

UC Pest Management Guidelines

AVOCADO

ARMILLARIA ROOT ROT

Pathogen: *Armillaria* sp.

(Reviewed: 7/01, updated: 6/99)

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SYMPTOMS

The Armillaria fungus becomes well established in the roots before any visible effects appear in the top. There may be a gradual deterioration in tree vigor, with the foliage yellowing and dropping over part or all of the tree, or there may be a sudden wilting and collapse. Death of the tree usually follows.

The most reliable sign of Armillaria root rot is a white fan-shaped growth of the fungus mycelium under the bark of diseased roots. Purplish brown cordlike rhizomorphs that resemble feeder roots sometimes grow on the surface of diseased roots.

The Armillaria fungus may produce a [mushroom stage](#) around the base of the infected tree during the rainy fall and winter months. The appearance of the mushroom cap is quite variable; it may range from a cream color to honey-yellow to almost black and may have a covering of brown scales. A great number of spores are produced, but they do not appear to be an important source of infection in California avocados.

COMMENTS ON THE DISEASE

Armillaria root rot spreads from place to place in infected wood. This wood may be a root fragment or part of an infected nursery tree. It may be carried by flood water, by leaf mulch gathered from under infected trees, by cultivating equipment, or by any activities that might move infected wood and soil. Long after the aerial parts of the tree are gone, the fungus remains alive in the roots. When susceptible trees such as citrus, peach, or avocado are planted in soil with Armillaria-infected roots or wood pieces and the new roots come in contact with the fungus, they are exposed to infection. Infection is accomplished by direct penetration of a rhizomorph into the bark or by root-to-root grafts. The fungus spreads from tree to tree in diseased areas in the orchard mainly by growing along diseased roots and infecting the healthy roots of adjacent trees.

COMMENTS ON CONTROL

Armillaria fungus is very sensitive to drying, and a tree's life may be prolonged by exposing the base of the tree to the air--a technique that works in citrus. Soil fumigation with chemicals has successfully controlled Armillaria root rot under favorable soil conditions by preventing spread of the fungus and permitting replanting of fumigated areas.

TREATMENT:

Pesticide (commercial name)	Amount/Acre
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A. METHYL BROMIDE*	350-450 lb/acre
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...or...

1 lb/100 sq ft

COMMENTS: Use low rate on sandy loam and high rate on heavier soils with high clay content. Inject 7-8 inches, 12-18 inches apart, and tarp immediately. Do not plant for at least 1 month.

* Permit required from county agricultural commissioner for purchase or use.

PRECAUTIONS

PUBLICATION



UC IPM Pest Management Guidelines: Avocado
UC ANR Publication 3436

Diseases

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