



FOREST AND SHADE TREE PESTS

Needle Casts of Pines

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SIGNIFICANCE

Needle casts are a group of diseases caused by several genera of fungi (especially, but not limited to *Ploioderma* and *Lophodermium* in Florida). These diseases affect all of Florida's major pine species. In some years needle casts develop to spectacular levels resulting in large numbers of trees appearing to have been scorched by fire. The principal effect of needle casts on infected trees is presumably a slowing of growth. However, severe needle casts, in combination with other stresses such as drought or injury, may make trees vulnerable to stress-related pests such as bark beetles. In most cases, the effects of needle casts on otherwise healthy trees are negligible.

RECOGNITION

Infected needles generally turn red to brown from their tips beginning in winter or early spring. By mid- or late spring infected needles die giving diseased trees a red to brown "fire scorched" appearance.

Some individual trees are highly susceptible to infection by needle cast fungi while others possess a high degree of genetic resistance. Because of this, it is not uncommon to see severely infected and perfectly healthy trees side by side. Following actual needle cast, the remaining green needles often appear somewhat tufted at the ends of branches. Small (approximately 1/16th inch), black elongated fruiting bodies (hysterothecia; sing., hysterothecium) of needle cast fungi are sometimes visible upon close inspection of affected or dead needles.

Fig. 1. Symptoms of needlecast on pines in Florida. A) Healthy (left) and diseased (right) slash pines. B) Severely infected slash pine. C) Severely infected loblolly pine. Note concentration of symptoms in lower portion of tree crown. D) Severely infected Christmas trees. (Photography credit: E. L. Barnard)



A.



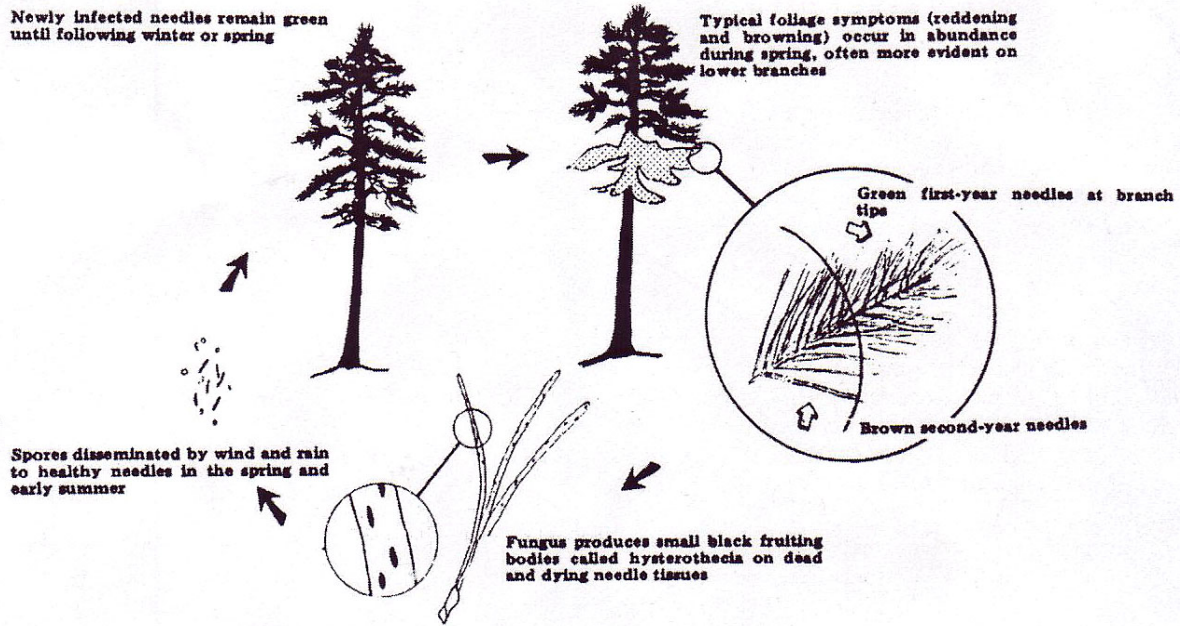
B.



C.



D.



A Needle Cast Life Cycle

INFECTION BIOLOGY

Microscopic spores, called ascospores, are produced in the fruiting bodies of needle cast fungi on affected or dead needles. When sufficient moisture is available, these ascospores are liberated into the air where they are then disseminated largely by wind or rain. New infections occur when the ascospores are deposited on young, emerging needles of susceptible pines during the spring or early summer, but symptoms (above) typically do not appear until the following spring.

CONTROL

Control is unnecessary in most situations. If control is desired for cosmetic reasons, (ornamentals, Christmas tree plantations, etc.), protection of newly emerging needles through June with regular applications of appropriately registered fungicides may be helpful.

Prepared by Dr. Edward Barnard, Forest Pathologist, Florida Forest Service. For further information please contact a local office of the Florida Forest Service.

FORESTRY OFFICES

1. Escambia, Santa Rosa, and Okaloosa Counties

Blackwater Forestry Center
11650 Munson Highway
Milton, FL 32570
850/ 957-6140

2. Bay, Calhoun, Gulf, Holmes, Jackson, Walton, and Washington Counties

Chipola Forestry Center
715 West 15 Street
Panama City, FL 32401
850/872-4175

4. Leon, Jefferson, Wakulla, Gadsden, Liberty and Franklin Counties

Tallahassee Forestry Center
865 Geddie Road
Tallahassee, FL 32304
850/ 488-1871

5. Dixie, Lafayette, Madison and Taylor Counties

Perry District Office
618 Plantation Road
Perry, FL 32348
850/ 838-2299

6. Baker, Columbia, Suwannee, Hamilton, Bradford and Union Counties

Suwannee District Office
137 SE Forestry Circle
Lake City, FL 32025
386/ 758-5700

7. Clay, Duval, and Nassau Counties

Jacksonville District
7247 Big Oaks Road
Bryceville, FL 32009
904/ 266-5001

8. Alachua, Putnam, Gilchrist, Marion and Levy Counties

Waccasassa Forestry Center
1600 N.E. 23rd Ave
Gainesville, FL 32609
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10. Flagler, St. Johns and Volusia Counties

Bunnell District Office
5001 US Highway 1, North
Bunnell, FL 32110
386/ 446-6785

11. Citrus, Hernando, Lake, Pasco, and Sumter Counties

Withlacoochee Forestry Center
15019 Broad Street
Brooksville, FL 34601-4201
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12. Seminole, Orange, Osceola and Brevard Counties

Orlando District Office
8431 S. Orange Blossom Trail
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14. Polk, Hillsborough, and Pinellas Counties

Lakeland District Office
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Okeechobee District
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17. Lee, Collier, and Hendry Counties

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18. Palm Beach, Broward, Miami-Dade, and Monroe Counties

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