

Asian Longhorned Beetle: Questions and Answers

Q. What is an Asian longhorned beetle?

A. The Asian longhorned beetle (ALB) is a large, bullet-shaped beetle about 1 to 1.5 inches long. Shiny and black with white spots, it has exceptionally long antennae that are banded with black and white. The elongated feet are black with a whitish-blue upper surface. Although its size and large mandibles cause it to appear threatening, the beetle is harmless to humans and pets. In the larval stage, the white, worm-like beetles bore into live trees causing sap to flow from wounds and frass (sawdust and other insect waste) to accumulate at tree bases. Left undetected, the ALB will girdle the vascular system of trees eventually causing the tree to wither and die.

Q. Why should the United States be concerned about ALB?

A. The ALB is a serious threat to U.S. trees. ALB larvae bore deep into deciduous hardwood trees such as maple, birch, horse chestnut, poplar, willow, elm, and ash, eventually killing them. Damage from infestations in Illinois, New Jersey, and New York has resulted in the removal of more than 30,000 trees and costs to State and Federal governments in excess of \$269 million since the discovery of the infestations in 1996. If the ALB were to expand beyond the current quarantined areas of Illinois, New Jersey, and New York, it has the potential to wreak havoc nationwide, affecting such industries as lumber, maple syrup, nursery, and tourism and causing more than \$41 billion in losses.

Q. How did the beetle get here?

A. ALB, which is primarily found in China and areas of Korea and Japan, probably hitchhiked here in solid wood packing material (SWPM), such as crates and pallets, which accompany commodities moving into the United States.

U.S. trade with China has increased exponentially over the past decade. In 2000, imported commodities from China to the United States exceeded \$100 billion. As a result, the risk of this plant pest as well as the potential of other invasive insects, plant

diseases, and weeds being introduced into the United States has increased as well.

Q. Can the United States stop importing goods from China, Japan, and Korea to avoid these pests?

A. No. Instead, the U.S. Department of Agriculture's (USDA) Animal and Plant Health Inspection Service (APHIS) works with the authorities of these countries to take steps to prevent future infestations of ALB and similar pests. These steps include placing restrictions on SWPM and imposing treatment requirements for these materials before they arrive in the United States.

Q. What is being done to prevent further infestations from occurring?

A. In 1998, APHIS published an interim rule immediately requiring that all SWPM from China be completely free of bark and live plant pests and be treated with either preservatives, heat, or fumigation prior to arrival in the United States. Effective September 16, 2005, all wooden packaging materials (e.g., pallets, crates, boxes, and dunnage) imported into the United States from all countries must be heat treated or fumigated with methyl bromide and marked with the International Plant Protection Convention (IPPC) logo and appropriate country code designating the location of treatment.

APHIS analyzes threats to U.S. agriculture and develops rules for importing commodities based on the risks they present. APHIS provides the U.S. Department of Homeland Security inspectors at U.S. ports of entry with pest alerts, outreach material targeting importers, and the necessary training to increase overall vigilance during import inspections.

These inspectors form the first line of defense against exotic plant and animal pests and diseases. All international passenger baggage, cargo, packages, mail, and conveyances are subject to inspection upon entry into the United States. APHIS has worked with industry, cooperators, and the public to heighten awareness of the ALB to help increase detection. APHIS is also conducting thorough surveys in high-risk areas where potentially infested cargo has been imported.

The tremendous volume of imported cargo makes it impossible to visually inspect every shipped item for evidence of an infestation. However, based on port of entry inspections—which include confirming that all imported SWPM is marked with the IPPC logo—we know that more than 98 percent of imported SWPM

is in compliance with current regulations. When noncompliant material is identified, it is immediately quarantined and promptly shipped back to the exporting country until compliance has been met. If infested packing material is found, in most cases, the infested material must be separated from the imported products and immediately destroyed.

When an ALB is found in cargo at a port of entry, APHIS also identifies the cargo shipment's intended destination, and officials inspect the storage facility and previous shipments that may have been imported from the same area. Surveys are conducted in the vicinity around warehouses with infested cargo to determine if beetles have escaped into the environment.

More information about Federal regulation and related SWPM compliance can be reviewed by visiting www.aphis.usda.gov and clicking on "Wood Packing Materials" under "Hot Issues."

Q. Where in the United States has ALB been found?

A. Most recently, the ALB was found on Prall's Island and Staten Island, NY, in March 2007. The ALB was first discovered in August 1996 in the Greenpoint neighborhood of Brooklyn, NY. In July 1998, the ALB was found in the Ravenswood area of Chicago, IL. In October 2002, the ALB was detected in Jersey City, NJ. In 2004, the ALB was discovered in the Borough of Carteret, the Avenel section of Woodbridge Township, and the cities of Rahway and Linden, NJ. In 2005, three beetles were found on the grounds of a warehouse in Sacramento County, CA; however, surveys indicate that this find was an isolated incident and the ALB did not infest the surrounding area.

