



BUG BIZ

Pest Management and Insect Identification Series



Hickory Shuckworm

Distribution

The hickory shuckworm is distributed throughout most of the area where pecans are grown – from South Carolina to Texas and Oklahoma. In Louisiana, the hickory shuckworm is found throughout the state.

Description

The adult hickory shuckworm is a small gray to smoky black moth about 3/8- inch long, with a 1/2-inch wingspan (Figure 1). The moth is seldom observed because it is nocturnal. Even during the day, its small size and inconspicuous coloration make it difficult to see. The larvae of the hickory shuckworm range from 1/3 to 1/2 inch long. The body of the larva is creamy to dirty white, and the head is reddish brown (Figure 2). It is similar in appearance to nut curculio larvae, except that hickory shuckworm larvae have three pairs of legs located just behind the head while the nut curculio is legless.



Figure 1. Hickory shuckworm moth.



Figure 2. Hickory shuckworm larva.

Life Cycle and Damage

The hickory shuckworm overwinters as a mature larva within the shuck of the nut. Pupation occurs within the shuck in late winter or early spring. Adult emergence in Louisiana begins around the first week of April. Moths, which emerge during the spring before nut formation occurs, lay their eggs on the foliage and on the galls formed by various species of phylloxera that attack pecan and hickory trees. Shuckworms hatching from eggs deposited on the foliage generally die before completing their life cycles, but larvae developing within phylloxera galls are able to complete their life cycles.

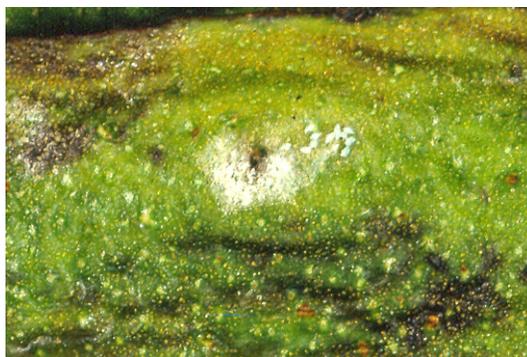


Figure 3. Eggs hatch and larvae enter nut.

The female shuckworm moth begins laying eggs on the nuts as they begin to form in the spring (Figure 3). Egg laying continues throughout the summer until shuck-split. There are three to four successive generations of this insect each year. Emergence peaks occur in mid-May, late June, mid-August and early to mid-September (see Figure. 5).

The name hickory shuckworm comes from the fact that the larvae feed and develop within the shuck of the pecan. Several types of damage can be attributed to shuckworm larval feeding. The feeding of shuckworm larvae within the nut before the shell hardens results in premature nut drop. Damage resulting from the shuck-mining activities of the larvae after shell hardening includes poor kernel development, shuck sticking, scarring and discoloring of the shell, as well as delayed nut maturity (Figure 4).



Figure 4. Hickory shuckworm damage.

Control

The historical seasonal emergence pattern of the hickory shuckworm at the LSU AgCenter's Pecan Research-Extension Station near Shreveport, La., is shown in Figure 5. The information used to compile this graph was collected from light trap catches over a 10 year period at the station. Since emergence of the hickory shuckworm can vary from year to year and from orchard to orchard, spraying should be timed based on shuckworm activity within a given orchard. Shuckworm activity can be monitored with blacklight traps and by inspecting aborted nuts for signs of nut entry by shuckworm larvae (Figure 3).

If you do not have a blacklight trap, adequate control of hickory shuckworms usually can be obtained by making two insecticide applications. The first application should be made at about half-shell hardening, usually around the Aug. 10-15. This should be followed by a second application about two weeks later. The timing of these applications coincides with the period of greatest shuckworm activity (see Figure 5) and the stage of nut

development where the greatest amount of damage to the nut from the shuckworm occurs. Reducing the infestation level at that time also reduces the number of overwintering larvae, thus lowering the infestation level for the following year.

Growers and homeowners without spray equipment may reduce shuckworm infestations by gathering and destroying nuts that drop prematurely in midsummer and doing the same with pecan shucks at harvest.

For a list of insecticides that can be used for controlling hickory shuckworms and the rates of application for both commercial growers and homeowners, refer to the Louisiana Recommendations for Control of Pecan Insects. This can be found at www.lsuagcenter.com. When using insecticides, be sure to check the pH of the water being used for spraying. The pH needs to be between 5.5 and 6.5 for optimum insecticide efficacy. Use of a buffering agent will help maintain the desired pH once pesticides have been added to a solution.

HSW: 10-year Average Black Light Trap Catch, Shreveport, La.

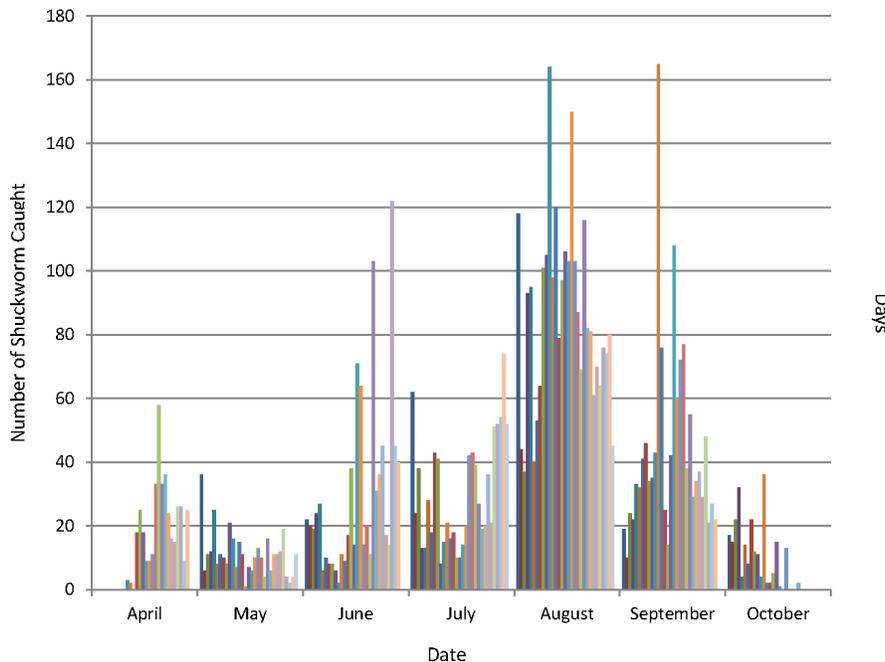


Figure 5. Seasonal emergence pattern of the hickory shuckworm at the LSU AgCenter's Pecan Research-Extension Station near Shreveport, La.

Author

Michael J. Hall
Pecan Research/Extension Station

Photo Credits

Mike Hall
Bill Ree, Texas AgriLife Extension, Fig. 4

Visit our website: www.LSUAgCenter.com

Louisiana State University Agricultural Center
Louisiana Agricultural Experiment Station
Louisiana Cooperative Extension Service
William B. Richardson, Chancellor and Director
Pub. 2166 (online only) 6/13

The LSU AgCenter is a statewide campus of the LSU System and provides equal opportunities in programs and employment.