



## CORN

### SECTION 5

Evaluation of experimental and commercially available insecticidal seed treatments for control of black cutworm larvae (*Agrotis ipsilon*) in Illinois, 2007

Ronald E. Estes, Kevin L. Steffey, and Michael E. Gray

#### Location

We established one trial at the University of Illinois Agricultural Engineering Farm near Urbana (Champaign County).

#### Experimental Design and Methods

The experimental design was a randomized complete block with four replications. The plot size for each treatment was 10 ft (four rows) x 17.5 ft. Steel barriers (5.5 ft x 5.5 ft, 5 in tall) were placed around approximately 20 plants in each plot. Each plant within the barrier was infested with two second- to third-instar black cutworms on 19 June. The number of plants that were fed upon or cut by the larvae was recorded on 24 and 29 June and on 3 July (5, 10, and 15 days after infestation).

#### Planting Information

The trial was planted on 8 June using a four-row, Almaco constructed planter with John Deere 7300 row units. Precision cone units were used to plant the seeds.

Active ingredients for all chemical insecticides, except those with experimental numbers, are listed in Appendix II.

#### Agronomic Information

Agronomic information is listed in Table 5.1.

#### Climatic Conditions

Temperature and precipitation data are presented in Appendix III.

#### Statistical Analysis

Data were analyzed using ARM 7 (Agricultural Research Manager), revision 7.3.6. (Copyright © 1982–2007 Gylling Data Management, Inc., Brookings, SD).

#### Results and Discussion

The mean number of plants that were cut or fed upon by black cutworm larvae are presented in Table 5.2. Due to the relatively low level of injury, there were no significant differences in the amount of injury caused by black cutworm larvae among any of the plots. Although each plant was infested with black cutworm larvae to increase the probability for injury, apparently there was a high level of larval mortality due to environmental conditions or other unknown factors.

**TABLE 5.1** • Agronomic information for evaluation of experimental and commercially available insecticidal seed treatments to control black cutworm larvae, Urbana, University of Illinois, 2007

Planting date	8 June
Row spacing	30 inches
Seeding rate	30,000
Hybrid	Unknown



## CORN

**TABLE 5.2** • Evaluation of experimental and commercially available insecticidal seed treatments to control black cutworm larvae, Urbana, University of Illinois, 2007

Product	Rate <sup>2</sup>	24 June, 5 DAI <sup>1</sup>		29 June, 10 DAI <sup>1</sup>		3 July, 15 DAI <sup>1</sup>	
		Mean no. of cut plants <sup>3</sup>	Mean no. of plants with feeding injury <sup>3</sup>	Mean no. of cut plants <sup>3</sup>	Mean no. of plants with feeding injury <sup>3</sup>	Mean no. of cut plants <sup>3</sup>	Mean no. of plants with feeding injury <sup>3</sup>
DPX-E2Y45	0.25	0.00 a	10.50 a	0.25 a	13.00 a	0.25 a	13.75 a
DPX-E2Y45	0.75	0.00 a	9.75 a	0.25 a	10.00 a	0.25 a	11.25 a
DPX-E2Y45 + Gaucho	0.25 0.25	0.00 a	10.50 a	0.50 a	10.75 a	0.50 a	11.50 a
DPX-E2Y45 + Gaucho	0.75 0.25	0.00 a	8.00 a	0.25 a	8.75 a	0.25 a	9.75 a
Gaucho	0.25	0.00 a	14.00 a	0.25 a	14.50 a	0.25 a	14.50 a
Poncho	0.25	0.00 a	12.00 a	0.00 a	14.00 a	0.00 a	14.50 a
UTC <sup>4</sup>	—	0.00 a	9.25 a	0.00 a	9.75 a	0.00 a	10.50 a

<sup>1</sup> DAI = days after infestation of second- and third-instar black cutworms.

<sup>2</sup> Rates of application for seed treatments are milligrams (mg) of active ingredient (a.i.) per seed.

<sup>3</sup> Means followed by the same letter do not differ significantly (P = 0.05, Duncan's New Multiple Range Test).

<sup>4</sup> UTC = untreated check.