



Are You Seeing Top Dieback in your Pines?

Over the past several years, numerous reports have been received and investigated concerning top dieback (Figure 1) in loblolly pine in Mississippi. In some



Figure 1: Terminal dieback as a result of Pitch Canker. Forestry Images (www.forestryimages.org), photo by Robert L. Anderson, USDA Forest Service, United States.

cases whole trees were involved. The disease causing the phenomenon was identified as pitch canker. In the case of whole tree involvement the canker was located just above the root collar. The canker is characterized by resin soaking (Figure 2) in the xylem blocking water and nutrient flow to the canopy. The fungus spores are airborne and are

spread by wind and water. Spores gain entry into the pine host through wounds. Wounds are created by trees rubbing on each other and through feeding sites of insects. Insects that breed in dying trees and feeds on the phloem of young branches can transmit the disease. The spores of the disease are abundant and can remain in stands, in the duff, for months and on diseased portions of the infected trees.

This disease was first observed in Mississippi in the 1970's in a pine seed orchard. However the causal organism was not then known. Since then the causal organism *Fusarium moniliforme var. subglutinans* has been identified and the disease being pitch canker. It was first thought that the disease was a result of increased/over fertilization and intensive management of trees for seed production. However in recent years young loblolly pine plantations have been involved in Mississippi. Many of these have been in fairly close proximity to poultry houses but not in all cases. While mortality can result from abundant cankering, losses from growth suppression are more common. An interesting point is that after several

years, if the trees are not cut, they may recover and continue to grow. Because of this, making specific management recommendations is difficult.

Management recommendations range from doing nothing in hopes that they will recover in a few years, which has happened. Hence, this may be a reasonable option given the markets and costs associated with harvesting, site prep and planting. Another option would be to remove infected trees possibly reducing stress on the residual stand.



Figure 2: Internal resin soaking of infected xylem tissue at the site of the canker. Forestry Images (www.forestryimages.org), photo by Edward L. Barnard, Florida Department of Agriculture and Consumer Services.



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However, the fungus source is still present in the stand with infection courts being provided through wounds and insect feeding sites on the remaining trees. When regenerating pine stands one should also consider using native seed sources that may be more resistant to the disease than nursery seedlings from a particular seed source. Key is maintaining healthy forest conditions by avoiding over crowding and individual tree stress. Fertilization may enhance pitch canker infection, as many of the insects that have been associated with the disease prefer fast growing hosts.

For additional information contact: [Mississippi Forestry Commission Local Office](#) or T. Evan Nebeker at tevannebeker@bellsouth.net.

For more information on the Mississippi Forestry Commission Forest Health Program, contact:

Randy Chapin
District Forester, Southwest
P.O. Box 749
515 County Farm Lane NE
Brookhaven, MS 39602-0749
601-833-6621 office
rchapin@mfc.state.us