

AGRONOMIC ALERT



2011 Black Cutworm Cutting Dates—Missouri

The presence of large black cutworm (BCW) larvae can lead to corn seedlings being clipped at the soil surface. To avoid stand loss, scouting is needed to help determine if economic thresholds have been met. BCW do not overwinter in the Midwest, except occasionally in the "Bootheel" region of southeastern Missouri. Adult moths overwinter in coastal areas of the Gulf of Mexico and migrate northward in the spring on strong southerly winds. Although migration into Missouri typically begins in mid-March, flights that result in economic injury to corn generally peak in April through mid-May. Corn can be clipped by BCW from emergence through the V5 (five leaf) growth stage. Damage to seedling corn may occur from early May through mid-June (in central Missouri) due to overlapping waves of migration.

Cutting Date

The University of Missouri's BCW monitoring network predicts BCW cut dates by using Growing Degree Days (GDDs) to estimate larval development based on adult moth counts found in traps. This year the monitoring network is predicting that cutworm damage may start to occur the last week of April in southwest Missouri and May 3 – 14 in central and northern Missouri (Table 1). Corn that was planted before April 10th and most likely to have emerged the third week of April could be the most at risk based on these predicted dates.

Although, cutting dates are useful, they do not provide information about the amount of larval damage that will occur and do not always predict which fields will be targeted by BCW larvae. Therefore, BCW identification and scouting are key for proper management of BCW.

Identification

BCW larvae vary from light gray to black and are about 1.5 inches long when fully grown. Numerous convex skin granules make the larvae appear shiny and "greasy".

Dingy cutworm (DCW) is another larvae that may be present in fields. However, this cutworm usually feeds on leaves and does not cause cutting problems in fields. Larger cutworms found at the beginning of

the BCW cutting dates are often DCW because DCW overwinters in a larvae stage. BCW can be distinguished from DCW by the four tubercles on the top of each body segment (Figure 1).

Scouting

Fields should be scouted for BCW from the time corn emerges until the V5 growth stage. Economic injury is more likely in fields that are in



Figure 1. Black cutworm has four tubercles on the back of each body segment.

Table 1. Predicted BCW Cut Dates in Missouri for 2011.

Region	County (City)	Date of Estimation	Expected 2011 Cut Dates
Central	Callaway (Hatton)	April 8	May 5
	Chariton (Brunswick)	April 25	May 18
	Saline (Marshall)	April 25	May 18
East Central	Franklin (Union)	April 5	April 28
Northwest	Buchanan (St. Joseph)	April 25	May 20
Northeast	Knox (Novelty)	April 18	May 17
	Holt (Forbes)	April 18	May 17
West Central	Vernon (Nevada)	April 22	May 15

Source: Adapted from University of Missouri IPM Pest Monitoring Network¹

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the 1- to 4-leaf growth stage, planted late, or have winter annual weed pressure. Plants cut by BCW below the soil may be partially pulled under the soil and can appear as if angled out of the ground surface. These plants wilt and discolor as they die. In addition to cut or missing plants, leaf feeding is an early indication of BCW (Figure 2). When scouting, larvae can be found by digging in soil near a damaged plant and the growth stage estimated by measuring body length (see below). A minimum of 50 plants in five areas in each field (a total of 250 plants per field) should be examined for damage. Plant population should also be noted as this could affect economic threshold percentages.

Economic Threshold

The University of Missouri reports that damage from 1st—3rd instar larvae (smaller than 3/4 of an inch) is typically minimal with minor leaf feeding on the edge of corn seedling leaves. Cutting damage is caused by 4th instar larvae (3/4 of an inch) or larger and plants can be cut at or below the soil surface. Dr. Wayne Bailey, from the University of Missouri, said that due to the high cost of corn this year, treatment of BCW infestations is justified when 2-3% of seedling corn plants have been cut above or below ground.

Corn clipped below ground is more likely to die. If corn is clipped above ground, it may survive, but it has a higher risk for disease infection. Wet soils often favor above ground clipping. Once corn is at the V5 or V6 growth stage, it is less susceptible to BCW damage.

Management

An insecticide rescue treatment is recommended when thresholds are met (Table 2). Follow label directions and make sure that insecticide treatments comply with insect resistant management requirements.

Growers who planted Genuity® Smartstax® corn products have a mode of action which helps protect against black cutworm. Traits from these corn products are complimented with Acceleron® seed treatment products, which include clothianidin insecticide to provide additional suppression for black cutworm. Use of these new technologies has the potential to reduce the risk of stand loss from BCW.

Figure 2.
Black cutworm feeding damage.



Sources: ¹University of Missouri. March 2011. IPM Pest Monitoring Network. [Online] <http://ppp.missouri.edu> (verified 4/28/11); ²W. Bailey. April 13, 2011. First Intensive Captures of Black Cutworm Moths. University of Missouri. Volume 21, No. 6; Additional references used in developing publication: M.L. Boyd and W. Bailey. April 2002. Black cutworm in Missouri. University of Extension. Publication G7112; A. Sisson, L. Jesse, and E. Hodgson. 2010. Black cutworm scouting advisory 2010. Iowa State University; M. Rice and R. Pope. May 7, 2001. Early cutworm scouting for southern Iowa (IC-486(8)). Iowa State University; K. Cook, et. al. 2004. Black cutworm. University of Illinois. [Online] <http://ipm.illinois.edu> ; University of Missouri. 2010. 2010 Missouri black cutworm intensive capture counts. MU IPM Pest Monitoring Network.

Table 2. Common insecticides for foliar BCW rescue treatment.

Common Name	Trade Name	Rate of formulated material per acre
permethrin	Ambush® 25WP	6.4 to 12.8 fl oz
permethrin	Ambush® Insecticide	6.4 to 12.8 fl oz
chlorpyrifos	Lorsban® Advanced	1 to 2 pt
zeta-cypermethrin	Mustang MAX™	1.28 to 2.8 fl oz
lamda-cyhalothrin	Warrior II with Zeon Technology®	0.96 to 1.6 fl oz
cyfluthrin	Baythroid® XL	0.8 to 1.6 fl oz
zeta-cypermethrin + bifenthrin	Hero™	2.6 to 6.1 fl oz

Source: Adapted from University of Missouri²

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