

Phony Peach Disease

Introduction: Phony peach disease (PPD) is caused by *Xylella fastidiosa*, a bacterium which colonizes the



Peach tree exhibiting compact, bushy growth habit

xylem of numerous plant species and is transmitted by leafhopper insects. Though many infected plant species will display no symptoms, infection of peach and several other hosts by this pathogen can result in disease. PPD was first observed in Georgia in 1900 and by 1933, it had spread to Texas. The bacterium is common in Texas but, many strains exist and, only particular strains will cause disease on peach. Other serious diseases caused by strains of *X. fastidiosa* include Pierce's disease of grapes, citrus variegated chlorosis, and bacterial leaf scorch of many tree species. Though peach is not a preferred host

of most leafhopper species, heavy vector populations can lead to high PPD infection rates in orchards.

Symptoms: PPD symptoms are typically not visible until 18 months or more after infection. Infected trees take on a more compact, bushy appearance due to a shortening of internodes and a reduction in terminal growth. Foliage is often dark green and is shed later than usual in the fall. Bloom and fruit ripening periods will occur several days earlier than normal and a reduction in the size, quantity, and quality of fruit will occur. Xylem of infected woody tissues exhibits a black discoloration. Trees that become infected prior to production age will never bear fruit, and trees that become infected after production age will cease to produce marketable fruit around 2-4 years after initial symptom expression. Leaf scorch symptoms do not occur on peach but can occur on other *Prunus spp.* such as plum and almond. Leaf scorch is characterized by a tan discoloration that begins around the leaf margin and gradually extends inward. Plums can also serve as asymptomatic carriers of the disease.

Transmission: Within the leafhopper family (Cicadellidae), members of the subgroup known as the sharpshooters (tribe Proconiini) are the primary vectors of this disease. Within this group, *Homalodisca vitripennis*, also known as the glassy-winged sharpshooter, is a particularly efficient vector of *X. fastidiosa*.

Peak populations of *H. vitripennis* occur at the end of May. Vector insects acquire the bacterium after feeding



Homalodisca vitripennis (glassy-winged sharpshooter)

on an infected host for a short period of time and are capable of transmitting it for the remainder of their life. The bacterium spreads throughout the xylem of the tree, both above and below ground, and root grafts which develop between adjacent trees provide an additional means of spreading the disease. Outbreaks of this disease in parts of the southeast have made it an important factor in determining the production life of an orchard.

Control: Control of this disease is difficult as this bacterium can infect a very wide range of plants which display no symptoms. It is recommended that infected trees be removed from orchards 2-5 years old to extend the production life of the orchard. Refraining from summer pruning will ensure that PPD symptoms are recognized as well as prevent the growth of vigorous new foliage on which leafhoppers are more likely to feed. Removing wild *Prunus spp.* nearby can reduce the chances that strains of *X. fastidiosa* causing PPD will be vectored to the orchard. Controlling weeds will help to reduce the number and diversity of leafhoppers in the orchard. Insecticide use against leafhoppers is not an effective way to control this disease.

H. vitripennis image: Johnny N. Dell, Bugwood.org

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