Shallow Bark Canker of Walnut
Brenneria nigrifluens

Host: English walnut (*Juglans regia*).

Disease common name: Shallow bark canker.

Pathogen: *Brenneria nigrifluens*; syn.: *Erwinia nigrifluens*.

Disease Cycle

Inoculum: The source of inoculum, other than from infected trees, is unknown. *Brenneria nigrifluens* survives in cankers and emerges in the exudates.

Transmission: The means of dissemination is unclear.

Infection: Infection sometimes occurs near holes in the bark made by birds (woodpeckers), but typically no obvious wounds are present. The disease is more likely to develop in trees with low vigor caused by stress from lack of soil moisture and from planting in poor soil.

Symptoms and signs: Symptoms are visible on trunks and primary branches, and they appear as scattered blotches of dark brown to black exudates (Figs. 1 and 2). The flow of sap is much less compared with that caused by deep bark canker. The lesions and affected tissues are relatively shallow (Fig. 3), but they may extend well beyond the discolored bark and even penetrate enough in parts to kill the phloem. It apparently does little damage to the tree since it does not penetrate deeply like deep bark canker.

Survival: Nothing is known about survival of the bacterium outside of the host.

Disease Management

No control measures for shallow bark canker have been developed, because there are no data revealing that the disease harms trees or affects yield. Some growers shave off the corky outer bark, which usually limits canker extension. Most walnut cultivars are susceptible. ‘Hartley’ is the most susceptible of the cultivars but is infrequently affected by the pathogen.

References

Bradbury, J. F. 1986. Guide to Plant Pathogenic Bacteria. CAB International, Slough, U.K.

Teviotdale, B. L., Michailides, T. J., and Pscheidt, J. W., eds. 2002. Compendium of Nut Crop Diseases in Temperate Zones. American Phytopathological Society, St. Paul, MN.

Figure 1. Shallow cankers with dark exudate on trunk of ‘Hartley’ walnut. (Courtesy B. Teviotdale)

Figure 2. Multiple shallow cankers with dark exudate on trunk of ‘Hartley’ walnut. (Courtesy B. Teviotdale)

Figure 3. ‘Hartley’ walnut with outer layers of bark removed to reveal extent of affected tissues. (Courtesy B. Teviotdale)