

PECAN INSECTS

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LEAF FEEDERS

Aphids

Aphids are soft-bodied, sucking insects that appear in the summer and fall. Usually serious numbers do not develop until the late summer. There are two species involved, the black pecan aphid (greenish black) and the yellow aphid. Damage consists of sap removal which causes leaves to turn yellow or brown and fall. Heavy infestations may reduce the nut crop the current year and/or the following year. Aphids are considered secondary pests and often buildup following the use of pesticide sprays.

The black pecan aphid prefers the shady, inner parts of the tree, and is typically a late season pest. The first sign of leaflet injury is bright yellow areas where the insects have fed. These areas later turn brown and leaves drop due to the toxin injected into the leaf. Yellow aphid infestations often result in growth of sooty mold due to honeydew secretions. Organophosphate insecticides appear more effective against black aphids.

The economic threshold for black aphids is an average of one aphid or damaged area per compound leaf. The threshold for yellow aphids is 10 per compound leaf. No more than 2 pyrethroid applications should be used in order to prevent development of resistance by aphids. A winter cover crop of crimson clover or hairy vetch within the orchard is beneficial. In the early spring, beneficial insects can build up in numbers by feeding on pea aphids and other insects found on these cover crops.

Aphids over winter as eggs laid in bark crevices on the tree. Aphids emerge in the spring and soon begin to reproduce asexually. Many generations occur each year.

Mites

Feeding with sucking mouthparts, mites remove the cell contents of leaves. These pests attack the undersides of the leaves, typically around the midrib, causing irregular brown areas. These scorched areas begin at the midrib and spread outward. Heavily infested trees may lose leaves or appear scorched. Use of Sevin or pyrethroid insecticides may lead to mite outbreaks.

Mites are light green in color and just large enough to see without a hand lens. Often tapping an infested leaf over

a white sheet of paper will aid in identification. Mite colonies produce webs in which cast-skins and eggs may be found. The life cycle is short, and many generations occur each year.

Pecan Phylloxera

This aphid-like pest produces galls on new pecan growth. Leaves, twigs and nuts may be affected. Phylloxera over winter as eggs in bark crevices. In the spring eggs hatch and the tiny nymphs feed on tender young growth, secreting a substance which stimulates plant tissues to develop into galls. When the nymph matures, eggs are deposited in the gall. Young nymphs develop within the gall. The gall splits in several weeks liberating them. Several generations are produced each year, as long as there is fresh young growth on the tree.

Control is initiated with the use of a dormant oil application. During the growing season, controls should target the "crawler" stage before the galls form. Once the gall is formed the damage is done. The crawler is active just before or at bud-break. Controls initiated after the start of gall formation are not effective.

TRUNK AND TWIG FEEDERS

Shot-hole borer

Shot-hole borers tend to attack devitalized trees. Larvae feed in the wood and emerge as adults through small round holes in the bark (1/8 inch). Since this insect feeds on dead or dying wood, remove prunings and dead limbs from the orchard and burn them. Adequate fertilizer and water will keep the trees healthy and prevent infestation by this pest.

Twig girdler

The adult twig girdler girdles twigs and small branches, such that they are weakened and fall off the tree. The insect is active late in the summer and fall. Secondary branching may occur around these sites and the number of bearing twigs reduced. This insect is particularly common near timberland containing hickory or persimmon.

The twig girdler is a grayish brown beetle, 1/2 to 5/8 inch long, with a broad gray band over the wing covers. Its head is reddish brown and bears a pair of long antennae, which extend beyond the abdomen on the

male. The larva is a white legless grub about 3/4 inch when mature. The insect overwinters as a partially grown larva in a twig either in the tree or on the ground. It develops rapidly in the spring, feeding on the dead wood in the twig. Following pupation, the adult emerges in August or September.

The female girdles the twig and deposits her eggs in the severed portion, the larva is unable to develop on healthy wood. Eggs hatch and larvae feed, but remain small until the following spring. Infestations may be reduced by removing girdled twigs in the fall and winter and burning them. Girdled twigs from surrounding hickory and persimmon trees need to be destroyed as well.

Flat-headed Apple Tree Borers

Flat-headed apple tree borers attack primarily unhealthy or newly transplanted pecan trees by burrowing into the bark and sap wood of large branches and the trunk. Often darkened depressed areas with traces of frass are evidence of their activity. Beneath these areas, shallow galleries packed with sawdust may be observed. Burrows are usually on the sunny side of the trunk or branch, but this insect may girdle young trees (often less than 2" in diameter).

The insect is about 1/2 inch with a blunt head and tapering abdomen. The body is metallic dark green, corrugated, and flattened. The larva is creamy white, legless, and flattened and broadened immediately behind the head. This insect overwinters as a larva in the tree. Adults emerge in the spring or summer. Females lay eggs in bark cracks and injuries. There is one generation per year.

These insects are attracted to trees in a devitalized condition induced by transplanting shock, drought, sun scald, wounds, or poor growing conditions. Keep trees well watered and moderately fertilized. Young or transplanted trees should be wrapped from ground level to the branches with burlap or heavy paper. Tie wrapping material with twine and leave in place for two years. Make sure the twine does not girdle the tree. Remove dead and dying limbs and trees from the orchard each year and burn them before the following spring. If practical, remove borers from infested trees with a thin wire.

NUT FEEDERS

Shuckworm

Shuckworms can be one of the more destructive pests of pecan. These are white worms that grow to 3/8 inch and tunnel in small nuts causing them to drop in July and August. After shells harden, larvae tunnel in shucks and prevent kernels from developing properly. This can delay nut maturity. Shuckworm can stain the nuts and cause part of the husks to adhere to the shells. There can be two generations.

Shuckworms overwinter as full grown larvae in shucks on the ground or on the tree. They pupate within the shuck in late winter. Growers not equipped to spray should gather and destroy the shucks at harvest. The drops (small nuts) should be gathered and destroyed during midsummer. If the orchard is cultivated, you can reduce damage by covering the shed nuts with soil in July and August. A disk set to turn soil to a depth of three inches will cover most of the nuts and cause them to decay before larvae complete development.

Stink bugs and plant bugs

These sucking insects feed on the developing kernels and cause an injury known as black pit. Injured nuts may fall from the tree prior to maturity. Feeding occurring after the shells have hardened results in brown or black spots on the kernels that taste bitter.

These insects overwinter as adults in ground litter and weeds. While adults can frequently be found on trees while nuts are developing, nymphs do not develop on pecan trees. Nymphs develop on weeds. To control these insects, weeds should be kept down during the growing season. Winter cover crops should be mowed early, before these insects come out of hibernation.

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