

Common Diseases And Insects Found In Landscape Settings

If you live anywhere with trees nearby, you will eventually find that some insect or disease has found a home in them. This publication provides information on six diseases or insects commonly found on trees in Alabama and adjacent states. The problems caused by three fungal diseases (pine needle rust, cedar apple rust, and needle cast fungi) and three insects (woolly pine scale, eastern tent caterpillar, and redheaded pine sawfly) are addressed. Hopefully, this information will help you identify and manage the problem.

Common problems such as fusiform rust, the southern pine beetle, and dogwood anthracnose are not discussed due to the ready availability of printed information about them and space limitations.

Pine Needle Rust—*Coleosporium* spp.

Background. Pine needle rust is similar to needle-cast diseases that occur in Alabama. However, unlike the true needle-cast pathogens, this fungus requires two plant hosts to complete its life cycle. In addition, the disease requires cool, moist conditions for a period of 24 hours for infection to occur. This fungus infects loblolly, slash, longleaf, and shortleaf pines with the alternate hosts being asters and goldenrods. The disease is most severe on young seedlings or on trees in nursery, landscape, or Christmas tree settings.

Identification. The disease can be identified by the white to orange colored bladder-like blisters that are produced on the needles (Figure 1). These blisters are full of spores that will infect the alternate host. Minor infections cause little harm to the seedling. However, severe infections result in the entire needle being covered with the blisters and eventually the needles are casted.

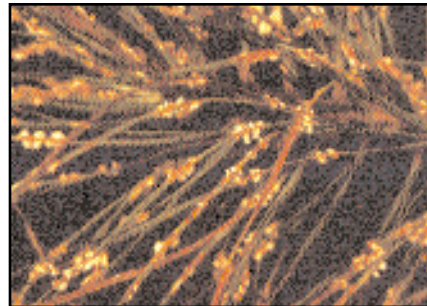


Figure 1. Branch of loblolly pine showing both signs (the fungal spore sacs) and symptoms (yellow to brown lesions) of infection by the needle rust fungus, *Coleosporium* sp.

Management. In a forest setting, no control is necessary as the disease does not reach levels that would kill a tree. However, smaller, younger trees can be entirely defoliated by the fungus which may result in seedling death. This is particularly true if repeated defoliations occur. Since there is no fungicidal treatment available, the best method for reducing infection is to eliminate the alternate hosts in the area by mowing or using the proper herbicides.

Cedar Apple Rust—*Gymnosporangium juniperi-virginianae*

Background. This disease requires that two different tree hosts be present. The fungus infects eastern red-cedar (*Juniperous* sp.), apples (*Malus* spp.) and hawthorn (*Crataegus* sp.). While it produces only unsightly orange galls on cedar branches, the fungus can cause significant damage to both apple and hawthorn trees. The pathogen causes a loss of foliage and a reduction in the number and the quality of fruit. If infection occurs yearly, eventually the tree may die.

Identification. The most obvious sign of infection on cedar is the orange, rubber-like galls that look like “an octopus gone mad.” The orange tendrils that comprise the gall swell up when wet, moist conditions are present and shrink when conditions are dry (Figure 2). When the gall is swollen, the fungus produces spores that are re-

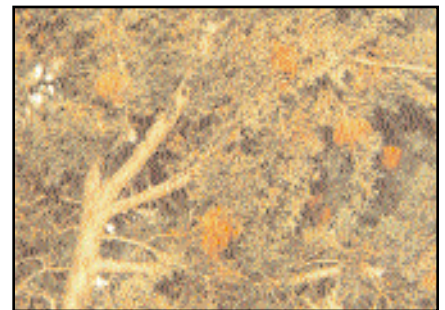


Figure 2. Eastern red cedar with at least 7 orange galls indicating infection with the cedar-apple rust fungus.

leased into the wind and may infect emerging apple leaves. Small leaf spots form on the apple leaves. These spots eventually turn brown and cause a cupping and curling of the leaf. Severe infection reduces the leaf area available for photosynthesis and slows the growth of the tree. Infection of the fruit is also possible and results in an unattractive and unappetizing apple.

