



CORN

SECTION 4

Evaluation of Herculex XTRA (HxXTRA) for control of black cutworm larvae (*Agrotis ipsilon*) in Illinois, 2007

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

Location

We established two trials on 8 June and 14 September 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 1 row x 10 plants.

In the trial planted on 8 June, each plant (stage V2–V3) was infested with two second- to third-instar black cutworms on 19 June. A 6-in section of 4-in diameter PVC pipe was placed over each plant as a barrier to contain black cutworm larvae. The number of plants that were fed upon or cut by the larvae was recorded on 22, 26, and 29 June and on 3 July (3, 7, 10, and 14 days after infestation).

For the trial planted on 14 September, each plant (stage V2–V3) was infested with two second-instar black cutworms on 25 September. A 6-in section of 4-in diameter PVC pipe was placed over each plant as a barrier to contain black cutworm larvae. The number of plants that were fed upon or cut by the larvae was recorded on 2, 9, and 16 October (7, 14, and 21 days after infestation).

Planting Information

The trials were planted on 8 June and 14 September using a four-row, Almaco constructed planter with John Deere 7300 row units. Precision cone units were used to plant the seeds.

Agronomic Information

Agronomic information is listed in Table 4.1.

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 Tables 4.2 and 4.3 for the 8 June and 14 September plantings, respectively. Due to the relatively low level of injury, there were no significant differences in the amount of injury caused by black cutworm larvae between the plots with HxXTRA (Mycogen 2T787) and the UTC (Mycogen 2T777). 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 4.1 • Agronomic information for evaluation of Herculex XTRA (HxXTRA) to control black cutworm larvae, Urbana, University of Illinois, 2007

Planting dates	8 June 14 September
Row spacing	30 inches
Seeding rate	~1 seed/foot
Hybrids	Mycogen 2T787 HxXTRA Mycogen 2T777 RR2



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TABLE 4.2 • Evaluation of Herculex transgenic corn hybrids (HxXTRA) to control black cutworm larvae, 8 June planting, Urbana, University of Illinois, 2007

Product	22 June, 3 DAI ¹		26 June, 7 DAI ¹		29 June, 10 DAI ¹		3 July, 14 DAI ¹	
	Mean no. of cut plants ²	Mean no. of plants with feeding injury ²	Mean no. of cut plants ²	Mean no. of plants with feeding injury ²	Mean no. of cut plants ²	Mean no. of plants with feeding injury ²	Mean no. of cut plants ²	Mean no. of plants with feeding injury ²
HxXtra (Mycogen 2T787)	0.00 a	6.25 a	0.00 a	9.00 a	0.00 a	9.25 a	0.00 a	9.25 a
UTC ³ (Mycogen 2T777)	0.00 a	6.25 a	0.75 a	8.25 a	1.25 a	8.25 a	1.25 a	8.25 a

¹ DAI = days after infestation by second- and third-instar black cutworms.

² Means followed by the same letter do not differ significantly (P = 0.05, Duncan's New Multiple Range Test).

³ UTC = untreated check.

TABLE 4.3 • Evaluation of Herculex transgenic corn hybrids to control black cutworm larvae, 14 September planting, Urbana, University of Illinois, 2007

Product	2 October, 7 DAI ¹		9 October, 14 DAI ¹		17 October, 21 DAI ¹	
	Mean no. of cut plants ²	Mean no. of plants with feeding injury ²	Mean no. of cut plants ²	Mean no. of plants with feeding injury ²	Mean no. of cut plants ²	Mean no. of plants with feeding injury ²
HxXtra (Mycogen 2T787)	0.00 a	7.50 a	0.00 a	8.75 a	0.00 a	9.00 a
UTC ² (Mycogen 2T777)	0.00 a	5.25 a	0.00 a	7.00 a	0.00 a	7.75 a

¹ DAI = days after infestation by second- and third-instar black cutworms.

² Means followed by the same letter do not differ significantly (P = 0.05, Duncan's New Multiple Range Test).

³ UTC = untreated check.