

## Hypoxylon Canker

Hypoxylon canker is a white-rot fungal disease primarily of oaks, hickories and pecans in South Carolina, and is caused by *Biscogniauxia atropunctata* var. *atropunctata* (syn. *Hypoxylon atropunctatum*). Many species of oaks are susceptible to this disease, but post oak, water oak, southern red oak, white oak and blackjack oak are most often affected. This opportunistic pathogen is a common inhabitant of bark of hardwood trees, but it is only of consequence when the trees are under severe stress. Environmental stress caused by drought, as well as by root injury during construction, utility trenching in the root zone, soil grade changes, soil compaction and root diseases, all can play a role in weakening the trees and in the subsequent infection by *B. atropunctata* var. *atropunctata*. Any root injury will reduce water uptake by trees, and drought stress appears to be the most significant factor in infection.

As the fungus spreads and forms cankers, the first symptom that may be observed is the dying back of the crown (top) of the infected tree. However, other tree problems may also result in die back. Subsequently, the outer bark begins to slough off in areas of infection, and pieces of bark can be seen at the base of the tree. This bark loss exposes the first sign of the fungus, which is a brownish fungal stroma where conidia (or asexual spores) of the pathogen are produced. This area may be several inches to several feet long on limbs and trunks. These conidia are wind-disseminated and can cause new infections on other trees.

As the infection continues to develop, the exposed area of fungal stroma changes to a gray or silver color, and finally to black as a second type of spore is produced. This is the sexual stage of the fungus, and these spores, which are also infectious, are spread by splashing rain or insects to nearby trees.



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Asexual brown fungal stroma and black sexual stage of *Hypoxylon* on oak.

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There are no controls for Hypoxylon canker on these hardwood trees once infection has begun on the trunk. If infection is observed on branches, these may be removed and burned, but there may be other infection sites that are not yet apparent on the tree. Stress reduction is the key to prevent infection. Keep the trees as healthy as possible.

- Protect trees from damage during home construction and utility repairs. For more information, see [HGIC 1002, \*Protecting Trees During Construction\*](#).
- Water trees during periods of summer drought with 1 inch of irrigation water per week. For more information, see [HGIC 1056, \*Watering Shrubs & Trees\*](#).

- Trees should be mulched with a 3-inch layer of organic mulch from the trunk to the dripline, but don't pile mulch against the trunk. For more information, see [HGIC 1604, \*Mulch\*](#).
- Do not apply weed killers near the tree, especially beneath the limb canopy.
- Fertilize trees with slow-release tree and shrub fertilizer during early April. For more information, see [HGIC 1000, \*Fertilizing Trees & Shrubs\*](#).
- Remove and burn or dispose of any infected trees, and cut the remaining stumps flush with the soil.

For information on selecting and growing oaks, see [HGIC 1017, \*Oak\*](#). For information on diseases and insect pests of oaks, see [HGIC 2006, \*Oak Diseases & Insect Pests\*](#).

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