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Crown Gall on Grapes in Home Plantings

Crown gall occurs on more than 600 species of plants. The disease is characterized by galls or overgrowths that form on the roots, trunk, and arms of grape vines.

 ARTICLES | UPDATED: JULY 7, 2006



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V. vinifera varieties are more susceptible to crown gall than *V. labrusca* varieties. These galls are found mostly on the lower trunk near the soil line. Large galls can develop rapidly and completely girdle a young vine in one season. When galls are numerous, or when they are located on major roots or on the root crown, they disrupt the translocation of water and nutrients, leading to poor growth, gradual dieback, and

sometimes the death of the vine. In general, affected plants are more susceptible to adverse environmental conditions, especially winter injury.

Symptoms

The major symptom of the crown gall disease is the fleshy galls. Current-season galls appear in early summer as white, fleshy growths that usually develop near injured vines. By late summer, the galls turn brown. In the fall, they become dry and corky and might fall off the vine in a few years.

Disease Cycle

The disease organism is caused by the soilborne bacterium *Agrobacterium tumefaciens*. The bacterium survives for long periods of time in vineyard soils, within galls and within infested vines. A fresh wound is required for gall formation to start in the grapevine. Contaminated planting material (nursery stock) is another source of the disease.

Disease Management

Because the bacterium lives in the soil, it cannot be controlled by chemical sprays. It is necessary to examine new plants before planting and discard any that have galls. In the vineyard, remove large galls on the upper parts of the trunk or on the arms by pruning the arm or trunk below the affected tissue. Then, renew the vine by means of a shoot from the base of the vine.

The development of crown gall is closely correlated with wounding and freeze injury. Practices that reduce wounding, especially during pruning and machinery operation, are useful in managing the disease. Management practices that minimize the risk of cold injury are another technique in the prevention of crown gall. Preventing freeze injuries also is important. In some areas, growers bury young vines in the fall to reduce this type of injury.