

## Sweetcorn Pests

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Consumer demand for damage-free sweet corn means that growers must develop the best possible management program for insect pests, especially those that attack the ear. This publication contains information on the identification, biology and control of common sweet corn pests. Additional insecticide information is available from ID 36, *Commercial Vegetable Crop Recommendations*.

Soil insects, primarily wireworms and white grubs, can cause stand reduction or stunted plants. These insects should be considered a serious threat when corn will be planted in ground immediately following sod. A pre-plant treatment may be considered. However, it is likely that a planting-time treatment will provide sufficient protection. Wireworms are on the label of most soil insecticides. These insects can be very numerous in scattered spots in a field. In these cases, damage may occur even when a soil insecticide is used.

Soil insect problems generally decrease with time out of sod. Problems with white grubs may occur in soils fertilized heavily with compost or manure. Rootworms may cause damage in ground where corn is grown every year. Soil insecticides will generally greatly reduce troubles with these pests.

Soil insecticides that are banded over the row should be incorporated lightly in the top one-half to one inch of soil. These products are very toxic and should be used with great care.



Figure 1. Black cutworm is the most common cutworm attacking corn in Kentucky.

### CUTWORMS

Cutworms are unpredictable. While they can be very destructive, the chances for damage in any given year are relatively low. Infestations usually develop on early season weed growth. Late planting, low-damp areas of the field that drain poorly, fall or spring weed growth and the amount of service residue influence the potential for cutworm infestations. Early land preparation and good weed control will help to reduce cutworm problems. It is important to watch closely for cut plants. Early detection means an insecticide application can be made before serious damage occurs.

### FLEA BEETLES

Flea beetles are small, black, hard-bodied insects that hop or fly quickly when disturbed. They overwinter as adults and become active early in the spring. Flea beetles attack young corn plants as soon as the first true leaf appears. Flea beetles produce small feeding streaks or "window pane" scarring on the leaves. During wet, cold periods in the spring when corn is growing slowly, damage from this pest can be severe. Only rarely will this actually kill plants.



Figure 2. Corn flea beetle can damage young seedlings during cold weather.

The real concern from flea beetles is Stewart's wilt, a bacterial disease of corn. The pathogen is carried inside the flea beetle. Young plants become infected as the beetles feed. Damage from Stewart's wilt is far more severe than leaf injury caused by the beetles. Wilt

resistant sweet corn varieties should be selected to prevent losses. Chemical control of the beetle should not be the only protection program for Stewart's wilt.

### EUROPEAN CORN BORER

Corn borer populations fluctuate from year to year and can be more severe in some fields than others. There are two generations of this insect each year. The first generation occurs from early June to early July and is most damaging to early-planted corn. Damage is primarily due to borer tunneling in leaf midribs and the stalk. The second generation in August and September is a greater threat to late-planted corn. Borers of this generation tunnel in ears, ear shanks and stalks. Stalk breakage may be serious. Borer entrance holes in corn plants also provide a site for stalk rot pathogens to enter the plant.



Figure 3. Since the introduction of Bt corn, European corn borer is less common.

The first generation is most vulnerable to chemical control. Treatment should be considered if "shot-hole" damage is apparent on 25% of the plants and live larvae are present in the whorls. One application should be sufficient against the first generation. Your county agent for agriculture can give you accurate information on when to expect damage. Treatment applied after borers have entered the plant will not be effective.

The second generation of European corn borers presents a much greater control challenge. First generation larvae were generally concentrated in the whorl, which provided a good collection funnel for the insecticide spray or granules. On tasseled corn, the second-generation borers are dispersed over the plant and protected behind leaf sheaths and in axils. In this situation, plant coverage with the foliar spray is very important. Also, egg laying for the second generation occurs over a long period of time. If borer populations are high, it is possible that two or more sprays may be necessary to achieve satisfactory control.

Inspect plants carefully during August. Consider an insecticide application if live borers are found on 25% of the plants.

