

BECK'S Non-Bt Corn vs. Bt Study - 2003

Location: H5 plot
Planted: April 14, 2003
Harvested: September 29, 2003
Rows: Four 30" rows
Population: 28,800 seeds/A.

Previous Crop: Soybeans
Tillage: No-Till
Herbicide: PPI: 2.25 qts. Bicep II Magnum
 1 qt. Princep
Insecticide: Aztec

RAINFALL	
April	1.5 in.
May	7.7 in.
June	2.0 in.
July	10.4 in.
August	5.2 in.
Total	26.8 in.

Purpose: In 2003 we evaluated three non-Bt hybrids and their Bt conversions, which were each a different Bt event. BECK 5322 compared to BECK 5322CB (Mon 810 event), BECK 5422 compared to BECK 5422Bt 1 (Bt 11 event) and BECK EX 1056 compared to BECK EX 1371 (Herculex 1 event in the same isolate).

Brand-Hybrid	Harvested Population	Test Weight	Percent Broken Stalks	Percent Moisture	Bushels* Per Acre	Advantage for Bt
BECK 5322	25,750	56.4	0.0	26.3	203.2	
BECK 5322CB (Mon 810)	27,250	56.5	0.0	25.2	219.2	+16.0
BECK 5422	27,250	53.5	0.0	27.7	197.4	
BECK 5422Bt 1 (Bt 11)	27,000	55.7	0.0	28.7	204.4	+7.0
BECK EX 1056	25,250	54.7	0.0	33.1	174.5	
BECK EX 1371 (Herculex I)	26,000	54.8	0.0	32.6	172.6	-1.9
						+7.0

*Bushels per acre corrected to 15.5% moisture.

Summary: Collectively, the Bt hybrids averaged 7.0 Bu./A. more than the non-Bt hybrids. Early planted corn is generally at greater risk to ECB feeding than corn planted mid-season. This study proved the value of Bt corn in this situation.

Corn Borer Facts: European corn borer overwinter in crop and weed residue. The severity of damage along with the population of European corn borer is difficult to predict from year to year because of the environmental factors that effect its survival. We do know that the earliest planted corn along with the latest planted corn is at most risk for damage. First generation European corn borer attacks the stalks while second generation will attack the stalk, ear shank and tassel. Each female European corn borer moth can produce over 400 eggs spread over numerous plants and fields. When we have a severe outbreak (1 in every 5 to 6 years) we will see a wider window where damage occurs. Damage on average is 5% reduction in yield from every European corn borer per plant per acre. Protecting the first 15% of your acres planted and the last 15% of your acres planted with a Bt hybrid will reduce your risk of losses from European corn borer.



Different Bt Events: **MON 810** was released in 1996 by Monsanto. MON 810 has resistance to both first and second generation European and Southwestern corn borer with some suppression of corn earworm. Beck's designates this event as (CB). MON 810 **is not** resistant to Liberty herbicide.

Bt 11 was released in 1996 from Syngenta. Bt 11 has resistance to both first and second generation European and Southwestern corn borer with some suppression of corn earworm. Beck's designates this event as (Bt 1). This event is resistant to Liberty herbicide.

Herculex I was released in 2001 from Mycogen Seeds (Dow AgroSciences) and Pioneer Hi-Bred International (Dupont). Herculex I provides resistance to both first and second generation European and Southwestern corn borer along with black cutworm and fall armyworm. Beck's is evaluating this event in experimental hybrids. This event is resistant to Liberty herbicide.