

Black Twig Borer

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Black twig borer (*Xylosandrus compactus*) is a species of ambrosia beetle that can attack and infest both healthy and stressed woody plants. Like all ambrosia beetles, the black twig borer has a symbiotic, or mutually beneficial, relationship with the fungus it carries. In new hosts, the black twig borer introduces and colonizes the fungus as a food source for adults and larvae. This species is native to Southeast Asia but was introduced to Florida in the 1940s and has since spread over much of the southeastern United States.

Description

Adult black twig borers are approximately 1/16 in (1.6 mm) in length and range in color from light brown to black, depending on their age (Figure 1). New infestations are solely caused by adult females, which are usually larger than males and the only ones capable of flight. Adult females will typically create entrance/exit holes less than 1/25 in (1 mm) in diameter on the underside of twigs. Upon entering a host, they introduce a symbiotic fungus that serves as a food resource for the beetles and can clog the water-conducting xylem tissue of the tree. At different times throughout the growing season, all life stages (eggs, larvae, pupae, and adults) can be found inside these

Figure 1: Younger (left) and older (right) black twig borer adults



tunnels, or galleries. The collection of different life stages occurring within a gallery is referred to as a brood (Figure 2).

Figure 2: Infested twig with brood of the black twig borer; wood staining is due to colonization by the introduced fungus



Life Cycle

Adult beetles overwinter in twigs and emerge in early spring. While adult males are largely confined to their host plant, adult females locate and infest new twigs, develop their brood galleries, and deposit eggs. It takes approximately one month for the eggs to mature into adult beetles. This process repeats for the remainder of

the growing season, slowing only when temperatures drop in autumn. Several overlapping generations per year may occur.

Hosts

Black twig borer can infest over 200 plant species, many of which are widely planted in urban landscapes. Common hosts include magnolias, flowering dogwoods, redbuds, and red maples. 'Little Gem' magnolias along coastal regions are especially vulnerable to this insect.

Damage

Damage to the host may be caused by the boring activity of the beetle as well as the growth of the fungus in the wood. Leaves along branches or twigs infested with black twig borers usually wilt or the sapwood dies within a week or two, resulting in branch flagging (Figure 3). Death of the plant tissue generally occurs from the point of attack outward and leaves may die but remain attached due to the rapid tissue death. Cankers may form around the site of borer attack, particularly on larger branches where multiple borers have entered the wood. As the fungus spreads inside the gallery, the central pith may darken (Figure 2).

Management

A stressed tree is more likely to produce ethanol, which serves as a chemical attractant for ambrosia beetles. Proper cultural practices to promote plant health and vigor such as mulch application, irrigation, and soil amendments based on soil analysis can decrease the likelihood of attack. Product applications for black twig borer should be made preventatively, as the beetles cannot easily be managed once inside the host. Even if signs of infestation are present, treatments can limit further colonization. Affected twigs or branches should be pruned and removed to limit further infestation. Please contact your Bartlett Arborist Representative to learn about management strategies.

Figure 3: Leyland cypress branch flagging due to black twig borer infestation



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