Scouting Tips for Black Cutworm

Instar Stage

- Print this page "as-is" on 8.5 x 11 paper for a correctly scaled illustration at right to stage Black cutworm larva (Figure 1). The total length of the black bar is the initial stage, and the added length of the white bar is still within that particular stage.
- 3rd instar or smaller feed on leaves. See figures 2 and 3.
- 4th instar or larger usually cuts corn above the soil line (Figures 4 & 5), however, under dry conditions it may cut corn below the soil line. If cut below soil line, the corn plant above ground may appear wilted (Figure 6).

<table>
<thead>
<tr>
<th>Instar</th>
<th>Body Length (mm)</th>
<th>Head Capsule Width (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1-2</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>3-6</td>
<td>0.6-0.8</td>
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<tr>
<td>3</td>
<td>7-9</td>
<td></td>
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<tr>
<td>4</td>
<td>12-25</td>
<td>1.1-1.5</td>
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<tr>
<td>5</td>
<td>25-37</td>
<td>1.8-2.4</td>
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<tr>
<td>6</td>
<td>25-37</td>
<td>2.5-3.3</td>
</tr>
<tr>
<td>7</td>
<td>31-50</td>
<td>3.6-4.3</td>
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</tbody>
</table>

Millimeter Guide

Figure 1. Black cutworm instar chart. Iowa State University.

Figure 2. Leaf feeding by Black cutworm. Photo: University of Illinois.

Figure 3. Leaf feeding by Black cutworm. Photo: Iowa State University.

Figure 4. Plant cut by Black cutworm. Photo: University of Illinois.
Figure 5. Plant cut by Black cutworm. In the day time, larvae are often found resting below the soil line within 2 to 3 inches of a plant that they fed on. Photo: Iowa State University.

Figure 6. Last leaf out is wilted because Black cutworm feeding below ground injured the growing point. Photo: University of Illinois.

Figure 7. A 3rd instar larva (circled) & 5th instar larva by a cut plant. Photo: Iowa State University.

Figure 8. Dorsal (top) views of identifying features (size of tubercles) of Black and Dingy cutworms. Photo: Iowa State University.

**Feeding Activity**
- On average, 4th instar to pupation lasts 2½ to 3 weeks.
- Several different instar stages can be present at the same time with larvae developing from different moth flights scattered throughout early spring. Figure 7.
- V5 stage corn is considered safe from significant cutworm activity.

**Identification**
Black cutworm (top of Figure 8)
- The front "inner" pair of dorsal tubercles is about half the diameter of the back "outer" pair on each segment.
- Grainy, rough skin texture.

Dingy cutworm (bottom of Figure 8)
- Leaf feeder, rarely cuts corn.
- All four of the dorsal tubercles on each segment are nearly equal in diameter.
- Smooth skin texture.
Scouting the Field
To reduce scouting time and costs, first scout the fields that are most likely to have cutworms. These fields are generally:

- Low lying fields that are poorly drained.
- Located near natural vegetation areas, such as streams and grass-back terraces.
- Weedy fields, especially where winter annual weeds are present (Figure 9).
- Reduced-till / heavier residue fields.
- Late planted corn.
- Fields with a history of cutworm infestations.

Scout a minimum of 50 plants in 5 different areas of the field.

Figure 9. Weedy fields are more attractive to Black cutworm moths for egg laying. *Photo: Iowa State University.*

Black Cutworm in Soybeans?
Cutworm impacting soybeans is rare, but it has occurred. The last significant cutworm activity in soybeans in Iowa was in 1999 (Figure 10).

Figure 10. Soybean field injured by cutworm, Calhoun County. *Photo: Iowa State University.*

Those seasons with a high threat of Black cutworm in corn, potential high-risk soybean fields (low lying, weedy, heavy residue, etc.) should also be checked.

Threshold
The threshold for black cutworms is calculated as follows with steps 1 through 4:

1. Plants/A / expected yield (bu/a) = plants/bu.
2. Corn value ($/bu) / plants per bu = $/plant.
3. Cost of control ($/a) / $ per plant = number of plants to lose to equal cost of control.
4. Number of plants to lose / plants per acre = % stand loss equal to cost of control.

Example:

1. \(34,000 \div 200 = 170\) plants/bu.
2. \(\$5 / 170\) plants per bu = \(\$0.029\) per plant.
3. \(\$15\) per acre / \(\$0.029\) per plant = 517 plants per acre to lose to equal \(\$15\) cost of control.
4. 517 plants / 34,000 plants = 0.016 or 1.6% stand loss with \(\$15\) control costs & \(\$5\) corn.

The threshold is based on the percentage of plants cut, not on plants showing leaf feeding. Use leaf feeding to help find and indentify the insect, but use percent cut plants for the threshold. If larvae are longer than \(\frac{3}{4}\)-inch, double the calculated threshold. *i.e. instead of using 1.6% cut plants, use 3.2%.*

Stop scouting when plants have reached V5 stage or if the field was sprayed. Cutworms have difficulty cutting V5 stage plants because of the larger stalk diameter, although they occasionally chew into the side of the stalk and may kill a larger plant.

There is no researched threshold for Black cutworm in soybeans. Use best judgment of estimated stand loss and cost of control.

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