Burrus Buzz

Delivering more than just seed!

May 6, 2015

DOCS, BOCS, and NOCS (Cutworms)

by Matt Montgomery

Phew – the title is almost enough to scare a reader off. However, don't let the title spook you. Growers are all too familiar with the term "cutworm." Despite great transgenic products for cutworm control, we still (occasionally) run into cutworm-derived stand injury. However, growers may be surprised to find out that there are many different cutworm species. For the sake of doing something different when we refer to cutworms, we will simply call them DOCS, BOCS, and NOCS.

DOCS – Destructive (or at least potentially destructive) Overwintering Cutworm Species. Growers may be surprised to find that many alternate cutworm species spend the winter here, unlike more familiar black cutworms that spend the winter down south. Following is a brief rundown of those species more often deemed of economic significance.

The Claybacked Cutworm (*Agrotis gladiora*) overwinters as a partially grown larva of fairly significant size. When found, some might refer to it as a Black Cutworm that is just too big too early. Unfortunately for corn, the large caterpillar tends to wake from its winter slumber about the time corn is a leaf or two in size. A close relative to the Black Cutworm, the Claybacked Cutworm has a smooth, gray (some might say even a slightly greasy) appearance with a yellow-brown stripe easily noticed running down the back. The unusual size of the pest in the spring, the short size of the corn plant, and the pest's ravenous appetite can combine to cause significant stand reduction. Burrus observed suspected claybacked cutworm activity in the spring of 2014.

The Glassy Cutworm (*Apamea devastator*) will not usually be called "black cutworm like" in appearance. The pest is greenish white and "glassy" in appearance (thus the name). Because the pest tends to feed in a subterranean burrow, it tends to damage the growing point of the young corn plant thus reducing stand. Glassy Cutworms are more likely where corn is planted into existing sod or planted after pasture.

The Sandhill Cutworm (*Euxoa deters*) is largely restricted to sandy soil conditions (just as the name implies). Light tan in color (some resources even refer to the body color as pale gray), this cutworm species has a slightly transparent body which allows one to see blood pulsing through the dorsal vein (the vein running down the back). The head capsule is a dull brown color. As with the Glassy Cutworm, this species feeds below ground, is capable of feeding upon the growing point, and thus can reduce stand.

No species specific thresholds exist for any of these cutworms. Most publications simply recommend that Black Cutworm rescue treatment thresholds be used to trigger insecticide applications. Economically significant feeding by any of the above three species is fairly rare when compared to feeding by the Black Cutworm.

BOCS – Benign (or at least more often benign) Overwintering Cutworm Species. Growers may also be surprised that some alternate cutworm species, known to overwinter here, tend to not be a big deal. One primary species comes to mind.

The Dingy Cutworm (*Feltia ducens)* overwinters as a partially grown larva. Unlike black cutworms (which have a rough skin texture), dingy cutworms have a more smooth skin texture. They tend to be more prevalent where fields have been weedy or where corn has been planted into sod. Identified by four equal sized spots (tubercles – sometimes termed "warts") on each body segment, they tend to feed above the growing point of the corn plant and are therefore (usually) not responsible for stand reduction.

NOCS – Non Overwintering Cutworm Species. The list of cutworm species known to migrate into our area from the south is actually pretty small. Black cutworms are, of course, the most well-known migratory cutworm, but there is another member of this category. While Black Cutworms may be of economic significance, this "other species" is usually not of economic significance.

The Variegated Cutworm (*Peridroma saucia*) migrates into the Midwest each spring from overwintering sites in the Southern United States. Moths tend to deposit eggs in weedy areas (fencerows, pasture, early season in-field escapes, etc.). The resulting larvae are nocturnal feeders that tend to hide beneath trash during the day. Their color is variable, but variegated cutworms always have a line of yellow, diamond-like markings running down the back. While occasionally of economic significance, they tend to be "top grazers" in corn – leaving the growing point undamaged and therefore are not typically known to reduce stand.

