

Management of Pine Bark Beetles Attacking Landscape Pines

Bark beetles attack and kill many landscape pines in Alabama each year. The economic impact is difficult to estimate, but losses are unquestionably high.

The pine bark beetles of major concern in Alabama are the southern pine beetle, the black turpentine beetle, and three species of Ips engraver beetles. Of these, the southern pine beetle has received the most attention and is more dramatic in that large numbers of trees in a small area are often killed. However, year in and year out, black turpentine beetles and Ips beetles are probably as important in landscape settings.

Avoiding or minimizing bark beetle damage requires a basic knowledge of the insect and the ability to identify the problem.

Identification and Detection

The Adults

Though there is a size difference, the three Ips beetles are similar in appearance and are easily distinguished from other bark beetles in that the rearward end of the abdomen is scooped out and spined (4 to 6 spines on each side). The southern pine beetle and black turpentine beetle have a rounded abdomen. The black turpentine beetle is the larger of the two, being about 1/4 inch long. The southern pine beetle is about 1/8 inch long. All of the pine bark beetles are roughly cylindrical and dark brown to black (Figure 1).

Location of Attack and Pitch Tubes

One of the quickest methods of detecting and identifying bark beetle attacks is to note the point of attack and the type of pitch tubes created. Pitch tubes are masses of congealed resin that ooze out of the tree around the entrance hole of a bark beetle.

The black turpentine beetle usually attacks the lower part of a tree from ground level up to 8 or 10 feet. The pitch tubes are an inch or more in diameter and often appear purplish.

Southern pine beetle and Ips beetle attacks usually start well up the tree and then spread up and down the main bole. The pitch tubes of both are dime-sized and white to yellow. Though generally a little smaller, these pitch tubes resemble popped popcorn in color and shape. A pair of binoculars can be a great help in detecting Ips and southern pine beetle pitch tubes, especially for early attacks high in the tree. Severely stressed trees may not produce pitch tubes, in which case, the only signs of early attack will be the entrance holes and brown boring dust on the bark and around the base of the tree.

Gallery Patterns

Unfortunately, Ips and southern pine beetle pitch tubes and location of attacks are almost identical. However, the egg galleries constructed

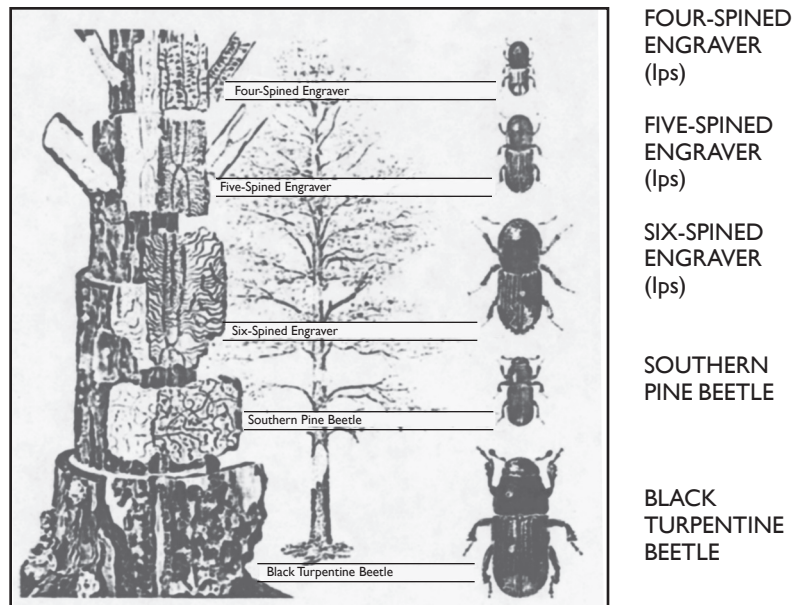


Figure 1. Major pine bark beetles of the South and the trunk areas usually attacked. From top to bottom: small Ips, medium Ips, large Ips, southern pine beetle, and black turpentine beetle. Note distinctive egg gallery patterns.

by the adults between the outer bark and sapwood are different. To examine these galleries, peel off a section of the outer bark with a machete, draw knife, or other suitable tool.

The egg galleries of Ips beetles radiate from a central nuptial chamber and follow the grain of the wood. Usually 2 to 5 females construct galleries from each nuptial chamber, and the resulting pattern is roughly "Y" or "H" shaped. The egg galleries of Ips beetles are usually free from boring dust.

Southern pine beetles create wandering S-shaped egg galleries in the inner bark. The galleries frequently crisscross and are packed with boring dust.

Examination of black turpentine beetle egg galleries is seldom needed for identification, since the pitch tubes and location of attack are distinctive. It is important to keep in mind that since black turpentine beetles attack the lower part of the tree and construct 12- to 18-inch egg galleries downward, the developing brood may be present below the soil surface, which can hinder chemical control efforts.

Needle Symptoms

Ips and southern pine beetles carry a blue stain fungus with them that causes rapid tree mortality when introduced. Therefore, the needles of trees successfully attacked by Ips or southern pine beetles or that are severely attacked by black turpentine beetles will eventually fade, changing from green to light green to yellowish to reddish brown. Unfortunately, the beetle's life cycle can be as short as 30 to 40 days, and, by that time, many beetles may have developed and gone to neighboring trees. Sometimes this happens before the trees begin to fade. To prevent brood development, bark beetle attacks must be detected while

the trees are still green, which requires frequent examinations for pitch tubes. Trees infested by Ips or southern pine beetles should be removed before the breed develops and new adults emerge.

Where infestations of Ips or southern pine beetles are severe, a preventive treatment may be applied to nearby uninfested trees. Preventive treatments require high pressure spray equipment, which usually necessitates hiring a professional applicator. Depending on the chemical chosen, a preventive treatment should last 3 to 12 months. These treatments can be expensive; before treating, carefully evaluate the probability of infestation and the value of the trees.

The black turpentine beetle does not carry blue stain fungi and kills trees primarily by girdling. Therefore, by detecting black turpentine beetle infestations early, remedial chemical control can often be used to save the tree. Contact your regional Extension agent for specific chemical recommendations.

Prevention

All bark beetles, especially the black turpentine and Ips beetles, are attracted to damaged or weakened pines. Trees prone to bark beetle attack include those damaged by construction or other mechanical injury, fire, wind, or ice storms, and those stressed from drought or water-logging and overmature trees. Growing trees on good sites, preventing injury and immediately removing severely damaged trees will aid in reducing pine bark beetle infestations.



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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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