

X-Disease

I. Introduction: X-Disease, once thought to be caused by a virus, is now known to be caused by a mycoplasma-like organism (MLO), a small parasitic organism that lives in phloem cells. The disease affects peach, nectarine, sweet cherry, sour cherry, and Japanese plum. The disease agent also infects wild chokecherry, which serves as a reservoir for the MLO that may then be transmitted to orchard plantings by several species of leafhopper. The most important of these species are *Scaphytopius acutus* (Say) and *Paraphlepsius irroratus* (Say); both species have two generations annually. Leafhoppers move into orchards in late summer and are favored by red clover and several rosaceous species, especially strawberry and blackberry.

II. Symptoms: Symptoms in peach are apparent after about two months of growth, when leaves on isolated branches curl inward and develop irregular yellow to reddish-purple spots (photo 2-68), which later drop out leaving tattered leaves with a "shothole" appearance. Leaves on affected branches fall prematurely, starting at the base of the branch, until only a tuft of leaves remains at the tips of infected shoots. Fruit drops prematurely. Two to three years after initial infection, the entire tree will show symptoms (photo 2-69).



Symptoms in cherry depend on the rootstock. On mahaleb rootstock, trees are killed suddenly in midsummer by the disease. On mazzard rootstock, infected trees decline slowly, with severe decrease in fruit production. Fruit that is formed is small, pink, and bitter.

III. Monitoring: Be aware of symptoms of this disease. No routine monitoring is required.

IV. Management: Eradication of choke cherry near stone fruit orchards helps reduce the incidence of X-disease. A program to suppress re-establishment of choke cherry should be developed. Remove infected cherry trees, particularly those on Mazzard rootstock. Disease spread can be reduced with insecticides that are effective against leafhoppers. Trunk injection of oxytetracycline can provide temporary symptom remission, and is more effective than sprays of oxytetracycline. Infected trees in nurseries should be removed and destroyed.

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