RESEARCH LABORATORY TECHNICAL REPORT

BARTLETT TREE EXPERTS
SCIENTIFIC TREE CARE SINCE 1907

Asian Longhorned Beetle

By The Bartlett Lab Staff
Directed by Kelby Fite, PhD

Asian longhorned beetle (ALB), *Anoplophora glabripennis*, is a destructive pest of maple and other deciduous trees. ALB was introduced from China on untreated wood products such as pallets or dunnage, packing material used to cushion cargo. This pest was first discovered in the United States in Brooklyn, NY, in 1996 and later discovered in New Jersey, Ohio, Long Island, Chicago, and Worcester, MA. ALB larvae bore into stems and branches of host trees creating galleries (tunnels) that interrupt water and nutrient transport resulting in dieback and decline of the plant. Galleries can be so extensive that branches can become structurally unsound and prone to failure.

Identification

Adults are shiny black with white spots, 0.75-1.5 inches (2-4 cm) long with antennae that are longer than the body (Figure 1). Antennae have alternating black and white stripes. Larvae are grubs that can grow to more than 2 inches (5 cm) in length and feed within the wood of stems and branches (Figure 2).

Figure 1: Asian longhorned beetle adult

Life Cycle

Adults emerge from stems and branches in spring through early fall. Emergence holes can be more than 3/8 inch (1 cm) in diameter and may ooze sap (Figure 3). Sawdust (frass) may be visible near the emergence wounds. Adults are not strong fliers and tend to remain on or near the host from which they emerged where they feed on leaves causing notches on foliage.

Following mating, females chew dime-sized depressions in the bark where they deposit eggs. These oviposition wounds often occur in the upper portion of the crown. Each female can lay up to 120 eggs. Eggs hatch soon after deposition and larvae bore into the

Figure 2: Larva

Figure 3: Adult emergence hole, larger than the diameter of a pencil

wood on stems and branches. Larvae feed in the outer sapwood near the bark surface when they are young, but eventually tunnel deeply into the wood as they grow larger. Galleries created by the larvae interrupt water and nutrient transport and are responsible for dieback, decline and death of the tree. Larvae complete development the following spring and pupate within the galleries and emerge as adults. One generation occurs each year.

Management

ALB is a regulated pest that requires establishment of a quarantine by the US Department of Agriculture when infested trees are detected. Surveys are conducted to define the extent of the infestation, and infested trees are then removed and destroyed. Infested trees are considered those that have emergence holes and/or oviposition wounds. Buffer zones are usually created whereby non-infested host trees in the vicinity of infested ones are removed or chemically treated in an attempt to eradicate the pest and reduce the risk of spread. However, chemically treated trees with oviposition wounds or emergence holes are subject to removal under quarantine regulations. Regulated articles may not be removed from the quarantine areas. Regulated articles include: firewood from all deciduous (hardwood) tree species and both living and dead plant material from all preferred or occasional hosts. This encompasses nursery stock, live plants, logs, branches, roots and plant debris larger than ½ inch in diameter.

Preferred Hosts
Acer (Maple)
Aesculus (Horsechestnut, buckeye)
Betula (Birch)
Salix (Willow)
Ulmus (Elm)

Occassional Hosts (Less Preferred)
Albizia (Mimosa)
Celtis (Hackberry)
Fraxinus (Ash)
Cercidiphyllum (Katsura)
Koelreuteria (Golden rain tree)
Platanus (Sycamore, London plane)
Populus (Poplar)
Sorbus (Mountain ash)

Inspections

Within and near regulated (quarantine) areas, host trees should be carefully inspected by a certified arborist trained in ALB detection techniques. Trees with active infestations should be reported to USDA personnel. Infested trees should be removed immediately when ALB is detected during the growing season. If detected in the dormant season, removals must be performed prior to spring.

Treatment

Treatment options for prevention and control are available. Please consult your Bartlett Arborist Representative to discuss various control options.

Founded in 1926, The Bartlett Tree Research Laboratories is the research wing of Bartlett Tree Experts. Scientists here develop guidelines for all of the Company's services.