


Stone Fruit IPM for Beginners

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Chapter 18

X-disease in peaches

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X-disease pathogen

Candidatus Phytoplasma pruni.

Hosts

Sweet and tart cherry, peach and nectarine. Alternate hosts include clovers, dandelion, chokecherry, almond and several wild plum and cherry species.

Time of concern

Management is focused on removing infected hosts before leafhopper spread can occur.

Symptoms and damage

Peach and nectarine leaves develop red, necrotic areas that drop out, leaving a shot-hole effect and tattered leaves. Defoliation at the base of a shoot gives a poodle tail or pompom appearance. Fruit on infected branches is smaller, lacks flavor often with a bitter taste and may drop before ripening.

Usually by the third year after infection, most branches will show symptoms. Young trees die within one to two years after the first symptoms appear. Older trees gradually decline in vigor.

Sweet and tart cherries infected with X-disease phytoplasma show stunted growth, enlarged stipules and immature, small, poorly colored fruit. Infected cherry trees on mahaleb rootstock decline quickly, whereas those on mazzard rootstock may persist for many years.

Pest cycle

Chokecherry is an important natural reservoir of peach X-disease phytoplasma in eastern USA. Infected sweet and sour cherries, especially on mazzard rootstock, can be sources of X-disease, although chokecherry is often the principal reservoir.

Other reservoirs of X-disease include weeds such as clover and dandelion.

Peaches and nectarines, although severely affected by the pathogen, are poor hosts for further disease

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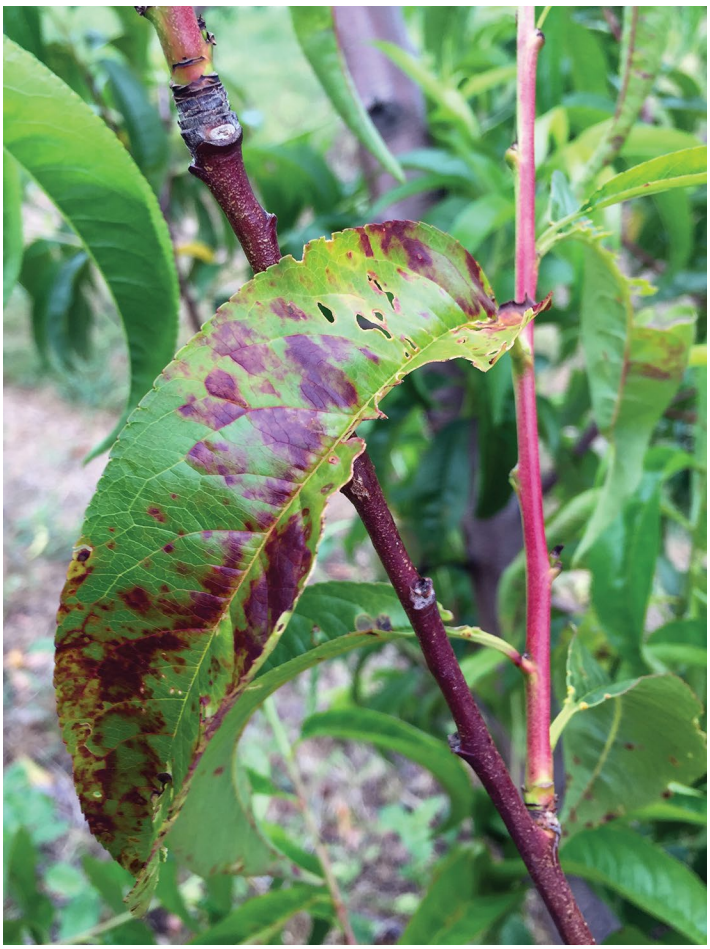
Sweet cherry leaf with enlarged leaf-like stipules at the base of the petiole due to X-disease.



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Peach leaf with wine-red splotches typical of X-disease symptoms.

spread. X-disease spreads in mid-summer to late October when specific leafhopper species spread the pathogen from infected to healthy hosts.

Monitoring weather and preventing infection

Weather monitoring does not play a role in X-disease management. X-disease spread is favored by mild temperatures favoring leafhopper multiplication and build-up of the pathogen in infected trees. However, this provides no help in management because no chemical control is labeled that will effectively protect trees from infection. Insecticide coverage may help to suppress leafhopper movement, but this is not a reliable method of X-disease management.

IPM steps for beginners

For eastern North America, managing X-disease is focused on avoiding and eradicating infected plants.

- ► Scout for and remove chokecherry in a 200-meter perimeter of susceptible fruit trees. Infected chokecherry develops early, bright red fall colors and may die back to the ground, but may sprout again in subsequent years.
- ► Carefully monitor sweet and tart cherries for symptoms of X-disease and promptly remove trees if detected.
- ► Buy tree stock from nurseries with certification programs and avoid propagating from plants not protected from viruses and phytoplasma.

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Defoliation of basal leaves on shoots due to X-disease gives the branches a pompom or poodle-tail appearance.