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Scouting for Black Cutworm 2019

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Scouting for Black Cutworm 2019

Abstract
Black cutworm (BCW) is a migratory pest that cuts and feeds on early vegetative-stage corn. Black cutworm moths arrive in Iowa and other northern states with spring storms each year. These moths lay eggs in and around crop fields, and emerging BCW larvae can cut seedling corn. This pest is sporadic, making it essential to scout fields to determine if management is needed. Scouting for BCW larvae helps to determine if an insecticide application will be cost effective. This year, delayed corn planting can coincide with emergence of BCW larvae so scouting should be done early on to protect seedlings in these fields.

Disciplines
Agricultural Science | Agriculture

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When to scout for BCW caterpillars is based on the “peak flight” of moths and accumulating degree days after the peak flight. Degree days are a measure of temperature used to gauge insect development. A peak flight for BCW is defined as capturing eight or more moths over two nights in a wing style trap baited with a pheromone lure.

To find out when moths arrive in Iowa, cooperators around the state monitor pheromone traps and report moth captures. Cooperators started checking traps in the beginning of April and captures of BCW moths occurred during the first week. Moth captures picked up during mid-April and have continued through early May, with several peak flights recorded. The peak flights observed during this time period were in line with captures in surrounding states.

The map (Figure 1) shows predicted BCW cutting dates for the nine Iowa crop reporting districts, based on actual and historical degree day data and peak flights during late April and early May. We may continue to see peak flights occur in Iowa. Adult moth trap captures do not necessarily mean there will be economically significant BCW infestations in a particular location. Field scouting is essential to determine if an economically
damaging infestation exists. Also, as you are out in fields assessing stands, be on the lookout now for early season insect injury in corn – BCW or otherwise.

**Figure 1. Estimated black cutworm cutting dates for each Iowa climate division based on peak flights of moths during 2019.**

Several states bordering Iowa also track black cutworm flights and make estimates about cutting dates, especially to the north and east. Several of the predictions in these states are in close proximity to the Iowa border, and some are for counties directly adjacent to Iowa. Data from these out-of-state locations may be informative for Iowans living nearby. Extension resources on black cutworm can be found at the links below, but others may be available:

- University of Minnesota: [https://swroc.cfans.umn.edu/agricultural-programs/pest-management/black-cutworm-reporting-network](https://swroc.cfans.umn.edu/agricultural-programs/pest-management/black-cutworm-reporting-network)
- University of Missouri: [https://ipm.missouri.edu/pestMonitoring/](https://ipm.missouri.edu/pestMonitoring/)

**Scouting**

Poorly drained, low lying, or weedy fields, as well as those next to natural vegetation or with reduced tillage, may have higher risk of BCW injury. Additionally, cornfields with green cover crops may be attractive to egg-laying females. Late-planted corn can be smaller and more vulnerable to larval feeding. Some Bt hybrids provide suppression of
BCW (e.g., Vip3A, Cry1A.105, Cry2Ab2, and Cry1F proteins), but larvae can still cut young plants.

Scouts are encouraged to look for any activity during early season stand assessment. Scouting at least a few days before estimated cutting dates is recommended. Early scouting is important because local larval development may be different due to weather variation within a climate division, and additional peak flights could prolong BCW larvae arrival to the field.

Fields should be scouted for larvae weekly until corn reaches V5. Examine 50 corn plants in five areas in each field for wilting, leaf discoloration and damage, or those that are missing or cut (Figure 2). Flag areas with suspected feeding and return later to assess further injury. Larvae can be found by carefully excavating the soil around a damaged plant.

![Figure 2. Black cutworm larval injury usually begins above the soil surface. Leaf feeding (left) may be observed. As larvae mature, they can severely damage or kill plants (right). Photo on left copyright Marlin Rice; photo on right courtesy of Jon Kiel.](image)

**Identification**

BCW larvae have grainy, light grey to black skin and four pairs of fleshy prolegs on the end of the abdomen (Figure 3). There are pairs of dark tubercles, or bumps, along the side of the body. The pair of tubercles nearest the head is approximately 1/3 to 1/2 the size of the pair closest to the abdomen. BCW larvae can be confused with other cutworms and armyworms (Figure 4), so additional resources may need to be consulted to confirm identification.
Figure 3. Black cutworm larvae have grainy and light grey to black skin. Photo by Adam Sisson.

Figure 4. Black cutworms (left) can be distinguished from other larvae, like the dingy cutworm (right), by the dark tubercles on the middle of the back. On each segment, the tubercle closest to the head is about 1/3 the size of the tubercle closest to the rear for black cutworm. Corresponding dingy cutworm tubercles on each segment are roughly the same size. Photos by Adam Sisson.
Thresholds

Common thresholds for seedling, V2, V3, and V4 stage corn plants are 2, 3, 5, and 7 plants cut out of 100, respectively. A dynamic threshold for BCW may be useful with corn price and input fluctuations. An Excel spreadsheet with calculations built in is available and can be used to help with black cutworm management decisions. Preventive BCW insecticide treatments applied as a tank-mix with herbicides are a questionable practice. BCW is a sporadic pest and every field should be scouted to determine insect presence before spraying insecticides.

If you see any fields with BCW larvae while scouting, please let us know by sending a message to bugtraps@iastate.edu. This information could help us to refine future predictions.

Category:  Crop Production  Insects and Mites

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Crop:
Corn

Tags:  BCW  cutting dates  Corn  seedlings  cutworm

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