

Pecan Nut Casebearer

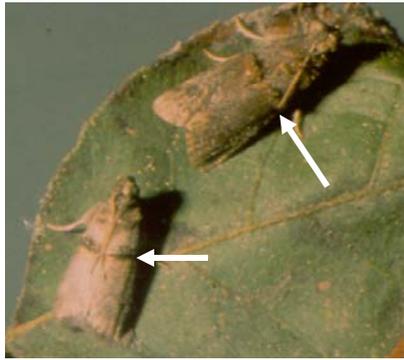
Michael J. Hall

Distribution:

The pecan nut casebearer is found in most pecan producing regions of Louisiana.

Description, Life Cycle, and Damage:

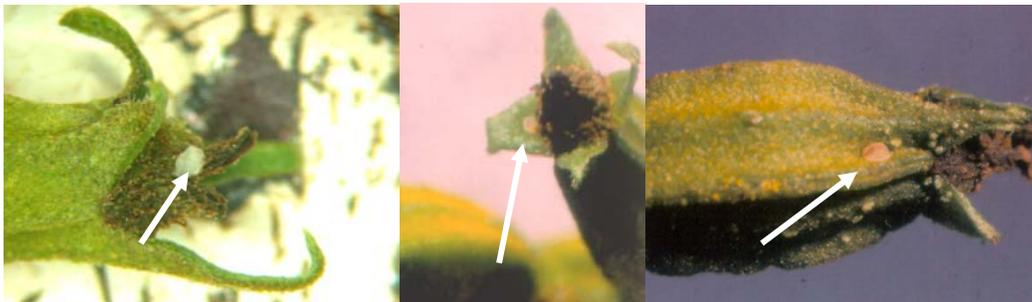
The adult pecan nut casebearer, *Acrobasis nuxvorella* Neunzig, is a small, light-gray moth about one-quarter of an inch in length (Fig. 1). Near the base of the forewings is a ridge of dark scales. When the wings are folded back, this ridge looks like a dark line running across the width of the insect just behind the head (see arrows in Fig. 1). Because the adult casebearer is nocturnal, the moths are rarely seen.



Photograph by Allen Knutson

Figure 1. Adult pecan nut casebearer.

The egg of the pecan nut casebearer is small and white when laid (Fig. 2a). As the egg develops, it takes on a pinkish color. Just before hatching, the egg becomes dark pink to red (Fig. 2b and 2c).



Photograph by Bill Ree

Photograph by Bill Ree

a

b

c

Figure 2. Pecan nut casebearer eggs.

Newly hatched larvae of the pecan nut casebearer are white with a brown head. They have three pairs of legs located just behind the head. As the larvae mature, they become olive to jade-green in color. Mature larvae are about one-half inch in length.

The pecan nut casebearers overwinters as larvae in individual silken cocoons called hibernacula (see arrow in Fig. 3). Hibernacula can usually be found attached to the base of the buds. Because the hibernacula are similar to the buds in color, they can be hard to spot. The larvae become active in the spring, as the buds begin to open. Since nuts are not yet present, the larvae feed on the buds and the young expanding shoots. Pupation may take place within the shoots or the larvae may move out to pupate under the bark of large limbs.



Figure 3. Pecan nut casebearer hibernacula.

In May, the adults emerge from the pupae, mate and lay eggs on the tips of the young nutlets (Fig. 2). After hatching, the larvae enter the nutlets and begin to feed. This first generation is the most destructive. All of the nuts within a cluster can be destroyed by a single larva (Fig. 4). Infested nuts can be easily recognized by the frass (fecal pellets) protruding from the holes at the base of the nutlets (Fig. 5). The frass and the damaged nutlets are held together on the terminal by silken threads.



Figure 4. Pecan Nut Casebearer Larva



Figure 5. Nuts damaged by casebearer.

Pupation takes place within the nut. The adults generally emerge from late June through early July. The larvae of subsequent generations also attack the nuts; however, the losses are not as severe since the nuts are larger, and fewer nuts are required for the larvae to feed on to complete development. The emergence pattern of 1st and 2nd generation pecan nut casebearer in northwest Louisiana is graphically illustrated in Figure 6.

