

BECK'S Zone-Till vs. Conv.-Till Long Range Corn Study - 2003

Location: E5 – E8 plots
Planted: April 15, 2003
Harvested: October 3, 2003
Rows: Four 30" rows
Replications: Two (averaged)
Soil Type: Crosby / Brookston / Miami
Population: 28,800 seeds/A.
Previous Crop: Soybeans

Herbicide: Conv.: Pre: 2.25 qts. Bicep II Magnum
 1 qt. Princep
 Zone-Till: Pre: 2.25 qts. Bicep II Magnum
 1 qt. Princep
 22 oz. Roundup WeatherMax

Insecticide: Aztec
Tillage: Zone-Till = 7" wide with 3 coulters
 Conv.-Till = V-Rip & S-Tine

Purpose: To establish a long-range study to compare Zone-Till with Conventional-Till. In this study, we are looking at how eight different corn hybrids respond in yield, moisture, emergence, test weight, stalk quality, and disease resistance. We are also looking at how both types of practices affect soil tilth, water movement, and earthworm populations. Except for zone tilling the 7" strip where the corn is planted and injecting the 28% nitrogen 6" deep between the rows, we have not tilled the zone-till area the past 13 years.

Yield Rank	Brand-Hybrid	Harvested Population	Test Weight	Percent Broken Stalks	Percent Moisture	2003 Bushels* Per Acre	Yield Advantage Conv.-Till
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ZONE-TILL STUDY

1	BECK EX 1339	29,438	57.0	1.8	23.0	202.9	
2	BECK 5422CBCL	30,500	55.9	2.4	26.3	200.8	
3	BECK 5229CL	29,250	57.0	0.9	23.7	197.3	
4	BECK 6464CL	29,438	55.8	0.0	27.5	196.6	
5	BECK 5339CBCL	30,125	56.4	0.0	25.5	196.5	
6	BECK 7997CL	28,563	54.8	0.9	33.2	192.3	
7	BECK 5454CL	30,188	55.8	0.0	26.5	185.8	
8	BECK 5737CL	<u>27,875</u>	<u>57.4</u>	<u>0.0</u>	<u>22.7</u>	<u>184.8</u>	
	AVERAGE	29,422	56.3	0.8	26.1	194.6	

CONVENTIONAL STUDY

1	BECK EX 1339	31,250	57.9	0.8	21.3	210.7	+7.8
2	BECK 5229CL	29,563	57.3	0.0	22.9	205.7	+8.4
3	BECK 5422CBCL	31,125	56.1	0.0	26.4	199.7	-1.1
4	BECK 5339CBCL	30,438	57.0	0.0	24.0	198.0	+1.5
5	BECK 6464CL	30,000	56.4	0.0	25.2	197.3	+0.7
6	BECK 5737CL	29,313	58.0	2.5	21.1	192.3	+7.5
7	BECK 7997CL	28,250	55.2	0.9	31.3	190.4	-1.9
8	BECK 5454CL	<u>31,688</u>	<u>55.9</u>	<u>0.0</u>	<u>26.2</u>	<u>181.9</u>	-3.9
	AVERAGE	30,203	56.7	0.5	24.8	197.0	

*Bushels per acre corrected to 15.5% moisture.

Summary: The graph shows how yields improved in zone-till areas after the third year, and consistently out-yielded conventionally tilled areas thereafter, except for the past two years. We believe soil type greatly affects the degree to which hybrids respond to zone-till practices.

Increased earthworm and microorganism populations have helped improve the tilth of this medium productivity soil type. The dry weather during parts of the season, especially in August for the period 1995-2001, may also be contributing to higher yields in zone-till areas, due to their greater moisture holding capacity.

Since 1995, yields in zone-till have averaged 4.9 bushels per acre more than yields in conventional.

**Zone-Till vs. Conv.-Till Study
All Hybrids (1991-2003)**

