

BECK'S 300 Bu. Attempt – 2003

(Compares Normal vs. High Population and 30" vs. Twin Rows)

Location:	300-2, 3, 4 S. plots	Fertilizer:	Fall:	300# 6-15-40	= 18 # actual N
Harvested:	October 2, 2003	(on Twin Rows)	Pre:	18 gal/A. 28-0-0	= 54 # actual N
Rows:	Four 30" Rows		Pop Up:	8 gal/A. 10-34-0	= 9 # actual N
Soil Type:	Genesee Silt Loam		Starter: (7" over	50 gal/A. 28-0-0	=149 # actual N
Tillage:	Moldboard Plow / S-tine		from row)		230 # actual N
Previous Crop:	Corn	Fertilizer:	Fall:	300# 6-15-40	= 18 # actual N
Insecticide:	Aztec	(on 30" rows)	Pre & Starter:	26 gal/A. 28-0-0	= 77 # actual N
Herbicide:	Pre: 2.5 qts. Bicep II Magnum			8.5 gal/A. 10-34-0	= 10 # actual N
	1 qt. Princep		Sidedress:	40 gal/A. 28-0-0	= 119 # actual N
	Post: 3 oz. Callisto				224 # actual N
	0.67 oz. Accent				
	1 pt. Atrazine				

Purpose: In our attempt to reach 300 bushels per acre, we have tried several different approaches in the past 23 years. In the early years, we increased our populations and applied extremely high rates of fertilizer as well as some micronutrients. In the middle years, we tried using different tillage methods like v-rip, chisel, and moldboard plow. Since 1991, we've been testing zone-till vs. conventional to study the long-term effects of these methods.

Now in 2003, we are testing ultra-high populations and twin rows using conventional-till practices. Our next phase of research will also compare crop rotation patterns where we will look at continuous corn, two year corn/one year bean, and corn after soybean rotations.

Brand-Hybrid	Harvested Population	Percent Broken Stalks	Test Weight	Percent Moisture	Bushels* Per Acre
<u>Twin Rows @ 39,000 planted April 28, 2003</u>					
BECK 5229	40,500	6.2	56.8	24.2	226.8
BECK 5166	35,500	0.0	57.9	21.4	216.4
BECK 5538	38,000	2.6	56.6	25.4	205.9
BECK 5322CB	34,000	5.9	57.9	21.1	202.8
BECK 5283Bt 1	41,500	1.2	58.1	20.7	201.6
BECK 5959	41,000	0.0	55.6	29.2	196.7
BECK 5737CL	40,000	0.0	56.8	24.5	187.9
BECK 5339CBCL	<u>36,500</u>	<u>4.1</u>	<u>56.6</u>	<u>25.4</u>	<u>158.3</u>
AVERAGE	38,375	2.5	57.0	24.0	199.5
<u>30" Rows @ 31,000 planted April 23, 2003</u>					
BECK 5538	29,000	1.7	57.4	22.5	214.6
BECK 5366	29,000	0.0	57.3	22.3	214.2
BECK 5322CB	30,500	1.6	57.8	21.1	203.6
BECK 5166	29,500	1.7	58.2	20.3	199.0
BECK 5422	31,000	1.6	57.1	22.8	194.8
BECK 6197	29,500	0.0	55.6	28.6	193.2
BECK 7997CB	29,500	1.7	56.2	26.4	187.7
BECK 5737CL	<u>29,000</u>	<u>0.0</u>	<u>58.1</u>	<u>20.7</u>	<u>186.4</u>
AVERAGE	29,625	1.0	57.2	23.1	199.2
<u>30" Rows @ 39,000 planted April 23, 2003</u>					
BECK 6197	34,000	1.5	55.1	31.8	209.7
BECK 5339CBCL	32,500	6.2	56.8	24.7	208.2
BECK 7997CB	39,000	0.0	55.6	29.2	201.6
BECK 5229	30,500	6.6	57.4	22.4	193.0
BECK 5166	34,000	4.4	58.1	20.4	189.5
BECK 5959	31,000	1.6	56.4	25.2	187.1
BECK 5538	34,500	5.8	57.0	23.5	179.9
BECK 5737CL	<u>32,500</u>	<u>4.6</u>	<u>58.0</u>	<u>20.9</u>	<u>174.5</u>
AVERAGE	33,500	3.8	56.8	24.7	192.9
<u>Comparison of three common hybrids tested in all three studies: Beck 5166, 5538, 5737CL</u>					
Twin Rows @ 39,000	37,800	0.9	57.1	23.7	203.4
30" Rows @ 31,000	29,200	1.1	57.9	21.2	200.0
30" Rows @ 39,000	33,700	4.9	57.7	21.6	181.3

*Bushels per acre corrected to 15.5% moisture.

BECK'S 300 Bu. Attempt (continued) – 2003

Summary: This year we fell surprisingly short of our 300 bushel per acre goal, considering the high corn yields in our area in general. Excessive moisture in this low-lying field reduced the amount of available nitrogen, thereby putting a cap on the plants ability to produce higher yields. Beck 5229 in twin rows at 39,000 population was our plot winner overall at 226.8 bushels per acre. It is unusual for a determinate ear hybrid to win a high yield test, but because 5229 is an early user of nitrogen and likes high populations, it took advantage of the additional spacing provided in the twin rows and out-yielded the second place hybrid by over 10 bushels per acre. Even though we planted the twin rows five days later than the 30" rows, they produced the most yield overall, and as expected, had slightly higher moisture due to the later planting date. They handled the stress of 39,000 population much better than the 30" rows, both in yield and resistance to stalk and root lodging. However, the 30" rows at 31,000 population provided nearly equal yield and standability to the twin rows. While we don't consider this test as a direct comparison between twin rows and 30" rows, due to the planting date difference, the agronomic characteristics we saw relating to stalk and root lodging and overall performance would likely be repeated if this test was done again and all plots planted on the same date.



Special thanks to Great Plains Manufacturing Co. for providing the twin row planter to use in our tests.



The twin rows can be easily harvested with a 30" row combine head.

BECK'S 300 Bu. Historical Data High Fertility Zone-Till vs. Conventional-Till – 1991-2001

Summary: In eleven years of testing, the zone-till areas have out yielded the conventional areas only three times. In our other zone-till vs. conventional test on less productive soil, the zone-till yields have averaged 7.5 bu./a. more than the conventional areas for the past seven years. We believe the long-term research findings are showing us that zone-till yields will exceed conventional yields over time in light and medium productivity soils, but that conventional methods may have the long-term advantage on the very dark, highly productive soils, like this Genesee silt loam soil.