Management. Removing and disposing of the orange galls will improve the appearance of the red cedar and reduce the spores that would in turn infect apple trees. There is no need for fungicidal sprays on cedar. The best way to control the fungus on apples is with timely applications of the proper fungicide. Also, removing red cedar growing in the area may reduce the disease on apples and preclude any need for fungicide applications.

Needle Cast Fungi— *Scirrhia* sp., *Lophodermium* spp., and *Hypoderma* spp.

Background. Over 22 needle-cast fungi occur in the south and are found on loblolly (*Pinus taeda*), slash (*P. elliottii*), longleaf (*P. palustris*), shortleaf (*P. echinata*), Virginia (*P. virginiana*), and eastern white pine (*P. strobus*). The three dominant needle-cast pathogens in Alabama are *Scirrhia* sp., *Lophodermium* spp., and *Hypoderma* spp. Disease outbreaks occur periodically when environmental conditions favor infection. Proper identification of the fungus involves microscopic examination of the spores, but the management required to minimize damage is similar regardless of the species. These pathogens are more important in Christmas tree plantations, nurseries, and landscape specimens

than in forest settings. Repeated infections along with other stresses may cause tree mortality.

Identification. These fungi infect the newly emerging needles in the spring or summer, causing a small yellow discoloration on the needle (Figure 3). Later in the season, the infec-

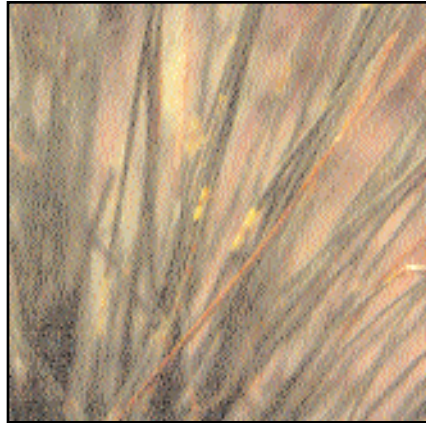


Figure 3. Longleaf pine infected with the brown spot fungus, *Scirrhia acicola*. Note the yellow to brown lesion on the individual needles.

tions begin to coalesce or come together and the needle turns brown and may fall off the tree. Close examination of the infected needles will reveal small, dark brown to black fruiting structures that produce spores. These spores in turn infect more needles and, in a severe infection, cause the tree to take on a burnt or scorched appearance (Figure 4).



Figure 4. Loblolly pine infected with the needle cast fungus *Lophodermium* sp. Note the excessive browning and tip die-back of the branches. (Photo courtesy of Bill Carey.)

Management. In forest settings, little can be done to control the needle cast diseases. However, in landscape plantings, Christmas tree orchards or nurseries, the use of fungicide treatment applied prior to infection in the spring will decrease the disease incidence. Also, the disposal of infected needles that accumulate near the base of the tree will reduce the inoculum level (source of spores) and lower the chance of infection in subsequent years.

Woolly Pine Scale— *Pseudophilippia* *quaintancii*

Background. The woolly pine scale occasionally occurs on landscape plantings on all the southern pines (loblolly, slash, longleaf and shortleaf). Small, periodic infestations of woolly pine scale and many other scale insects do not harm the tree. However, repeated severe infestations can cause branch dieback and, if the tree is under some other stress, death can occur.

Identification. Woolly pine scale infestations are easily identified by the masses of woolly wax on the needles, branches and shoots (Figure 5). Severe infestations give the tree a white fluffy appearance. Stunted, deformed or off-color branches and needles may indicate a low level of infestation. Another symptom suggesting scale infestation is the appearance of sooty molds (black discoloration of the leaves). These molds grow on the sugary exudate, commonly called honeydew, produced by the scale insects. Ants are also attracted to the exudate.

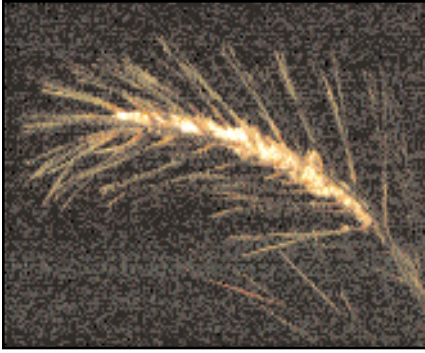


Figure 5. Loblolly pine infested with the woolly pine scale, *Pseudophilippia quaintancii*. (Photo courtesy of Bill Carey.)

