



NEWSPAPER ARTICLES

Phytophthora Root Rot (February 6, 2021)

by Nancy Hawkins, UCCE Master Gardener

While Master Gardeners are practicing stay at home, social distancing and mask wearing guidelines, we are still answering phone and email questions that come to our office. Here is a recent email: *Recently a healthy appearing Bradford Pear tree fell over in my yard. The trunk was about 10 inches in diameter. The tree snapped off completely at ground level. The tree in question had some slight blight which I trimmed out on a case-by-case basis using a bleach solution on my trimmer after each cut. The mysterious thing to me is that the tree had a very healthy appearance, from the ground level to the top of the tree. It also was adequately watered on a regular basis according to the Visalia City watering guidelines. Any idea as to what might have caused this?*

After looking at his pictures, I suspected the problem is caused by one of several species of fungi called *Phytophthora*. These root and crown rot fungi commonly infect the roots and crowns of landscape shrubs and trees, and even vegetables such as tomatoes and eggplants. In doing my research on this fungus disease, I thought others in our community might have experienced similar problems and would like to know more about the symptoms and how to manage this disease.

Common symptoms will vary depending on the plant infected, and soil moisture and temperature, but can include leaf wilt, discoloration, and twig and branch die back. Eventually, the entire plant can be killed. The roots can be hard and brittle which could result in the tree splitting at ground level. Gum or dark sap may ooze from the margins of the diseased trunk area. If bark tissue is carefully cut away, reddish brown streaks or zones can be seen in the inner bark and outer layer of wood. When tomatoes and eggplants are affected by root rot, roots develop water-soaked spots that dry out and turn a chocolate brown.

The most important factor in reducing the threat of *Phytophthora* rot is good water management. Avoid prolonged saturation of the soil or standing water around the base of trees or other plants. Irrigate only as much and as often as necessary. If you irrigate trees with sprinklers, use low-angle sprinkler heads to avoid wetting the trunk and lower branches. If using a drip system, place the emitters at least a foot away from the trunk.



For all vegetable plants, shrubs and trees, provide good soil drainage before and after planting. Drainage should be to the rooting depth of the plants, generally 3 to 6 feet for trees, 2 to 4 feet for shrubs, and 1 to 2 feet for bedding plants. You do not want the roots and crown of a plant to remain wet for more than 4 to 8 hours which is the time required for *Phytophthora* to infect the plant.

Provide adequate drainage by breaking through soil compaction and hardpan. In poorly drained soils, or in an area where you know *Phytophthora* is present, consider planting trees and shrubs on mounds. The mounds should be 8 to 10 inches high, with the upper roots near the soil level and the graft union well above the soil line. Do not install irrigated lawn around the base of trees and do not water the crown area directly. For vegetables, raised beds provide good drainage. Group plants according to their irrigation needs. Separate those needing frequent, light irrigations, such as vegetables, from those needing infrequent, deep irrigations, such trees and shrubs.

At the first signs of aboveground symptoms, examine the tree at the soil line for crown rot. Carefully cut away bark that looks affected. If crown rot is present, trees can sometimes be saved by removing soil from the base of the tree down to the top of the main roots and allowing the crown tissue to dry out. Proper sanitation is important in slowing the spread of *Phytophthora*. Surface and subsurface water, shoes, gloves, and tools can move moist soil that carry the pathogen to a new area.

Plant only certified nursery stock from a reputable source and choose the most resistant rootstocks or varieties available for our area. Less susceptible rootstocks or varieties are available for many fruit trees, landscape shrubs and vegetables. If tomatoes have been affected by *Phytophthora* root rot, avoid planting tomatoes or other susceptible vegetables in the same soil for at least one or two seasons. Plant a resistant crop such as corn, instead, or leave the soil unplanted and do not irrigate, but keep it well worked to allow the soil to dry as deeply as possible.



The most effective way of preventing *Phytophthora* rot diseases is to provide good drainage and to practice good water management. Along with the appropriate cultural controls, the fungicide fosetyl-al (Aliette) may be used on a number of plant species to help prevent infections. When applied as a foliar spray it is absorbed by foliage and moves into roots. However, do not rely on fungicide applications alone to control root and crown rot diseases. Applying the wrong material or the wrong amount can do more harm than good by killing the non-disease-causing microorganisms that naturally help limit certain pathogens.

You can find more info on the following UC website. <http://ipm.ucanr.edu/PMG/PESTNOTES/pn74133.html>

In these uncertain times of stay-at-home directives, spend time in your garden. It's a safe place to be!

In accordance to the Stay-at-Home guidelines, the Master Gardeners have cancelled all public events at this time, but if you send us an email or leave a message on our phone lines, someone will call you back!

Master Gardeners in Tulare County: (559) 684-3325; Kings County at (559) 852-2736

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