueberry), ornamental trees, vegetable crops, shrubs, weeds and some field crops. Bacterial leaf scorch causes different symptoms in different hosts but generally causes either stunting or leaf blight diseases and can lead to tree death.

What do they look like?

The adult GWSS is a large leafhopper (12–14 mm long) and is dark brown to black with a cream-white underside. Adults have a large head with a swollen face and large eyes and small cream to pale yellow spots on their heads. They have clear wings with red-brown veins. The females excrete a chalky white substance just prior to laying eggs that accumulates on their sides appearing as white spots. This is then spread over the eggs. The eggs are laid in a single layer side by side in clutches of 3–28 on the undersides of leaves. At first the cluster appears as a greenish blister beneath the leaf epidermis covered by a chalky substance. The leaf tissue turns brown after hatching and remains as a scar. Nymphs are smaller in size than the adults and have a similar body shape but are wingless and grey.

GWSS nymphs and adults feed on the trunk, stems and leaf petioles of plants and excrete vast quantities of liquid waste which can appear like rain under infested trees. The liquid dries to white and can appear like a chalky whitewash on infested plants.

Reyes Garcia III, USDA Agricultural Research Service, Bugwood.org

Adult female GWSS. Note the pale yellow-white spots on the head and the chalky white spots on the wing margins

John N Dell, Bugwood.org

Adult GWSS. Note the pale underside and red wing veins

Leonardo De La Fuente, Auburn University, USA

Necrosis of leaves beginning at the leaf tip. Note the dark band between dead and healthy tissue on some leaves

Kenneth Peek, Alameda County Department of Agriculture, USA

GWSS egg masses on the underside of leaves

Kenneth Peek, Alameda County Department of Agriculture, USA

GWSS nymphs hatching from egg mass. Note the chalky white substance coating the egg mass

Leonardo De La Fuente, Auburn University, USA

Leaf discolouration and necrosis and stem discolouration caused by bacterial leaf scorch

The first sign of bacterial leaf scorch is leaf tissue death (necrosis), usually starting at the leaf tip, giving the blueberry a burnt appearance. There may be leaf yellowing (chlorosis), leaf reddening and/or a dark margin between dead and healthy leaf tissue. These symptoms will appear on individual branches or one half of the plant at first but will eventually spread to the whole plant. New shoots are generally abnormally thin with very few flower buds. Stems then become yellow and plants drop their leaves giving the plant a skeletal appearance. The root system generally appears healthy. The plant dies within approximately two years and the next year surrounding plants express the same symptoms.

What can they be confused with?

The GWSS can be confused with other leafhopper species (such as those in the Auchenorrhyncha suborder), however, the adults are larger than most leafhoppers (12–14 mm long) and have a distinctive head shape. However, an expert is required to identify the GWSS to species level.

Bacterial leaf scorch resembles drought symptoms, fertiliser salt burn, herbicide injury and root rot. The roots of infected plants will appear healthy and there is sometimes a dark band between the dead and healthy leaf tissue. The new stems of plants infected with bacterial leaf scorch will appear thin and yellow.

What should I look for?

Any signs of leaf death or premature leaf drop should be investigated closely. The most obvious symptom of bacterial leaf scorch is thin yellow new shoots. The best thing you can do is inspect your crop for the presence of GWSS particularly along the trunks, stems and leaf petioles. Watery excrement under infested trees which dries to give a chalky white coating is a sign of GWSS. Yellow sticky traps are used overseas for crop surveillance.

Kenneth Peek, Alameda County Department of Agriculture, USA

GWSS nymphs

Leonardo De La Fuente, Auburn University, Alabama, USA

Bacterial leaf scorch of blueberry

How do they spread?

GWSS adults are capable of flight allowing for localised spread. It is also possible that they could be accidently spread on vehicles or machinery. Bacterial leaf scorch is spread by the GWSS and in infected planting material. It is not known if Australian leafhoppers can spread bacterial leaf scorch from infected to healthy plants.

Where are they now?

Both GWSS and bacterial leaf scorch are found in North America and some areas of Mexico. They have spread to French Polynesia (Tahiti) and Hawaii.

How can I protect my farm from bacterial leaf scorch and the glassy winged sharpshooter?

You can protect your farm from bacterial leaf scorch and GWSS by regularly checking your property for the presence of new pests and diseases. Check your crop regularly for symptoms such as leaf death, premature leaf drop, stem yellowing or signs of GWSS feeding. Make sure you are familiar with common blueberry pests so when monitoring your crops for pests you will be alert to the possible presence of exotic pests.

If you see anything unusual, call the Exotic Plant Pest Hotline

EXOTIC PLANT PEST HOTLINE
1800 084 881

PHA15-041