### FALL ARMYWORM

Fall armyworms are unable to survive Kentucky winters. Moths migrate northward from the Gulf area each year and generally arrive in Kentucky about mid-July. Infestations are most likely to occur on corn that is knee to waist high in July. Late planted sweet corn, especially in the southern tiers of counties should be watched closely for fall armyworm activity. The larvae or worms feed on leaves and in the whorl. They will enter the ear and cause damage similar to that from the corn earworm.



Figure 4. Fall armyworm is more common with late sweet corn plantings.

Fall armyworms are smooth and green to black with three thin yellow lines down the back. A dark stripe and a wavy yellow stripe runs along each side. Larvae have a dark head with a white inverted "Y". Eggs are laid in groups of infested plants may be found over a field. Moths and worms remain active until frost. Repeated spray application may be necessary if fields become re-infested. Thorough spray coverage with insecticides recommended against corn borers should provide satisfactory control. Applications should be made before worms enter the ear.

### CORN EARWORM

The corn earworm is the most serious sweet corn pest because it feeds directly on the market product. Once worms have become established within the ear, control is impossible. Earworms spend a relatively short period of their life feeding in a site that can receive an adequate insecticide application. Earworms are variable in color, but they have a brown head without markings and numerous microscopic spines covering their body. A preventive program, especially on late season corn, is necessary to ensure that damaged ears are at a minimum.

Corn earworms overwinter as pupae in underground cells. Some adults from these pupae begin to emerge as early as late March, others may not appear until August. There are generally four generations each year, however, overlap is great and adult moths that can lay eggs may be present in significant numbers throughout most of the growing season.

Female moths search out green silks on which to lay single eggs. Following hatch, the small larvae often eat the egg shell before beginning to feed on the silk. Corn earworms generally complete their development in 14 to 16 days. Full-grown worms leave the ear and pupate in the soil. The new adult will be active in another 10 to 14 days.



*Figure 5. Corn earworm is variable in color, but can be identified by the rough surface of its body.*

A preventive program against corn earworms may begin when 10% of the ears are silked. Repeated sprays at three to five day intervals until 90% of the silks have wilted should give a high percentage of worm-free ears during early and midseason. Control is more difficult late in the season. Even shortening spray intervals may produce only 90% clean ears. Spray solution should be driven deep into the silks. Corn hybrids having a long, tight-fitting shuck appear to suffer less damage than those with loose shucks.

#### **SAP BEETLES**

Sap beetles, also known as picnic beetles, are primarily scavenging insects that feed on overripe or damaged fruits and vegetables and other decaying matter. Usually they are attracted to ear tips damaged as a result of corn earworm feeding. However, the beetles may enter undamaged ears anytime from early silk to maturity.

Sap beetles are about 3/16 to 1/4 inch long and brown to black. There may be orange markings on the wing covers. Larvae may be found in some ear tips along with adults.

These pests are difficult to control because even if large numbers are killed, more are likely to come in from untreated areas. Since these insects are scavengers, anything that can be done to prevent or eliminate overripe, insect- or disease-damaged fruits and vegetables will be helpful. Insecticides used to control corn earworms should be a relatively good job of reducing sap beetle problems.

#### **SILK CLIPPING INSECTS**

Rootworm beetles and Japanese beetles feed on corn silks. When numerous, their feeding activity can keep silks clipped very short. The results may be reduced pollination and kernel set. Sprays directed at silks to control earworms should reduce silk clipping damage also. Typically, it requires at least two Japanese beetles or five corn rootworm beetles feeding on the silks before maximum pollen shed before any pollination interference occurs. Sprays for corn earworm usually provide adequate control of silk clipping insects.

Corn leaf aphids are a common sight in corn in the commonwealth. These are pear-shaped soft-bodied insects. They vary from blue-green to gray and have piercing sucking mouthparts. Feeding by colonies of aphids can cause leaf discoloration, stunting, or wilting. They occur in the curl of leaves, whorl, or un-emerged tassels. Aphids secrete a sugary substance known as "honeydew" which promotes the growth of black mold. Heaving infestations usually are limited to late-planted corn. Although these aphids are fairly common, generally no control action is necessary.

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