

Pecan Nut Casebearer (*Acrobasis nuxvorella* Neunzig)

The most damaging insect pest of pecans in Texas. The insect overwinters as early instar larvae in tightly woven cocoons called hibernacula. The spring brood larvae become active in the spring and feed on buds, then bore into young tender shoots or in bark crevices and pupate. The duration of the pupal period is inversely related to temperature and can be predicted using a degree day model (Ring et al., 1983. Generalization and application of a degree-day model predicting pecan nut casebearer (Lepidoptera: Pyralidae) activity. *J. Econ. Ent.* 76:831-835.). The moths emerge and lay eggs on the blossom end of the nuts, often on the stigma or under the lobes of the bracts. Peak egg laying often occurs during a 2-week period in late April to early May in the southern and coastal areas, or late May to early June in north Texas. Since temperature influences the duration of pupation, the timing of emergence varies in different years. Usually only one or two eggs are laid on each nut cluster. Eggs are greenish white to white when first laid, changing to pink or red prior to hatching. Eggs hatch in 4 to 5 days. The larvae feed first on buds below the cluster, then attack the nuts. They enter the nuts by cutting a circular hole in the base. As they feed, they push frass out the hole where it accumulates ([typical damaged cluster](#)). A single larva may destroy the entire cluster, before pupating in one of the last nuts fed upon. The first generation larvae do the most damage. The larval period lasts from twenty-five to thirty-three days. Larvae of the first generation form pupae in the nutlets. The duration of the first generation pupal period is usually about nine days. The adult is a small pale gray moth about 1 cm long with a wingspan of less than 2.5 cm. They are characterized by a feathery ridge of scales which crosses the wings one third of the distance between the head and wing tip. The moths are only active at night. Moths begin to lay eggs about three days after emergence and may lay 250 eggs during their fifteen day life. There may be as many as four generations per year, so damage may be cumulative and very severe. Second generation larvae attack nuts in mid-summer, about 42 days after nut entry by the first generation larvae. Third generation eggs are laid from late July to early September and may feed on shucks if shells have hardened. Some larvae from third and later generations do not feed, but crawl to the base of a dormant bud and construct a hibernaculum in which they overwinter.

Insecticide applications should be carefully timed to control newly hatched casebearer larvae before they enter the nuts, where they are protected from insecticide ([larva in nutlet](#)). Examine the tips of nuts for eggs in the spring. It is helpful to flag infested clusters for easy return. Apply insecticides within 2-3 days after the first eggs hatch in order to coincide with first nut entry. The following procedure is recommended by the Texas Agricultural Extension Service:

1. Begin to search for eggs at least one week before the predicted date of first nut entry. Tag infested clusters to monitor hatch.
2. When first eggs hatch, begin intensive sampling (go to 3 below).
3. Examine 10 clusters per tree. A cluster is infested if it has a casebearer egg or nut entry. Treat if two infested clusters are found before 310 clusters (31 trees) are checked (go to 4). If fewer than 2 clusters in 310 are infested, stop sampling (go to 4).
4. Sample again 3 to 5 days later. Treat if 2 infested clusters are found before 310 clusters are checked (go to 5). If fewer than 2 clusters in 310 are infested, stop sampling (go to 5).
5. Sample a third time 2 days later. If 3 infested clusters are found before 310 clusters have been checked, treat. If not, no treatment is necessary.
6. Pecan nuts should be checked for second generation casebearer eggs about 6 weeks after first generation eggs were found. Consider treatment if 2 percent of the pecan clusters are infested with eggs.