

Importance: Hypoxylon canker is a secondary fungal disease that effects oaks and hardwoods across Alabama and the southeastern United States. Many different species of oak trees are susceptible to the fungus. Some of these species include water oak, post oak, red oak, and blackjack oak to name a few. Pecans, hickories, elms, and some other hardwood species are also susceptible. The fungus attacks weakened trees and is not considered very aggressive. Trees that have experienced construction damage, prolonged drought, heat stress, repeated defoliation, soil disruption, and a number of other factors would be subject to infection by Hypoxylon canker. In addition to Hypoxylon canker, weak and stressed trees may become susceptible to a number of other insects and diseases. Once Hypoxylon canker manifests, the disease rapidly deteriorates the sapwood often causing dark decay lines running through the wood. The infected tree will eventually succumb to Hypoxylon Canker.



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Identification: The fungus *Hypoxylon atropunctatum* causes Hypoxylon canker in oak trees. There are other species of *Hypoxylon* that attack other hardwoods. Trees infected with Hypoxylon will often show evidence of other injuries on the bole, branches, or show die back in the crown. The bark will often slough off, particularly around any injuries on the tree. The fungus has two types of fungal signs. During the spring on areas where the bark has fallen off, the fungus will produce conidia on the surface of stromata. Conidia are masses of spores that are often olive green, tan, or reddish brown in color and appear powdery. The stromata is a sheet of fungal tissue that is often crusty or hard. The tree is most likely dead, if these spores are visible. In late summer or fall, once the powdery spores are gone, the stromata will turn black and become hard. It will resemble dried roofing tar. Several months later the stromata will turn from black to silver in color. The stroma will continue to produce spores that are discharged into the air. These spores will float through the air and can infect other trees in the area. The stromata vary greatly in size, from a few inches to several feet. Stromata are readily recognizable and a valid indicator of Hypoxylon canker.

Prevention: The best prevention for Hypoxylon canker is to maintain tree health and vigor. Prevent man made injuries whenever possible. Hypoxylon will readily attack drought stressed trees. As long as the moisture content of the live tree stays at about 100% or more the fungus has a difficult time developing in the wood. Urban trees or yard trees should be watered when applicable to reduce drought stress. Avoid soil disturbances and monitor for insect damage. If severe insect damage is observed in an urban environment, it may be treated with systemic pesticides.

Control: Once Hypoxylon attacks the tree there is no known control method. The best control is actually prevention. The presence of Hypoxylon often indicates that there are other severe stress elements present. If those stresses can be identified, they may be able to be mitigated or reduced. If one tree is affected by those stresses it is possible that surrounding trees are also being affected. Hypoxylon can be present in healthy trees and never manifest, as long as the tree maintains its vigor. If the canker is present on tree branches, it might be possible to prune the infected branches. Using pruning sealant is not recommended. The removal of severely infected trees can reduce inoculum, hence reducing the chance of the fungus spreading to surrounding trees. If the severely infected trees are in a forest setting, felling and leaving them is acceptable. Decomposition fungi will overrun the canker fungi and should decelerate or stop spore production.



This information is provided by the Alabama Forestry Commission

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