

Cutworms: **Black Cutworm:** *Agrotis ipsilon*
 Granulate Cutworm *Feltia subterranea*

Black cutworms and granulate cutworms are the most common species encountered in Mississippi cotton fields, but other cutworm species occasionally occur. The potential for cutworms has increased in recent years because of increased use of reduced tillage systems and herbicide tolerant varieties.

Biology: Black cutworm moths may lay up to 1000 eggs, which are deposited singly, or in small groups, on weeds and other vegetation, especially in low, wet areas of fields. Black cutworms may overwinter as pupae or as partly grown larvae. Many other cutworm species also overwinter as partly grown larvae. This explains how large cutworm larvae come to be present on cotton seedlings that are only a few days old. Mature larvae pupate in the soil. There can be several generations per year, but only the spring generation is damaging to cotton.

Damage: Cutworms are one of the few cotton pests that are capable of killing an entire cotton plant. Larger larvae feed by cutting the main stem of seedling plants. When plants are cut below the cotyledon node, the entire plant is killed, and this is the most common type of injury, especially in plants younger than the 3-leaf stage. Occasionally larger seedlings are cut above the cotyledon node, and plants damaged in this manner often survive, although they may be less productive. A large larva may cut several plants before completing its life cycle, resulting in a skip in plant stand density. Normally the skips caused by feeding of individual larvae are not large enough to result in significant yield reductions because the remaining plants compensate by producing additional branches. However, such skips are more favorable to weed development. When cutworm infestations are heavy, large skips and reductions in plant stand can occur.

Cotton seedlings become relatively safe from injury by cutworms once they reach the five to six-leaf stage. Occasionally, cutworms, usually granulate cutworms or other *Feltia* species, will climb larger seedlings and cut individual leaf petioles. However, this damage is usually inconsequential. Occasionally, cutworm eggs may be found in the terminals of plants in late May and June, and small larvae may be occasionally found feeding in terminals. These larvae do not appear to cause significant plant injury, but the eggs and small larvae may be mistaken for bollworm/budworm. Again, these are usually *Feltia* species.

Yield Effects: Obviously, cutworms have the potential to cause very heavy yield losses if stands are destroyed or severely reduced and fields are not re-planted. However, in practice, cutworms seldom cause heavy yield losses. This is because cotton has the ability to compensate for low to moderate level stand loss, and because fields are routinely re-planted, or "spot re-planted" in cases where stand loss is excessive. Thus, the greatest loss associated with cutworm damage is the cost of re-planting, which is substantial, and any yield reductions or increased production costs associated with later planting. Statewide yield losses attributed to cutworms during the past five years have ranged from 0.02 to 0.09%.

Control: Cutworms are rarely a problem in fields, or areas of fields, where all vegetation is destroyed several weeks before planting, either by tillage or by herbicides. Thus, classical conventional tillage systems provide excellent cultural control of cutworms. In conventionally

tilled fields cutworm infestations are usually restricted to low, wet areas of the field and other areas where vegetation was not completely destroyed before planting. However, under reduced tillage systems vegetation is often present up to, and even after, planting. In these situations the potential for cutworm infestations is greatly increased, and at-planting insecticide treatments are routinely recommended to control cutworms that are present. Fields in which a large number of leguminous plants or other broadleaf weeds are present at planting should be considered to be at extremely high risk of cutworm infestation.

Regardless of whether or not a cutworm treatment is applied at planting, fields of seedling cotton should be scouted regularly for cutworms until plants reach the four to five leaf stage, at which point the plants become relatively safe from cutworm damage. Treatment is recommended when cutworm infestations threaten to reduce plant population below an acceptable level (approximately 35,000 plants per acre). Insecticides recommended for cutworm control are listed below. Because cutworms are relatively susceptible to these insecticides, a single application is usually sufficient. It is worth noting that most of the treatments that are applied in-furrow, or as seed treatments, for thrips control do not provide effective cutworm control. Also, note that transgenic Bt cotton does not provide effective control of cutworms. This is because cutworms are relatively more tolerant of Bt toxin than many other caterpillar pests and because large cutworm larvae will destroy several plants before they consume enough toxin to provide control.

Table 2: Insecticides Recommended for Control of Cutworms

Insecticide	Trade Name	Lbs ai/acre
Acephate	Orthene (generics)	0.8
Cyfluthrin	Baythroid	0.0125
Cyhalothrin	Karate	0.02 to 0.03
Cypermethrin	Ammo	0.025
Deltamethrin	Decis	0.013 to 0.019
Esfenvalerate	Asana	0.03
Tralomethrin	Scout X-tra	0.016 to 0.02
Zetamethrin	Fury	0.016 to 0.024

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



Cutworms

Several species of cutworms attack cotton, but the two most common are the granulate or subterranean cutworm, seen here, and the



black cutworm. Cutworms are nocturnal and burrow into the soil during the day.



Damage is caused by cutting the stems of seedling plants.