THE OHIO STATE UNIVERSITY EXTENSION

FACT SHEET

Agriculture and Natural Resources

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Black Cutworm on Corn

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Crop: Field Corn

Crop Development: Pre-plant and early plant growth

Scientific Name: *Agrotis ipsilon*

Loss of stand prior to emergence or due to above-ground cutting or below-ground tunneling injury often indicates presence of black cutworm (BCW) (fig. 1). Adult moths (fig. 2) of the BCW overwinter in the south and migrate north with the prevailing spring weather fronts. The intensity and distribution of the migratory BCW flight may differ from year to year due to this migration. Some regions such as the Ohio River valley often exhibit higher levels of BCW activity than other regions such as the areas bordering the Great Lakes. Within a region, migrating BCW moths tend to be attracted to fields having a significant ground cover of winter annuals such as chickweed at the time of peak migratory flights. Since the accumulation of winter annuals is often associated with reduced tillage or no-tillage systems, the incidence of BCW infestations tends to be linked to tillage practices and weed management. Late tillage prior to corn planting may not reduce

Figure 1. Black cutworm larva

Figure 2. Black cutworm adult

BCW infestations if significant weed cover was present at the time of peak egg laying by migratory BCW moths. Thus, reduced tillage or no-tillage corn may be equally susceptible to BCW infestation if the corn crop follows a no-tillage corn or soybean crop that enabled development of a significant stand of winter annuals, which are attractive sources for egg laying by migratory BCW moths. In terms of weed management, fall tillage can give growers a start in providing weed-free fields in the spring.

Eggs are laid on these weeds in the spring, and developing larvae move to corn when the weeds are killed with tillage or herbicides. BCW larvae pass through seven instars. Early first, second, and third BCW instars are rarely detected in the field, although such early instars may cause slight foliar feeding. Above-ground cutting of corn seedlings (fig. 3) or below-ground tunneling of corn (fig. 4) is generally linked to BCW larvae in the fourth and later instars, which range in length from 1/2 to 2 inches. Stand loss of corn is generally associated with below-ground feeding injury, which occurs below the growing point. Corn plants are most vulnerable to cutworm injury following emergence, and susceptibility to injury declines as the corn plant approaches the 6th leaf stage of development. Plants cut off above the growing point tend to recover.

Figure 3. Above-ground feeding injury

Figure 4. Below-ground feeding injury

Symptoms, Assessment, and Scouting

Fields particularly heavy with broadleaf weeds, especially chickweed, should be monitored closely from planting until corn reaches the 6th leaf stage. When infestations of BCW are detected, the proportion of stand exhibiting injury is an indication of additional injury that may be forthcoming. Depending on the stages of cutworm and corn development present, 1 to 3 additional plants may be affected for every plant exhibiting fresh injury up to the 4th leaf stage. Thus, rescue treatment should be based on accurate estimates of stand injury and presence of cutworms in the early to mid-larval stages.

Check 20 plants in 5 locations weekly for cutworm injury beginning after corn emergence. Determine percent of plants being injured and collect a number of cutworm larvae to determine the predominant stage of larval development. Rescue treatment is warranted when (1) 3 percent or more of the plants have been cut or tunneled, (2) corn plants are in the 2nd- to 6th-leaf stage, and (3) larvae are still 1 inch or less in length. If a rescue treatment is required, growers have numerous insecticide treatment options.

Management

Because of the relationship between BCW and weed infestations, early tillage and fall and/or spring weed control will reduce the incidence of cutworm infestations. Weed control can be especially useful if done as a fall management program. Conversely, reduced tillage or no-tillage fields with substantial broadleaf weed infestations may warrant a preventive treatment prior to emergence. Such a treatment might be especially critical if adult cutworm flight is occurring within a region. Preventive control can be achieved by at-planting or pre-emergent use of various insecticides.

Corn hybrids with the Herculex I transgenic trait (including Herculex Xtra) will also control BCW larvae in addition to corn borers. However, hybrids containing YieldGard and Agrisure traits do not offer BCW control. Although the various neonicotinoid seed treatments, Cruiser and Poncho, have BCW on their label, our experience, as well as the experience of others, suggests they do not offer acceptable control. Thus, hybrids treated with these seed treatments that are not from the Herculex I family should be monitored for BCW in the spring.

See Ohio State University Extension Bulletin 545, *Control of Insect Pests of Field Crops*, for those insecticides labeled for black cutworm, or for all insecticides labeled on corn. Bulletin 545 can be accessed at http://entomology.osu.edu/ag/.

Additional information is available from your local OSU Extension office or The Ohio State University Entomology Agronomic Crops Insects web site (http://entomology.osu.edu/ag/).