Cotton Insects

Loopers

Scott D. Stewart, Associate Professor
Entomology and Plant Pathology

Classification and Description
Two kinds of loopers sometimes infest cotton grown in Tennessee. The cabbage looper (Trichoplusia ni) and soybean looper (Pseudoplusia includens) both belong to the same family of insects (Lepidoptera: Noctuidae) and are difficult to distinguish from each other. The adults of both species range from brown to black with a wingspan of about 1 1/3 inches. The forewings of both species are often mottled with prominent silver markings near the center. Eggs are typically laid singly and are similar in size and appearance to bollworm or tobacco budworm eggs, although slightly more flattened. Unlike bollworm and tobacco budworm, loopers often lay their eggs on the undersides of leaves. Larvae are typically green, with a longitudinal white strip that runs the length of the body on either side. Larvae are tapered toward the head and move with a characteristic inch-worm, looping fashion. Both soybean and cabbage loopers can be distinguished from other caterpillars commonly found in cotton because they have only three pair of prolegs on the abdomen (one pair at the tip of the abdomen and two additional pair). As a general rule, larvae of the soybean looper are likely to have black-colored true legs (behind the head) and/or black spots on the body.

Hosts and Distribution
Both species of loopers have a relatively wide host range and may be found on a number of wild, vegetable and field crops. Infestations in soybeans are common. Cabbage loopers are native to most of North America. Soybean loopers are subtropical in origin, and infestations in Tennessee result from the migration of moths from southern latitudes. Consequently, soybean looper infestations are more common in states bordering the Gulf Coast.
Life History
Eggs take three days to hatch, and the larvae develop through five to six instars, reaching a maximum length of about 1¼ inch. Cabbage loopers pupate in the soil; soybean loopers usually pupate on the undersides of leaves. Soybean looper larvae spin a loose, white silken cocoon in which they pupate. It takes about 25-30 days for development from egg to adult. Each female moth lays 600-700 eggs.

Pest Status and Injury
In Tennessee, loopers may occasionally cause economic damage to cotton by feeding on leaves. Excessive defoliation can indirectly impact yields by reducing the amount of photosynthate produced by the leaves for boll maturation. Cabbage loopers may be found in small numbers throughout the season. Soybean loopers are usually observed in late August and September. Outbreaks, particularly for soybean looper, are more common following insecticide applications that reduce populations of natural enemies.

Management Considerations
Insecticide treatments are prescribed when larvae threaten premature defoliation. Specific threshold and insecticide recommendations are available in the Tennessee Cotton Insect Control Guide (Extension PB 387). Cotton is most susceptible to defoliation during the peak boll maturation phase, approximately 2-6 weeks after blooming begins. However, in Tennessee, serious infestations are uncommon until September. As cotton fields approach physiological maturity, NAWF5 + 850 DD60’s, they are less susceptible to defoliation. Indeed, some level of defoliation may be beneficial by increasing airflow in the canopy and reducing boll rot. Beneficial arthropods and diseases are important in reducing the likelihood of looper outbreaks. Soybean loopers are more difficult to control with insecticides than are cabbage loopers, in part because resistance has developed to pyrethroid insecticides. Bt cotton may only suppress looper populations, but second-generation Bt cottons (e.g., Bollgard II) are highly effective against these pests.

For information about the management of the major field crops grown in Tennessee, visit www.utcrops.com