

Stem Decays and Stains

Blue Stain Fungi

Ophiostoma spp.

Ceratocystis spp.

Hosts: Conifers

Symptoms/signs: Blue-green discoloration of sapwood (often in wedge shapes) in recently killed trees. Blue stain fungi frequently originate from bark beetle galleries.

Biology: Blue stain fungi are carried by bark beetles and other wood inhabiting insects and are associated with tree mortality. They are mostly blue-staining and primarily from the genera *Ophiostoma* and *Ceratocystis*. The spores germinate and produce a mycelium (thread-like mass) that colonizes the phloem and sapwood, eventually blocking the water-conducting columns of the tree. The formation of a wedge-shaped stain is due to movement of hyphae along the rays from the outside of a log.

Effects: Stain

fungi often hasten the death of trees attacked by bark beetles. The stain may result in a reduction in the value of timber or timber products by discoloring sapwood, but does not affect wood strength.

Similar Insects

and Diseases: Another group of sapstaining fungi are wind disseminated, of various colors (blue, brown, or gray) and are from the genera *Aureobasidium* and *Alternaria*. Black stain fungi, which are closely related to blue stain fungi, also block water-conducting columns. However, black stain fungi spread to healthy trees by root-to-root contact.



Figure 204. Blue stain fungi invade the sapwood.

References: 92, 100