

(revision date:4/30/2013)

## ***Common Diseases: Armillaria root rot***

*Use Integrated Pest Management (IPM) for successful plant problem management.*

### ***Biology***

Armillaria root rot is a fungal disease transmitted between plants by root contact. It is also spread by rhizomorphs. Armillaria is often found in newly cleared soils. Symptoms typically include production of smaller-than-normal leaves, leaf yellowing, leaf drop, dieback of branches, and eventual death of the tree. White thread-like masses of the fungus may be found beneath the bark near the crown of infected trees, and/or as shoestring-like rhizomorphs, which are dark strands of the fungus growing on or just beneath the soil surface. It may be difficult to distinguish between small roots and rhizomorphs. Honey-colored mushrooms often grow near the base of infected trees in the fall. Infected trees may also exhibit a dark black line in the wood in the infected area at the base of the plant. Diagnostic experience and a microscope may be necessary to recognize these fungal structures. Armillaria is also known as oak root fungus.

### ***Management Options***

#### **Non-Chemical Management**

- ~ Correctly prepare infested area prior to replanting. As soon as possible, remove and destroy plants which are severely diseased to prevent the fungus from spreading. It is important to remove as much of the root system as possible.
- ~ Choose the right plant for the specific location and provide proper cultural care. This will result in healthier plants better able to resist Armillaria root rot.
- ~ Avoid watering directly onto the base of the trunk of trees and large shrubs.
- ~ Dig a trench to isolate infected soil and prevent spread of the disease to adjacent plants. A vertical metal barrier can be placed in the trench prior to refilling to prevent the roots from adjacent healthy plants.
- ~ For valuable plants not seriously affected, consider removing the soil around rotted parts of the lower trunk and larger roots. Cut out the diseased parts of these areas down to healthy tissue. Allow the exposed roots and lower trunk to dry during summer, but replace the soil before freezing weather occurs in the fall.
- ~ Replant with resistant species, such as white fir, Japanese maple, madrone, smoke tree, Leyland cypress, Russian olive, St. Johnswort, English holly, Oregon grape, Scotch pine, crabapple or pear. The degree to which plants are resistant is variable and depends on plant health as well as other factors such as amount of disease pressure.

*Select non-chemical management options as your first choice!*

#### **Chemical Management**

***IMPORTANT: Visit Home and Garden Fact Sheets for more information on using pesticides***

None recommended

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***Images***



~ Caption: *Armillaria root rot infecting trunk*  
~ Photo by: *C.R. Foss*



~ Caption: *Cherry Armillaria root rot*  
~ Photo by: *R.S. Byther*



~ Caption: *Armillaria root rot infecting trunk*  
~ Photo by: *R.S. Byther*



~ Caption: *Armillaria rhizomorphs*  
~ Photo by: *R.S. Byther*