Late Planted Field Corn Variety Trial, 2010
University of Delaware

Objective: Five field corn hybrids were planted on June 29 at the Georgetown Research and Education Center to simulate a double crop planting system. In a typical year, a percentage of Delaware's field corn acreage is planted double crop, either behind barley or peas. For a number of years, producers have expressed concern over the presence of fall armyworm feeding in whorl stage corn and ear damage from corn earworm in these later plantings. Foliar insecticides have not provided effective control of these two insects in late planted field corn. Research results from trials with newer BT technologies (i.e. Herculex and SmartStax's) indicate that these technologies provide control of these two insect problems. This trial was established to determine the effectiveness under Delaware conditions as well as look at the yield response.

Procedures: Research plots 20 ft wide (8 rows on 30-inch centers) by 40 ft long were replicated four times in a randomized complete block design. Stand counts were taken from the center two rows of each plot (80 linear foot of row) on July 27. Fall armyworm damage was evaluated on July 27 by counting the number of damaged plants in the same two rows and calculating the percent damage. Corn earworm damage was evaluated on September 1 before physiological maturity. All the ears were collected from a single row (40 linear feet) and evaluated for corn earworm damage. The following data was collected: total number of infested ears (1 or more larvae per ear) and total number of damage ears (damaged ears but may or may not have had larvae present). Damage was rated as no damage, tip damage (1" or less), and damage >1" below tip. Plots were harvested at physiological maturity on November 19 and yields adjusted to 15.5 % moisture. Data were analyzed using Proc GLM and means were separated by Tukey's mean separation test (P=0.05).

Results:

TRT #	Variety	Stand Count July 27	% FAW Damaged Plants July 27	% Clean Ears Sept 1	% Ears CEW Tip Damage Sept 1	% Ears CEW Damage > 1 cm Sept 1	Yield BU/A
1	2K662 HXT/RR	117.25a	7.64b	19.20b	10.03a	70.78a	123.14a
2	ST 6208 RR	114.75ab	24.15ab	8.63b	17.08a	74.29a	93.05b
3	2D692 SmartStax	117.25a	1.71b	93.39a	3.99a	2.62b	127.56a
4	DKC 55-08 RR2	110.75b	42.47a	12.15b	14.13a	73.73a	88.66b
5	DKC 55-09 GENSS	118.50a	6.57b	98.08a	1.93a	0.00b	116.93a

Means in the same columns followed by the same letter are not significantly different (Tukey's; P=0.05).

Comments: Overall, the 2K662 HXT/RR, 2D692 SmartStax, and DKC 55-09 GENSS (newer Bt hybrids) all provided significantly better control of fall armyworm compared to the non –Bt hybrids (ST 6208 RR and DKC 55-08 RR2). In general, the 2D692 SmartStax and DKC 55-09 GENSS hybrids provided the best corn earworm control. All three Bt varieties provided significantly higher yields compared to the non-Bt hybrids.