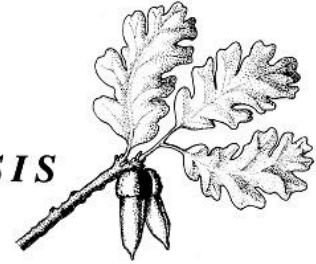


## PLANT DISEASE DIAGNOSIS

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# Armillaria Root Rot



*Armillaria* mushrooms.

### Symptoms

A tree or shrub infected with *Armillaria* root rot will show symptoms of decline throughout the entire plant. The tree slowly declines, with the foliage becoming gradually thinner and chlorotic. Wilt may be present. Twigs and branches will start to die back from the tips. Eventually the entire tree or shrub may die.

These visible symptoms in the branches and foliage are the result of decay of the crown and root system caused by the fungus. If the bark is removed from the root or crown area, white mycelial plaques are visible between the bark and the wood. White mycelium seen loose in the soil is not *Armillaria*. The white plaques are only seen in the root or crown area. Any white fungus seen in the roots is not necessarily *Armillaria*. The wood decay fungus *Poria* is also a white fungus found on dead wood. Laboratory confirmation is needed to confirm the diagnosis.

### Biology

*Armillaria mellea* is a basidiomycete that forms mushrooms around the base of an infected plant in the fall after the rains come. These mushrooms can be identified to confirm *Armillaria*. The fungus spreads in the soil by producing root-like structures called rhizomorphs. These will grow through the soil and eventually attach to the

surfaces of new roots and infect the new plant. Moist conditions are very favorable for *Armillaria*, encouraging the growth of rhizomorphs.



White mycelium under bark

### Host Range

*Armillaria* has an extremely wide host range. Both conifers and hardwoods can be infected. Native oaks are quite susceptible when they are used in landscaping that receives summer watering. Shrubs planted underneath oaks are also likely to become infected.

### Management

Provide good cultural care, being careful not to overwater. Stress predisposes the tree. Make sure the area has good drainage. If a plant has previously died from *Armillaria*, dry the soil out for several months before replanting. Remove as many roots from the infected plant as possible. Massive soil disruption and increasing organic matter helps kill the fungus. A list is available of resistant and susceptible species. Replant with species on the resistant list. Resistant species may get the diseases if conditions are unfavorable for the tree. There is no successful chemical treatment for *Armillaria* that is available for the home landscape.

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