GEORGIA FORESTRY COMMISSION

Hypoxylon Canker in Urban Trees

Hypoxylon canker is common on stressed oaks and other hardwoods throughout the South. The canker is caused by one or more species of fungi in the genus *Hypoxylon.* Found in the outer bark areas of living and healthy trees, the fungi are normally of little consequence. However, *Hypoxylon* can severely injure or kill trees that have been weakened by factors such as drought, root disease, mechanical injury, logging or construction activities. These agents of stress enable the fungus to move into the xylem and produce cankers on the branches and trunk. Apparently, the fungus is activated by reduced moisture in the xylem and bark. Once this low moisture threshold is reached, the fungi quickly spread. Especially in droughty areas, *Hypoxylon* fungi are often associated with tree death. Other fungi found in weakened trees also play a role.

Trees infected with *Hypoxylon* often develop fungal growths on the branches or trunk. They may also exhibit crown dieback. Large patches of bark on infected trees often slough off along the trunk and major branches, revealing the fungus' fruiting bodies. In spring or early summer, powdery greenish to brown or gray masses of spores (conidia) are produced on the surface of crusty, fungal tissue patches (stromata). These stromata are the most obvious signs *of Hypoxylon* canker. They vary from less than three inches to three feet long or more, running along the stem and main branches. In the summer or fall, these stromata thicken, harden, and turn silver or bluish-gray to brown or black, depending on the *Hypoxylon* species.

How do trees become infected? - The most abundant species of *Hypoxylon, H. atropunctatum,* infects trees when they are seedlings. This fungus develops within the inner, living bark. As the tree grows, the fungus continues to grow, but does not enter the sap-wood. Insect defoliation, drought or other weather extremes exert stress on trees that may activate the fungus. Once fruiting bodies develop, the disease spreads from tree to tree via airborne spores.

In urban areas, prevention is the key to keeping trees *Hypoxylon* canker-free. During construction, guard trees from injury. Avoid herbicide damage and minimize site changes. These steps will help maintain tree vigor. Fertilization, watering during droughts, and mulching will help ward off losses to *Hypoxylon* canker. For high-value trees, consider lightning protection. When planting trees, be sure to select the appropriate species, the proper site and use good planting techniques. Trees showing fruiting structures of *Hypoxylon* will not survive, regardless of treatment. Carefully prune branches that have a local infection to help slow the advance of the fungus.