In the past decade longhorned beetles have been found inside warehouses in: Mobile, AL; Hawthorne, Los Angeles, and South Gate, CA; Fort Lauderdale, FL; Martin Grove, IL; Indianapolis and Porter County, IN; Lansing and Warren, MI; Charlotte, NC; Camden, Cream Ridge, Linden, Mahwah, New Brunswick, and Secaucus, NJ; Jamestown and Rochester, NY; Cincinnati, OH; Lycoming County and Sinking Springs, PA; Charleston, SC; Houston, TX; Bellingham and Seattle, WA; and Sauk County, WI.

Q. How does APHIS survey for these pests?

A. In the absence of a trap, APHIS and cooperating State inspectors must tackle the difficult task of surveying beetle-infested areas by examining individual trees for signs of beetle damage. State and local government cooperators include the New York State Department of Agriculture and Markets, New York State Department of Environmental Conservation, City of New York Parks and Recreation, Illinois

Department of Agriculture, City of Chicago Department of Streets and Sanitation's Bureau of Forestry, New Jersey Department of Agriculture, and the New Jersey Department of Environmental Protection. APHIS also contracts with local tree service professionals for bucket truck and tree climbing services. In addition, USDA's Forest Service contributes resources to APHIS' tree inspection effort.

Inspectors search for exit holes, egg deposit sites, piles of frass at the base of infested trees and in branch crotches, and sap leaking from wounds in the trees. Unseasonable yellowing and drooping of leaves when the weather has not been especially dry are also signs that the ALB may be present. Leaf symptoms show up when the immature insects, growing inside the tree, have bored through tissues that carry water from tree roots and nutrients from the leafy canopy above. Once the pest has sufficiently disrupted those pathways, the infested branch or the entire tree will die.

Inspectors use innovative methods to conduct ALB surveys. Trained professionals perform aerial tree inspections using bucket trucks, and USDA and State tree climbers inspect trees in difficult areas. Many interest groups and organizations participate in ground observations. Anyone with a keen eye and set of binoculars can contribute to this effort.

Q. Is there an effective treatment to control or destroy these pests?

A. Although treatments exist to control ALB-infested cargo, the ALB is not easily controlled once it is introduced into the environment. Because the majority of the beetle's life is spent deep within the heartwood of host trees, it is difficult to control using contact insecticides. Although costly and undesirable, the only assured method of eliminating the beetle is to cut and chip or burn infested trees and replace them with nonhost species.

The use of the insecticide imidacloprid has shown to decrease beetle populations and help in preventing the spread of ALB and has become an additional effective control tool in the eradication of this pest. Imidacloprid is a systemic insecticide that, when applied directly into the trunk of a tree or injected into the soil near a tree, moves quickly upward into stems, twigs, and foliage where the beetles would be expected to feed and lay eggs.

Research to attain additional survey and control options remains ongoing. Scientists continue to experiment with new chemicals, application methods, biocontrol methods, and devices to detect ALB-infested trees.

Q. What can homeowners do to prevent ALB from attacking their trees?

A. Homeowners can assist officials in preventing an

infestation in several ways. By cooperating with officials, allowing them to survey trees, remove ALB-infested trees along with high-risk exposed trees, and treat noninfested susceptible host trees, homeowners can help prevent further devastation. When planting yard or ornamental trees, homeowners within regulated areas should select varieties that ALB does not prefer. Host trees—meaning trees that the ALB likes to attack—include maple (Norway, sugar, silver, and red), birch, horse chestnut, poplar, willow, elm, ash, mimosa (silk tree), hackberry, sycamore, mountain ash, and London plane. Homeowners should adhere to current quarantines and regulations in their area concerning the movement of host material, firewood, and other wood products.

Homeowners may also visually inspect tree health by keeping a close watch for signs of distress that may occur as the result of an infestation. Indicators of distress may include dead leaves during normal seasonal conditions, excessive sawdust buildup near tree bases and tree crotches, excessive sap oozing from trees, and random holes in trees measuring approximately three-eighths of an inch or about the diameter of a dime.

If any signs or symptoms of an ALB infestation are observed, immediately contact the State Department of Agriculture, County Extension office, or USDA-APHIS office.

Additional Information

Additional information about this and other APHIS programs is on our Web page <http://www.aphis.usda.gov>. For details specific to the Asian longhorned beetle, click on "Newsroom," "Hot Issues," "Asian Longhorned Beetle."

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