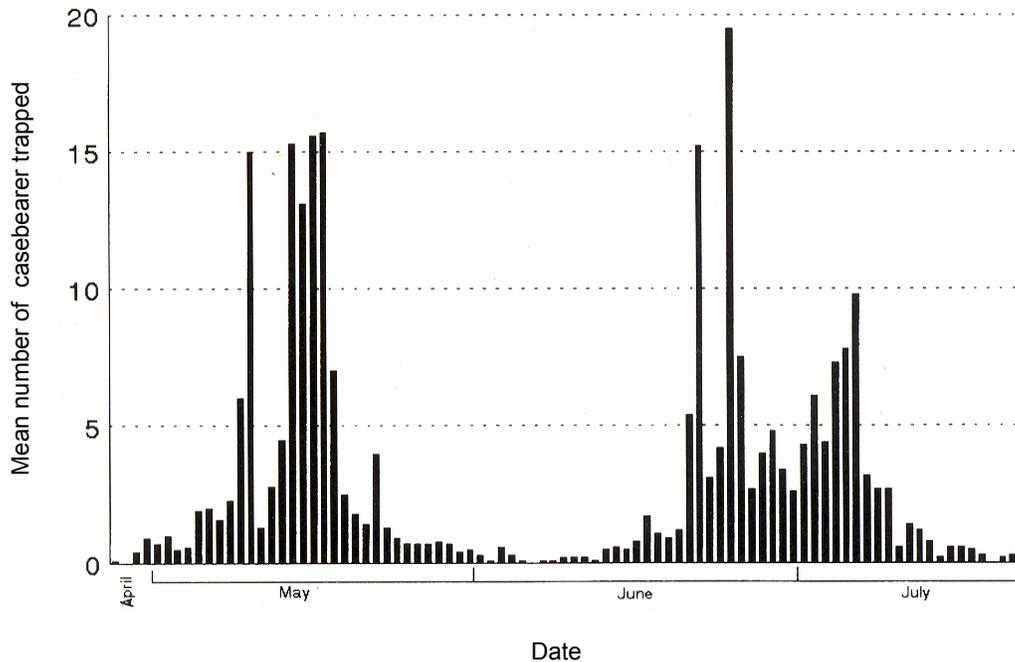


Figure 6. Seasonal emergence pattern of the pecan nut casebearer at the LSU AgCenter, Pecan Research-Extension Station, Shreveport, Louisiana.

Control:

Infestations of pecan nut casebearers are controlled primarily with insecticides. For a list of insecticides that can be used for controlling pecan nut casebearer and the rates of application refer to the Louisiana Recommendations for Control of Pecan Insects. This can be found at www.lsuagcenter.com. The insecticide applications are directed at the first generation. Subsequent generations are normally not a problem and are often controlled when insecticide applications are made to control other pests, such as the nut curculio or the hickory shuckworm. Whether control measures are needed or not depends on the severity of the infestation and the size of the nut crop. In years when the crop load is heavy, the pecan nut casebearer can provide a natural way to thin excessive nuts from the tree. However, if the crop load is light or if the infestation levels are severe, control measures may be warranted.

Before using insecticides, determine if pecan nut casebearers are present in the orchard and, if present, the severity of the infestation. This can be done using pecan nut casebearer pheromone traps and inspecting nut clusters for egg lay. The pheromone

traps will indicate the presence of adult moths and provide a way to monitor their activity. By inspecting nut clusters for eggs you can determine the degree of infestation and, based on the color change associated with the maturation of the egg, you can then determine the optimum time to apply an insecticide. Ideally, insecticide applications should be made when the majority of the eggs are pink in color.

Begin looking for eggs on or before May 1 and continue through May 30. During years of heavy crop loads, treat only when 5%-10% of the nut clusters sampled are infested. During years of light crops, this level of infestation can be reduced to 3%-5%. Normally, treatment applications are made between May 8 and May 15. This can vary, however, depending on location and weather. Therefore, it is important to use pheromone traps and to scout for eggs regularly throughout May. Usually, one insecticide application is needed to control the first generation of pecan nut casebearer. However, if infestations are extremely heavy, or emergence of adults is prolonged, a second application may be necessary.

With fewer insecticides available for use by pecan growers and with concerns over outbreaks of secondary pests such as yellow aphids and mites, insecticides must be used judiciously. Doing so can reduce costs, improve control efficiency and help to conserve beneficial organisms. Before adding any pesticide to the spray tank, be sure check the pH of the water being used to spray. Ideally, the pH should be between 5.5 and 6.5. Use of a buffering agent will help to maintain the desired pH once pesticides have been added to a solution.