FARMACOLOGY™
Powered by Legend Seeds

Agronomic Confidence | *Transforming lives, advancing yields.*

# Monitoring and Controlling Black Cutworm

## SITUATION

There are several different species of cutworm that affect agricultural production in our Legend footprint, but the one that can cause the most damage is the black cutworm. The black cutworm moths overwinter in Texas and Mexico and migrate back north from late February through early June. Once they arrive in the area, they are attracted to early green vegetation such as weed patches, cover crops, CRP acres, and young corn plants. The moths will mate and lay eggs in this green low-lying vegetation. Once the larvae emerge, a single black cutworm larva has the potential to cut four corn plants in its life-cycle. Since each moth has the potential to lay up to 30 eggs, this can become a serious threat very quickly. The freshly hatched larvae are about a fourth of an inch long and grow to be about two inches long when full sized. Their color ranges from gray to nearly black. There is a pale narrow stripe along the center of their back which helps distinguish them from other species of cutworms.

## FACTORS TO CONSIDER

Black cutworm damage and effects vary greatly depending on several things.

- The tillage done on a field, plant residue left, and the growing vegetation on the field.
- Areas adjacent to the corn fields.
- Soil moisture and temperature in each field.
- Economic thresholds for your farming operation.

*Photo Credit: Purdue University Extension*

## ACTION PLAN

**1.** Identifying the farms with the highest risk of cutworm activity. A general rule of thumb is fields with more residue such as no-till and minimum tillage have a greater risk of cutworm activity. Also, fields with green vegetation early in the spring will attract the black cutworm moths to deposit their eggs. Areas to consider would include cover crop acres, weedy patches, and areas of permanent vegetation close to the field.

**2.** Scouting for black cutworms. Scouting for black cutworm times out well with early stand evaluations and early weed scouting. The first sign of black cutworm activity is feeding on young corn plants and weeds. Black cutworms will often cut off lambsquarters and ragweed patches if the corn is not emerged yet. They will feed on the leaves, and they can also cut the plants off at soil level. Black cutworms are nocturnal feeders, so chances are you will not see them on top of the soil when you are scouting. Look closely along the base of cut plants and just under the top of the soil for the larvae. Moisture levels in the soil will

Legend SEEDS

*800.678.3346 • legendseeds.net*

Dale Viktora | Legend Sales Agronomist | Hollandale, MN

along the base of cut plants and just under the top of the soil for the larvae. Moisture levels in the soil will determine how deep you need to look for them. If the soil has adequate moisture, the larvae will be near the top, but if the soil is drier, they will be deeper.

**3.** Determining if control is needed. After scouting, if you have discovered damaged plants and have found the larvae, then you should take the following steps. First, flag an area and do a stand count. Then, return the next day to see if the damage is ongoing. The general threshold is two to three percent of the plants are cut or wilted from feeding when the larvae are ¾ inch long or less. Now, if the larvae found are larger than ¾ inch, then the threshold increases to five percent of the population showing damage. This is because smaller larvae cause more damage than larger larvae. These thresholds can change due to commodity prices and the plant population. For example, if we are starting out with a final stand of 35,000 plants per acre, we can withstand more plant damage than a starting stand of 29,000. If control is needed, cutworms can be controlled well by rescue applications of insecticides.
The black cutworm threshold is dependent on the size of the larva. Use the following steps to detemine thresholds and your potential yield loss.

**a.** Count the number of plants cut in 1/1,000 of an acre.

**b.** Determine average instar stage of the black cutworm larvae using Table 1.

**c.** Determine corn leaf stage and soil moisture condition. Soil moisture is considered inadequate if the top three to four inches are dry and rain is not in forecast.

**d.** Use Table 2 to find the yield loss factor.

**Table 1**

| | Body Length | | Head Capsule Width |
|---|---|---|---|
| Instar | Inch | mm (range) | mm (range) |
| 3 | 1/3 | 7 - 9 | 0.6 - 0.8 |
| 4 | 1/2 | 12 - 25 | 1.1 - 1.5 |
| 5 | 1 | 25 - 37 | 1.8 - 2.4 |
| 6 | 1, 1/2 | 30 - 35 | 2.5 - 3.3 |
| 7 | | 31 - 50 | 3.6 - 4.3 |

**Table 2**

| | | Average Moisture Conditions Number of Leaves (collars) | | | | | Inadequate Moisture Conditions Number of Leaves (collars) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Avg. Instar | Approx. days left to feed | 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | 4 | 5 |
| 3 | 21 | 2.4 | 1.8 | 0.8 | 0.7 | 0.7 | 1.6 | 1.2 | 0.4 | 0.4 | 0.2 |
| 5 | 14 | 1.2 | 1.4 | 0.6 | 0.3 | 0.3 | 0.8 | 0.9 | 0.3 | 0.2 | 0.2 |
| 6 | 5 | 0.7 | 0.2 | 0.1 | 0.1 | 0.1 | 0.5 | 0.2 | 0.1 | 0.0 | 0.0 |

**e.** Calculate your projected yield loss.

Yield loss = Yield Loss Factor (Table 2) X % of plants cut (as decimal) X Expected Yield X Price per Bushel

**f.** Insecticide treatment is warranted if projected yield loss is greater than the cost of insecticide + application.

*Source: University of Illinois Extension & Outreach: Black Cutworm*

*800.678.3346 • legendseeds.net*
Dale Viktora | Legend Sales Agronomist | Hollandale, MN

FARMACOLOGY™

## SUMMARY

Black cutworms can cause significant damage to our corn fields. Best management practices need to be used when determining if a treatment is needed to control the pest.

## RESOURCES

https://swroc.cfans.umn.edu/agricultural-programs/pest-management/black-cutworm-reporting-network/bcw-scouting

https://extension.entm.purdue.edu/fieldcropsipm/insects/black-cutworms.php

*800.678.3346 • legendseeds.net*
Dale Viktora | Legend Sales Agronomist | Hollandale, MN