How to Identify and Control Pecan Nut Casebearer

by Charlie Graham, Ph.D., senior pecan specialist | cjgraham@noble.org

There are more than 200 insects that feed on the roots, wood, foliage and nuts of a pecan tree. Of these insects, 17 are nut feeders, with one of the most important nut-infesting insect pests being the pecan nut casebearer (*Acrobasis nuxvorella* Neunzig).

WHERE ARE CASEBEARERS FOUND?
The pecan nut casebearer (PNC) has a wide geographical range, extending from Florida to southeastern New Mexico, and north to southern Illinois. This covers most of the pecan producing regions in the U.S., excluding Arizona, California and parts of New Mexico.

Native geographic distribution of pecans and the pecan nut casebearer.

WHAT THE PECAN NUT CASEBEARER LOOKS LIKE

Figure 1. Silk and black frass (excrement) are visible outside infested nuts.

LARVAE

Newly hatched larvae are white with a brown head. They have three pairs of legs located just behind the yellowish brown head. The tiny larva feeds for a day or two on a secondary bud at the base of a compound leaf before it enters the pecan nut. Larvae generally tunnel in at the base of the nutlet and feed for about four to five weeks, depending on the temperature. Silk and black excrement are often visible outside of the infested nuts (Figure 1). As the larvae mature, they become olive to jade green in color and are about a half inch in length. Full grown larva enter the pupal stage inside the nut with the mature moth emerging nine to 14 days later.

EGGS

Moths are active at night when seeking a mate. Each female lays 50 to 150 eggs during her five- to eight-day lifespan. The eggs are flat, very small and white when newly laid but are large enough to be seen with the unaided eye (Figure 2). They develop red dots/lives after two or three days (appearing pinkish in color) and turn entirely red before hatching.

ADULT MOTHS

Adult PNC moths are generally about 0.3 to 0.4 inches long and range in color from a brownish gray to a grayish black. PNC moths have a unique raised ridge of dark scales extending across the middle of each front wing. When the wings are folded back, this ridge looks like a dark line running across the width of the insect just behind the head (see arrows in Figure 3).

WHERE TO FIND PNC TRAPS AND PHEROMONES

ALPHA SCENTS
1089 Willamette Falls Drive, West Linn, OR 97068
Phone: 503-342-8611 or 971-998-8248
Fax: 314-271-7297
www.alphascents.com

GEMPLER’S
P.O. Box 44993
Madison, WI 53744-4993
Order by Phone: 1-800-382-8473

GREAT LAKES IPM INC.
10220 Church Road
Vestaburg, MI 48891-9746
Phone: 989-268-5693 or 989-268-5911
Toll Free: 1-800-235-0285
Fax: 989-268-5693
Email: glpm@nethawk.com
www.greatlakesipm.com

ISCA TECHNOLOGIES / MORITOR TECHNOLOGIES
P.O. Box 5266
Riverside, CA 92517
Phone: 951-685-5008
Fax: 815-346-1722
Email: info@iscatech.com
www.iscatech.com

OLIVER PECAN CO. INC.
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Phone: 1-800-657-9291
Email: soliver@centex.net

PAPE’S PECAN HOUSE
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Seguin, TX 78155
Phone: 830-379-7442

SOUTHERN NUT ‘N TREE EQUIPMENT INC AND PPI
324 SH 16 South
Goldthwaite, TX 76844
Phone: 1-800-527-1825
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Email: sales@pecans.com
www.snktequipment.com

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Adair, OK 74330
Phone: 918-785-3061
Order Center: 866-785-1313
Fax: 918-785-3063
Email: custserv@trec.com
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HOW DO YOU CONTROL CASEBEARERS?
Casebearer larva tunnel into nutlets shortly after pollination, often destroying all nutlets in a cluster. The most reliable method of control is a properly timed insecticide application to the tree to kill the recently hatched juveniles before they can enter the young nutlets. However, treatment is a judgement call based on moth catch, egg scouting and pecan crop load. So part of this equation depends on properly identifying the adult male moths captured in orchard traps.

WHEN DO CASEBEARERS CAUSE THE MOST DESTRUCTION?
First-generation larvae are usually considered to cause the most economic loss. This early in the season, a single larva can destroy an entire nut cluster due to the small nutlet size. Later generations will typically only have to feed on a single nut to complete development. For this reason, control is directed primarily at the spring generation.

WHEN SHOULD I SPRAY FOR CASEBEARERS?
There is a fairly small window of opportunity for insecticide applications to control newly hatched casebearer larvae. Once the larva has bored into the nutlet, they are protected from insecticide treatments. As mentioned earlier, the necessity of control measures is determined on the severity of the infestation and the size of the nut crop. The alternate bearing cycle of pecan trees often has an impact on your management decisions. In the “on” years, when the crop load is heavy, many growers will opt not to treat and allow PNC to naturally thin excessive nuts from the tree. However, in the “off” years, when the crop load is light or if the infestation levels are severe, treatment will be necessary to maintain a commercial crop load on the trees.

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HOW DO I KNOW HOW BAD AN INFESTATION I HAVE?
Determination of the infestation severity is based on egg counts on nut clusters. To pinpoint when you should be scouting for egg lay, many growers rely on monitoring PNC pheromone traps (Figure 4).

WHAT IS A PHEROMONE TRAP?
The pheromone trap uses a lure containing PNC female pheromone that attracts males looking to find a mating partner. You will need to monitor the traps often — at least three times per week — and record the first capture of male PNC moths. The optimum time to apply an insecticide to control PNC larvae is about 14 days following the first capture. However, this is also the time that misidentification can have the greatest impact on your spray program.

WHAT IMPOSTERS SHOULD I WATCH FOR?
A common imposter moth that can be caught in the pheromone trap before PNC flight is the pecan bud moth. It is slightly larger than the PNC moth and lacks the raised wing scales on the forewings. Its numbers increase in the orchard earlier than PNC, but it does not feed on the young pecan nutlets. Misidentifying moths in the trap can result in wasted hours scouting for eggs. If this is the case, then the insecticide will be applied before any PNC are in the orchard. This is not a recommended protocol.

HOW MANY TRAPS SHOULD I SET, AND WHERE?
Three to five traps are usually adequate for orchards smaller than 50 acres. Larger orchards will utilize more than five traps to provide adequate coverage. You may want to use additional traps if your orchard has considerable changes in topography, such as a river bottom site transitioning to an upland site. Traps are usually attached to a nut-bearing limb at an easily accessible height to allow easy monitoring. While it is true that traps placed higher in the canopy will capture more moths, you must remember that you are monitoring moth activity, not the actual number of moths captured.

WHAT ELSE SHOULD I KNOW WHEN SPRAYING FOR PECAN NUT CASEBEARER?
Before purchasing and applying any insecticide, always read the label to determine if the product is labeled for use on the target plant or site. Many insecticides are labeled for controlling pecan nut casebearer on pecans. Base your insecticide choice on applicator safety, grazing restrictions if livestock are present, and potential impact of the insecticide on beneficial insects and other pests. Thorough spray coverage, accurate timing to treat hatching larvae, using recommended insecticide rates and proper sprayer calibration are critical for achieving good control of the pecan nut casebearer.