Management. Most infestations are minor because of unfavorable environmental conditions and natural predators. If infestations are severe, the use of insecticide is recommended for high value or landscape trees. Proper care and maintenance of the tree to promote vigor and growth will speed recovery of the tree.

Eastern Tent Caterpillar—*Malacosoma americanum*

Background. The eastern tent caterpillar is primarily an aesthetic problem in yards and has little effect on tree health if defoliations are spaced apart by a number of years. However, several consecutive years of heavy defoliation in combination with some other stress may result in tree death. The tent caterpillar prefers trees within the genus *Prunus* (cherry, plum) and is commonly found on wild black cherry in forest settings. Around the home, the insect can also be found on apples (*Malus* sp.), oaks (*Quercus* sp.), hawthorn (*Crataegus* sp.), and pecan (*Carya* sp.).

Identification. Infestations can be easily identified by the silk tents that are found in branch crotches. The occurrence of the silk tents may be associated with the gradual loss of foliage, branch dieback, or thinning crowns. The tents are formed in early spring as soon as the leaves begin to emerge (Figure 6). The caterpillar (larvae) uses the tent as a place to hide and for protection from predation. At night, the caterpillars come out, feed upon leaves, and return to the tent. The eastern tent caterpillar is the larval form of a moth. The caterpillar stage of this insect is the one that damages trees. The caterpillars feed upon leaves prior to pupation and formation of the moth. Larvae vary in size but are approximately 60 mm long with a black head when fully grown. There is a white line on the back that is bordered by reddish-brown and black wavy lines.



Figure 6. Webbing characteristic of the eastern tent caterpillar, *Malacosoma americanum*, in the branch crotch of a black cherry tree.

Management. Yearly control is usually not necessary since the weather, disease, parasites, and predators keep tent caterpillar populations from getting out of control. However, when outbreaks do occur, physical removal of the tents as they appear minimizes defoliation. For difficult to reach areas, insecticides are approved for use on the eastern tent caterpillar. Proper care and maintenance of the tree to promote vigor and growth will increase recovery from defoliation. Proper care includes adequate watering, fertilizing, and pruning practices.

Redheaded Pine Sawfly—*Neodiprion lecontei*

Background. The redheaded pine sawfly defoliates young loblolly, slash, shortleaf, and longleaf pines throughout Alabama. The larval stage (caterpillar) is the most damaging stage in the insect's life cycle. Populations of these insects are usually low. However, periodic severe outbreaks and the resulting defoliation may lead to tree mortality. Younger seedlings are more susceptible to damage by the redheaded pine sawfly than are older seedlings.

Identification. You can identify the larval stage of the redheaded pine sawfly by its bright red head. The mature larva is about 2.5 cm in length, has a white to yellow body, and rows of black spots along its length (Figure 7). When present on seedlings, the insects feed in colonies which literally cover the stem. They prefer the outer portion of the needles but will consume the *entire* needle when their numbers are high enough.



Figure 7. Pine with an infestation of red headed pine sawfly. (Photo courtesy of Clemson University Extension Service.)

Management. Like other insect pests, the redheaded pine sawfly is usually kept in check by unfavorable environmental factors including high moisture levels. Temperature extremes delay larval development. Natural control factors such as nuclear polyhedrosis virus disease, bird and rodent predation, and wasp parasitism keep the redheaded pine sawfly in check as well. Minor infestations can be controlled by picking off the insects and disposing of them (stepping on them works well). More serious infestations can be managed using the proper insecticide.

Summary

This publication will provide you with some help identifying and controlling an insect or disease on your property. Often, if the problem is not serious, you can avoid the use of chemicals by making sure that your trees are well taken care of. If minor infestations do occur, several of these diseases and insects can be controlled through physical removal of the affected plant parts or of the insect. If it is necessary to use chemicals, you should consult your county Extension agent or local garden supply center to make sure that you choose the appropriate chemical and use it properly. For more information, contact your county Extension office.

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For more information, call your county Extension office. Look in your telephone directory under your county's name to find the number.

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