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The Black Cutworm (*Agrotis ipsilon*) is, the most famous cutworm of this long list. Black Cutworm moths migrate from southern U.S. overwintering sites and deposit eggs (often where winter annuals are present). When less than a half inch long, the larvae primarily feed on leaf material. However, once larger than a half inch – the larvae can clip corn beneath the growing point. Given enough feeding larvae, it is occasionally possible that Black Cutworms can overwhelm transgenic traits. However, overwhelming of the trait is rather rare – an exception to the rule rather than the rule itself. Known for their black-gray appearance, grainy skin quality, and unequal sized spots/tubercles/warts on each body segment – Black Cutworms persist throughout the growing season. Corn simply outgrows their ability to inflict serious injury. While there has been a recent move to recommend cutworm rescue treatments at fairly low stand loss counts, commodity prices (in our opinion) have pushed us back toward more traditionally recognized cutworm thresholds. Burrus currently recommends a rescue treatment if cutworms are less than ¾-inch and 2 to 3 percent of the plants are cut.

Burrus corn is treated with PowerShield®, which consists of Poncho 500 (standard), which improves early season protection from the damage caused by black cutworm. All Burrus PowerShield® treated corn qualifies for free 100% replant if needed.

SEED TREATMENT CHART										
Corn Products		Insecticides	Active Ingredient	a.i. per seed	Contact or Systemic	Wireworm	Black Cutworm	White Grub	Corn R
		Poncho® 250	Clothianidin	0.25 mg	S	★★	★★	★★	NL
Burrus®, Hughes®, Power Plus®	Standard	Poncho® 500	Clothianidin	0.5 mg	S	★★(★)	★★(★)	★★	NL
	Select Hybrids	Poncho® 1250	Clothianidin	1.25 mg	S	★★★	★★★	★★★	★★
		Cruiser® 250	Thiamethoxaon	0.25 mg	S	★★	★★	★★	NL
Catalyst®	Standard	Cruiser® 500	Thiamethoxaon	0.5 mg	S	★★(★)	★★(★)	★★	NL

Power Plus® 2V56 AMX™*, 4Y27 AMX™*, 4G46 AMX™*, 4J95 AMX™*, 5C17 AMXT™*, 6F74 AMX™*, 6P75 AMX™*, 7A18 AM1™*, 2N82 AM™*, 4V45 AM™*, 4J93 AM™*, 6N83 AM™*, 7U15 AM-R™*, Catalyst™ 4685 3111, 7893 3111, and Burrus 5Z44 3122 consist of a Bt protein that can control the cutworm if ingested. Given enough feeding larvae, it is occasionally possible that Black Cutworms can overwhelm transgenic traits. However, overwhelming of the trait is rather rare.

RESCUE TREATMENT OR PREVENTATIVE

Burrus recommends rescue treatments for cutworms (management based upon evidence of stand reducing cutworm injury). We do not recommend preventative treatments except in very, very rare cases. Why do we do so? Frankly, we do so because we strive to abide by the land grant university approach to cutworm management. Following are a few examples of land grant university comments related to this subject:

1) "The use of an insecticide applied as a preventative treatment (for cutworms) cannot be economically or environmentally justified" (Preventative Cutworm Treatments in Corn, ISU Crop Management Newsletter, Rice – 2001).
2) "…the tried, true, and economic approach to black cutworm management is to scout fields, determine infestation and damage levels, and use a rescue treatment, if needed" (Black Cutworm Moths Blowing into Indiana, Purdue Pest and Crop Newsletter, Krupke and Obermeyer - 2015)
3) "…it is recommended to use rescue treatments for cutworms rather than to use a pre-plant or planting-time treatment" (Black Cutworm, University of Illinois Integrated Pest Management Insect Fact Sheet – Cook, Ratcliffe, Gray, and Steffey – 2003)
4) "At-planting insecticide treatments are not generally recommended due to the sporadic nature of cutworm infestations. Instead, begin scouting fields at seedling emergence, and use 'rescue' insecticide treatments only when the appropriate economic threshold is reached" (Black Cutworm in Missouri, University of Missouri Extension, Keaster and O'Day – 2002)