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Ash/Lilac Borer

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ASH/LILAC BORER

Biology, Description, and Habits

The ash borer, also known as the lilac borer, belongs to a group of insects known as the clear-winged moths. The wings of most moths in this group are at least partially transparent (devoid of the colored scales that coat the wings of most butterflies and moths). Many of them mimic bees or wasps and, unlike most moths, fly during the day.

Adult ash borers mimic the common paper wasp in color, size, shape, and flight habits. Both the dark colored forewings and the transparent hindwings are narrow. The slender body varies in color from yellow to brown- black and may have several indistinct orange or reddish-orange bands around the abdomen. The wingspan varies from 1-1 2/5 inches. Females are somewhat larger than males.

In addition to Utah, ash borers are generally distributed throughout the United States and Canada. They feed primarily in the trunks and larger limbs of lilac, ash, and privet, but occasionally attack related plants. Significant damage in Utah has been reported only with ash, primarily in European, blue, and green ash. Adults may emerge from infested hosts as early as late March (but usually late April) and continue until mid-July. Females emit a pheromone (a hormone released into the environment) which serves to attract males. Within 7-14 days after emergence, the females begin depositing the tan, elliptical eggs in cracks, crevices, and wounds in the bark. The eggs hatch within 14 days, and the larvae (immatures) bore into the plant.

Initial feeding occurs just beneath the bark and later extends into the sapwood. Larvae continue to feed in the sapwood as the summer progresses. Their burrows eventually turn upwards and terminate just beneath the bark surface by the end of the season. Larvae enlarge their tunnels as they grow, frequently pushing frass (a mixture of wood fiber and excrement) out of the burrow opening. Completed burrows may be over 12 inches long and 1/3 inch wide. Full grown larvae are about 1 inch long and white with a brown head. Winter is passed as mature larvae in the heartwood.

In the spring the larva cuts an emergence hole in the bark, leaving a thin flap of tissue over the hole. Pupation (formation of a cocoon) occurs in the burrow. When development is complete, the pupa wriggles down the tunnel, pushes through the protective flap and emerges as an adult moth. The reddish-brown pupal cases are left protruding from the plant. There is one generation produced each year in Utah.

Symptoms and Damage

Newly infested plants can be distinguished by the frass which is pushed out of the burrows by the larvae. Older infestations are characterized by burrow exit holes and protruding empty pupal cases.

Frass extruding from larval burrows detracts from the appearance of ornamental plantings. Heavy infestations decrease plant vigor, increase the potential for wind damage, and may kill individual branches or even entire plants.

Other borers that attack ash in Utah are the redheaded ash borer and the banded ash borer. However, the ash borer is the most common damaging species, particularly of poorly sited or maintained ash trees.

The ash borer is more severe when plants are growing under stressful conditions. Proper care and planting to relieve future stress can greatly limit attacks. Fresh pruning wounds are highly attractive to egg-laying moths. It is important to avoid pruning prior to periods when moths fly.

Control

The preferred control technique is to apply preventative insecticide sprays to the trunk and larger limbs during the egg-laying period to kill newly hatched larvae before they can bore into the bark. The initial application should be made within 10-14 days of adult emergence. In a recent study in California, a single application of chlorpyrifos 10-14 days after males were first captured in traps effectively protected ash trees from infection.

The initial application can best be timed by monitoring adult emergence with commercially available synthetic pheromone traps. We recommend putting traps out about the middle of April. In Colorado in 1988, the first captures occurred during the week of April 23 - 29. In the California study, it was reported that this synthetic clearwing moth sex attractant was effective for 75 days in Sacramento County. Unfortunately, pheromone traps for this insect are not readily available in small quantities in Utah. If pheromone traps are not used, make the first pesticide application about May 1.

Insecticides that may be used as preventative ash borer sprays include Dursban (chlorpyrifos), Thiodan (endosulfan), and Lindane. Tests conducted by Salt Lake County Extension personnel indicate that Dursban is the product of choice (if Dursban is used, control can usually be obtained with a single application). Homeowners may purchase Dursban in several products including Dexol Dursban Lawn Insect Killer, Cooke's Dursban plus lawn insecticide, Hi-Yield Borer Killer containing Dursban, and Lilly/Miller Dursban Insect Spray. Thiodan is not specifically registered for lilac borer control but may be legally used for this purpose. Thiodan may be purchased as Lilly/Miller Thiodan Insect Spray or Cooke Garden Insect Spray. Lindane may be used on lilac and ash but is not registered for application to privet. It may be purchased as Ortho Lindane Borer and Leaf Miner Spray.

An additional product, Turcam (bendiocarb), may be used for borer control in ornamentals. This material is registered for use by commercial applicators only.

Preventative applications for control of ash borer in lilac and privet have rarely been

justified in Utah. Removal of stems larger than 1 inch in diameter will eliminate the moths' egg-laying sites on these plants.

Related Insects

Several longhorned beetles also attack ash although they limit attacks primarily to dying trees and are much less important than the ash borer in landscape plantings.

The banded ash borer, *Podosesia aureocincta*, of the eastern United States, has not been captured in pheromone traps in Utah. However, isolated infestations may be established or become introduced on infested plants. This species flies and lays eggs in late summer. It is attracted to the same pheromone used for the ash borer.

Precautionary Statement

All pesticides have both benefits and risks. Benefits can be maximized and risks minimized by reading and following the label. Pay close attention to the directions for use and the precautionary statements. The information on pesticide labels contains both instructions and limitations. Pesticide labels are legal documents, and it is a violation of federal and state laws to use a pesticide inconsistent with its labeling. The pesticide applicator is legally responsible for its proper use. Always read and follow the label.

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