Loopers: **Soybean Looper:** *Pseudoplusia includens*
Cabbage Looper: *Trichoplusia ni*

Two species of loopers attack cotton in Mississippi. These are the soybean looper, *Pseudoplusia includens*, and the cabbage looper, *Trichoplusia ni*. Both species are occasional late-season pests that rarely cause serious economic loss.

Biology: The soybean looper does not overwinter in Mississippi, but migrates in from more southerly areas each year. Cabbage looper, on the other hand, does overwinter in the state, and as its name implies, is a pest of cabbage and other cole crops, as well and cotton and soybeans. Both species deposit their eggs individually on the undersides of leaves. These eggs hatch in three to five days. The larvae, which are strictly leaf feeders, take approximately 14 days to reach the pupal stage. The pupae are attached to the undersides of leaves and are covered with a thin, transparent webbing, or cocoon. The adults emerge in approximately seven days. Loopers are attacked by a large number of predators and parasitoids, as well as by several important fungal and viral diseases.

Damage: In both species feeding is confined to leaves and other foliage. When numbers are high, caterpillars may consume the bracts of squares and bolls, but direct feeding on the fruit itself is rare. Thus any damage caused by loopers is "indirect damage" due to premature defoliation. Low levels of defoliation (less than approximately 20%) cause no adverse effects, and it is commonly believed that excessively thick canopied fields may actually benefit from low levels of late season defoliation by loopers, due to improved air movement and reduced boll rot. However, excessive defoliation that occurs before the last harvestable bolls are fully mature can adversely affect both yield and quality of lint. Because they rarely build to damaging levels until very late in the season when many bolls are already mature, loopers do not have the potential to totally destroy a crop, like many other cotton pests. However, heavy infestations of loopers can completely defoliate a crop within just a few days, and this can cause several hundred pounds of yield loss when it occurs in fields that are some weeks from maturity.

Yield Effects: Over the past five years estimated statewide yield losses attributed to loopers have remained consistently below 0.1%, and there have been no catastrophic statewide outbreaks of loopers. However, premature defoliation of late maturing crops can cause several hundred pounds of yield loss in individual fields. Late maturing fields are more vulnerable to damage by loopers than early maturing fields.

Control: Looper populations are normally held in check by the large array of predators and parasitoids. Heavy insecticide use can destroy these beneficial insect populations and increase the potential for looper outbreaks to occur, especially if the insecticides being used do not have activity against loopers. When outbreaks do occur they often crash quickly due to epizootics of fungal or viral diseases that attack loopers. When making looper treatment decisions, it is important to be aware of the potential for these disease outbreaks because, when they occur, they can preclude the need for insecticide treatments. However, because heavy infestations of large caterpillars can defoliate a crop so quickly, insecticide treatment is sometimes required to prevent excessive defoliation. Loopers can damage Bt cotton, as well as non-Bt, but the second

generation Bt cotton, which contains both the Cry 1 Ac and Cry IIAb endotoxins, is much more effective against loopers. Treatments recommended for control of loopers are listed in Table 13. Because soybean loopers are the more common species in cotton, and because soybean loopers are more difficult to control than cabbage loopers, insecticides are recommended based on their efficacy against soybean loopers.

Table 13: Insecticides Recommended for Control of Loopers

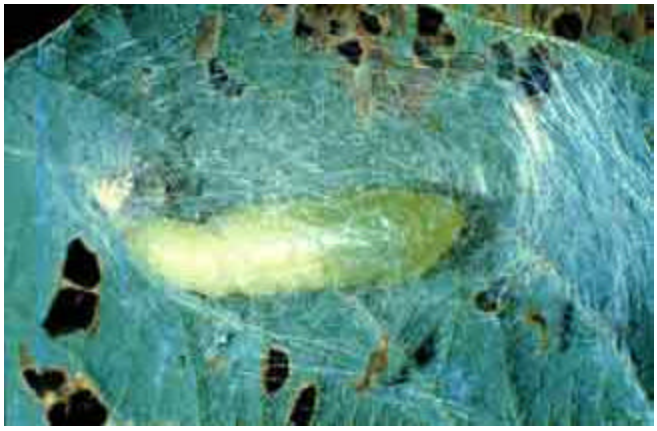
Insecticide	Trade Name	Lbs ai/acre
Indoxacarb	Steward	0.09 - 0.11
Methoxyfenozide	Intrepid	0.06 to 0.1
Spinosad	Tracer	0.067 - 0.089
Thiodicarb	Larvin	0.60 -0.90

Source: Cotton Insect Control Guide, 2003, Publication 343, Mississippi State University Extension Service

Loopers: Two species of loopers are commonly found in Mississippi cotton, the cabbage looper and the soybean looper. Distinguishing between these two species can be challenging, but in general, loopers are easily identified by the fact that they only have two pairs of abdominal prolegs, which causes them to move in a "looping" manner (most caterpillars have four pairs of abdominal prolegs).

Eggs are deposited individually on the undersides of leaves and the **young looper larvae** begins feeding at this site soon after hatching.

Loopers are strictly foliage feeders, so **defoliation by larger larvae** is the type of damage inflicted.



Loopers pupate on the undersides of leaves after spinning a very thin, transparent cocoon.

Looper moths are easily identified by the distinct silver spots located on each forewing.