We’re Here to Help

Collier Arbor Care is here to assist you with your tree, shrub and lawn care needs. If you would like more information on any of our services listed below, please give us a call or visit our website for valuable plant information.

- Plant Health Care Programs
- Targeted Insect & Disease Treatments
- Pruning Trees & Shrubs
- Tree Removal & Stump Grinding
- Organic-based Lawn Care
- Tree & Shrub Fertilization
- Soil Treatments
- Hazard Tree Analysis
- Landscape Weed Control
- Consulting & Diagnosis

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Fact Sheet #25

Armillaria Root Rot

Above: Honey colored gilled mushrooms may appear in late autumn during rainy periods
Armillaria Root Rot

Armillaria root rot is caused by a soil borne fungus. Common names for the disease are the shoe string and the oak root fungus. This refers to the black shoe strings of the disease called rhizomorphs that survive during unfavorable conditions. There are several distinct species of the fungus. It is found world wide but it very common in the heavy clay soils and cool climate of the Northwest.

Plants Affected
Armillaria root rot attacks over 700 species of plants most of which are woody plants. Among the shade and ornamental trees, oaks and maples are the ones commonly infected. Other tree hosts include, beeches, birches, dogwoods, Douglas fir, elms, hemlocks, poplars, and rhododendron, willows and fruit trees.

Symptoms / Damage
Above ground symptoms include; premature fall coloration, stunting and poor growth, and general health decline of the plant, twig and branch dieback. Such a decline usually occurs over a several year period but may appear to progress quickly during advanced infection. Death of the tree quickly follows. Often trees infected with Armillaria will blow over in wind storms showing an abnormally small root ball with stubbed off, decayed roots. On infected conifer trees such as Douglas fir a resin or pitch flow exudes from the lower trunk.

Positive signs of the fungus are found at the base of the trunk (root collar) or in the main roots. White, creamy, paper thick fan shaped sheets of fungus strands (mycelium) can be seen growing over sapwood when the bark is removed. Also present under the bark or in the soil around the root collar are the black root like shoe strings or rhizomorphs. These cord-like structures grow out from infected roots into the soil and can spread infection to other trees. Small clusters of yellowish or honey colored gilled mushrooms may appear in late autumn during rainy periods.

Life Cycle
Armillaria survive as rhizomorphs or mycelium in dead or dying wood in stumps or roots and in the soil for decades. The fungus can spread by root to root contact from infected plant parts or by contact with the rhizomorphs. Also the fungus can be spread by air borne spores released by the mushrooms to dead stumps or injured bark. Trees that are stressed by drought, insect attack, or other disease are more susceptible to attack. Also trees that have had soil fill over their root systems or an installation of lawn and excessive irrigation in the drip zone of the tree can also trigger infection. Many native oak and other tree species are commonly infected and die from this drastic change in root environment.

Management
Often it takes an expert to accurately diagnose Armillaria. We use a technique of exposing the root crown with a tool called an Air-Spade® to allow for diagnosis of the root rot or other root problems.

Cultural
- Don't plant susceptible tree species in areas where trees have died from Armillaria.
- Resistant tree species include: ginko, magnolia, sweet gum, dawn redwood and incense cedar.
- Remove and dispose of infected stumps and roots if practical.

Chemical
There is no known chemical control of Armillaria root rot.

Above Left: Present under the bark or in the soil around the root collar are the black root-like shoe strings or rhizomorphs

Above Right: White, creamy, paper thick fan shaped sheets of fungus strands (mycelium) can be seen growing over sapwood when the bark is removed

Collier Arbor Care is a homegrown, second-generation family-owned business. We've been around since 1937.

We are recognized by our customers and by horticulture professionals for knowledge, experience, trusted advice, and the highest standards of workmanship. The continuing education of our staff brings the most up-to-date knowledge and industry techniques to your landscape.