Russian olive disorder: Phomopsis canker

G.L. WORF and J.S. STEWART

Russian olive (Elaeagnus angustifolia) is a small tree with beautiful, silver-gray foliage. The tree was once a valuable landscape plant, as it is well-adapted to urban environments and tolerates dry summers and low winter temperatures. In 1974, Phomopsis canker was first confirmed in Wisconsin. Since then, the disease has become epidemic throughout the state, leaving infected trees looking ragged and unsightly and eliminating the Russian olive as a useful tree. This publication describes the disease and offers some ideas to reduce its effects.

Symptoms and effects

One or several dead and dying branches are often the first symptoms of Phomopsis canker that people notice. The disease may attack branches of any size. Leaves on these branches become dry, turn tan or gray, sometimes twist or curl, and typically remain attached during that growing season.

Examine diseased branches for diagnostic cankers that develop on the bark. You may find cankers on branches not yet showing wilting or dead leaves. Leaves wilt shortly after cankers encircle and girdle infected branches.

The size and age of branches partly affects canker appearance. On branches smaller than an inch in diameter, infected bark remains smooth and becomes reddish brown or orange with dark brown margins. Cankers on larger branches may become sunken and rough textured.

Cankers range from 1–6 inches long, but are usually 2–3 inches. Sapwood beneath cankers is brown; discolored areas extend a short distance outside the margins of diseased bark.

The causal fungus develops beneath the bark. Fungal fruiting structures (pycnidia), which look like black, pinhead-sized pimples, eventually push through the bark and roughen the canker surface.

Gummosis, a sticky clear ooze, commonly leaks from the canker’s edges and cracks; it is a useful diagnostic symptom. Occasionally insect borers may cause gummosis. Eliminate possible confusion with borer injury by carefully whittling

Note the wilting branches and twigs of this Russian olive tree. The symptoms are typical of trees infected with Phomopsis canker.

Bark at the base of wilting branches is typically darker than surrounding healthy areas. Blistering on the surface of the canker is caused by the fruiting structure of the disease-causing fungus.
into the bark and wood and examining for insect tunnels.

Verticillium wilt causes branch wilting similar to Phomopsis canker, but Verticillium wilt does not produce cankers. See Maple and Other Trees Disorder: Verticillium Wilt (A2537).

By comparing diseased and healthy branches, you can diagnose the disease relatively accurately if cankers and gummosis are evident. If you need laboratory confirmation of a field diagnosis, cut off diseased sections of branches, including the margins of healthy and diseased tissue, and take them to your county Extension office.

Phomopsis usually does not kill infected trees, but attacks on several branches can seriously reduce tree vigor and appearance. In nurseries with small plants, damage is often more severe.

**Cause**

The disease-causing fungus, *Phomopsis elaeagni*, apparently overwinters in cankered tissue. The fungus releases microscopic spores during wet weather. Splashing water, people, and probably insects spread the disease. This virulent organism readily invades bark wounds, branch stubs, and damaged thorns, but can also attack plants without wounds.

**Control**

Severely diseased trees are difficult to treat, especially if nearby trees are infected and produce fungal inoculum. If you can’t tolerate ragged half-dead trees, remove them and replant different tree species. Autumn olive, *Elaeagnus umbellata*, is a smaller shrub-like tree that is similar in color to Russian olive, and apparently resists Phomopsis. However, autumn olive is not reliably winterhardy in Wisconsin. You might consider two other tall shrubs with silver foliage—silver buffaloberry (*Shephardia argentea*) and seabuckthorn (*Hippophae rhamnoides*).

Plant healthy trees and avoid accidentally spreading the disease with infested tools and wood.

Where few branches are infected, combining sanitation procedures with fungicide applications may help. For current chemical recommendations, refer to Woody Ornamentals Pest Management in Wisconsin (A3597).