

Crown Gall

Scientific Name of Pathogen: *Agrobacterium tumefaciens* (bacterium)

Hosts: Affects a wide variety of woody plants; often on *Populus* spp.

Damage/symptoms: Soft, spherical, white to cream colored galls form at the base of stems/trunks, root crown, or on roots. Young galls can be mistaken as callus tissue. As galls become older, their shape becomes quite irregular and they turn brown or black. The tissue can be spongy and crumbly throughout the gall or can be woody and knot-like. The size of the galls increases with the growth of affected trees. Infected plants may appear stunted and express a lack of vigor due to water stress caused by a diseased root system.



Figure 2: . Mature crown gall in lawn on root of established aspen tree. Photo by Eva Grimme, Montana State University

Disease cycle: Crown gall bacteria are common soil inhabitants. They survive free-living in soils with good aeration and on the root surface of weeds. The bacteria enter plants through fresh wounds inflicted by cultural practices like grafting or mowing or by natural causes (wind, hail). They then stimulate the host cells to grow rapidly and irregularly, resulting in the formation of galls.

Management: There is no cure for crown gall infection. Remove young plants that are infected to minimize spread of the disease. Avoid any type of wounding during cultural practices. Consider raising the soil level above exposed tree roots to avoid spreading infection during mowing practices. Disinfect pruning tools with 70% ethylalcohol or a standard household disinfectant spray after being in contact with crown galls.



Figure 1: . Crown gall developing on the main stem close to the base. Photo by Lesley Ingram, Bugwood.org.



Figure 3: Young crown gall at the base of a young tree. Photo by Edward L. Barnard, Florida Department of Agriculture

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