



March 2024

Environmental Message

## Phytophthora Root Rot

As vegetation managers on utility rights of way we prune thousands and thousands of trees each year. Out of thousands of trees, occasionally we will prune a tree and at some point in the future that tree may show signs of decline or death. Since we were the last person to touch that tree, or even be in the area, the blame for the decline comes to us. There are many different insects and diseases that impact tree health. Some diseases are host specific, but other diseases are generalist. One such generalist disease is phytophthora root rot (PRR) and can cause decline and death of trees and shrubs.

PRR is a soil born disease that are most active when soils are wet. There are several different species of PRR, but they all impact trees similarly. Some species of PRR prefer warm weather and some favor cool weather. The disease can be spread by splashing rain, irrigation, water runoff and by the movement of contaminated soil, surface equipment or plant parts. PRR does not need a wound to enter the plant. Almost all trees and shrubs can be infected with PRR if the soil stays wet for a prolonged period of time or if trees are planted too deep.

PRR enters the tree through the roots and grows inside the tree from the roots to the lower trunk. It colonizes and kills the inner bark (phloem) and causes a browning of the outer layer of the sapwood. PRR in a sense clogs the water and nutrient conducting vessels of the tree mimicking low moisture conditions. The tree simply cannot get water into the crown of the tree from the roots. Trees often appear like they are suffering from drought stress and will die during the first warm weather of the season. The leaves may turn dull green, yellow or even purplish in color. Other times only one branch may first show symptoms, but then spread to the rest of the tree over time. It also manifests itself as an oozing or wet area on the trunk of the tree before the leaves are impacted. Many times, there are no outward signs that a tree died due to PRR and may weaken the tree enough where the tree cannot defend itself against other pathogens, leading to the “spiral of decline.”

Vegetation managers must be familiar with ailments of trees and what they look like. To the public it is an easy association that recent pruning caused the sudden death and/or decline. When we are called upon to investigate a claim that pruning caused a tree to die, it is important to know the signs and symptoms of disease and be able to communicate that to the public. There are management techniques to help mitigate trees impacted by PRR and can be found in sources online.

Sources:

<https://ipm.ucanr.edu/PMG/PESTNOTES/pn74133.html>

<https://www.missouribotanicalgarden.org/gardens-gardening/your-garden/help-for-the-home-gardener/advice-tips-resources/insects-pests-and-problems/diseases/rot/phytophthora-root-rot-of-trees-and-shrubs>

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