BOUTTE TREE

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PRESCRIPTION PROGRAMS

ARMILLARIA ROOT ROT

Description

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 shoestrings 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.

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, DouglasFir, Ems, Hemlocks, Poplars, 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.

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 for inspection. Also present under the bark or in the soil around the root collar are the black root like shoe strings. 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 spring and fall 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-Knife¨ 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, and Dawn Redwood.

Remove and dispose of infected stumps and roots if practical.

Do not stress or change the root environment around existing trees. Avoid fill soil (raising grades) over root systems, and do not over irrigate.

Water trees moderately during extended drought conditions to prevent stress.

Partially infected trees with only a small percentage of roots or root collar infected can have the root collar excavated to expose to air and drying to stop the spread of the disease.

Chemical

There is no known chemical control of Armillaria root rot.