

10. Western X-Disease of Chokecherry

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Chokecherry is used as a shrub in windbreaks and as a component of wildlife plantings in the central and northern Great Plains. Chokecherry in many of these plantings is infected by the western X-disease pathogen (fig. 10-1).

Hosts and Distribution

The western X-disease pathogen infects chokecherry, sweet and sour cherries, several varieties of peach, and some other *Prunus* species. American plum has been infected by inoculations; however, after 9 years there were no visible symptoms on American plum interplanted among infected chokecherry in eastern Nebraska.

The disease is present in the northern and central Great Plains (Wyoming, North Dakota, South Dakota, and Nebraska).

Symptoms and Signs

Infected leaves become greenish-yellow in late June. These leaves may have a reddish tinge on their borders. In July and August the leaves turn deep red (figs. 10-2, 10-3). Shoots are stunted, and rosettes result from shortened internodes at the tip. Infected fruits are somewhat pointed and are yellowish-red, not the normal deep red of healthy fruit. Both diseased and healthy fruits may be found on the same tree.

Disease Cycle

The western X-disease pathogen for many years was thought to be caused by a virus; however, the disease is caused by a spiroplasma.

The western X-disease pathogen is transmitted to

Figure 10-1. Infected chokecherry along length of windbreak.





Figure 10-2. Western X-disease symptoms, several trees.

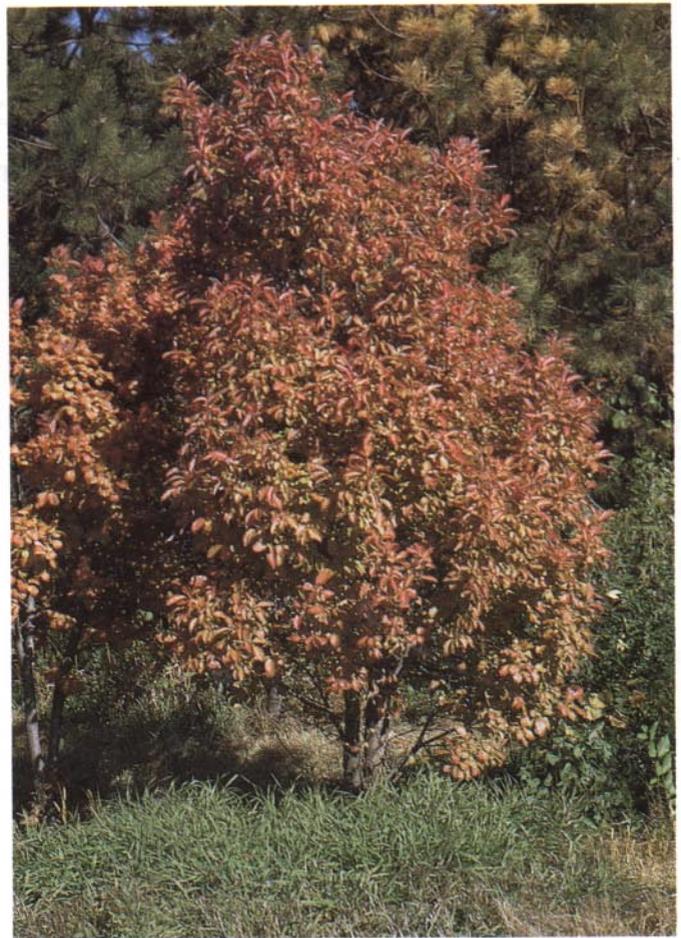


Figure 10-3. Symptoms, single tree.

Prunus hosts by *Colladanus geminatus*, *C. montanus*, and other leafhoppers when they feed on the leaves. Symptoms on leaves usually do not develop until the growing season following the year of transmission.

Damage

Growth of infected chokecherry is reduced, internodes become shorter, the shrubs gradually decline, and ultimately die. In eastern Nebraska, symptoms appeared on more than 80 percent of the chokecherries within 3 years after the X-disease pathogen was introduced; mortality was more than 50 percent within 8 years. Infected fruits are not suitable for use in jams and jellies, and their seeds do not germinate.

Control

Nurseries should avoid establishing beds of chokecherry near *Prunus* species that are hosts of the pathogen. Because the pathogen spreads rapidly from infected to healthy shrubs, new plantings of chokecherry should not be established near infected chokecherry.

Because American plum has been infected following artificial inoculation with the pathogen, it could possibly

be a symptomless carrier and thus a threat to chokecherry, but there is no supporting evidence.

Thus, American plum can be included in plantings containing chokecherry with confidence that the X-disease pathogen will not seriously damage it.

Selected References

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