

CORN HYBRID YIELD TRIAL ON A LEEPER SILTY CLAY LOAM SOIL IN 2004

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ABSTRACT: This study was conducted to evaluate the yield response of selected stacked gene (BT/RR) Roundup Ready and conventional corn hybrids. Early season growing conditions were poor in May and June due to excessive rainfall (169% to 211% of normal). Late season growing conditions, during the grain fill period, however, were good and the yields were average or slightly above average. The corn hybrid 50% tassel dates ranged from 6/01/04 to 6/10/04. No corn lodging was observed at the time of harvest. Corn yields ranged from 108.6 to 151.3 bu/ac. Pioneer 32D99 produced the highest yield of 151.3 bu/ac. Pioneer 33P66 and Dekalb hybrids, and lines NB6602EZA1-YGCB and A1-YGCB, DKC 63-62-RR2, NA 6904 (conventional) DKC 63-52-RR2/YGCB and NB6106 (conventional) produced yield equal to Pioneer 32D99. Seed test weight ranged from 53.07 to 59.18 lb/bu. All hybrids except Dekalb NBG502, had test weight above 54.0 lb/bu which is the minimum test weight required for corn to be sold as number 2 yellow corn in the grain trade.

CITATION: Buehring, N.W., M.P. Harrison, and R.R. Dobbs. 2005. Corn hybrid yield trial on a Leeper silty clay loam soil in 2004. Annual Report 2004 of the North Mississippi Research and Extension Center. Mississippi Agricultural & Forestry Experiment Station Information Bulletin 419:43-45.

KEYWORDS: Corn Hybrids

MATERIALS AND METHODS: A field study was conducted on a Leeper silty clay loam soil, Verona, Mississippi, during the 2004 growing season to evaluate yield response of selected stacked gene (BT/RR), Roundup Ready (RR) hybrid and conventional corn hybrids. The study was conducted as a randomized complete block with 4 replications. Plot size was 4 rows (30-inch) by 40 ft. Soil test results indicated P and K levels were the high range. Therefore, no P or K fertilizer was applied.

Land preparation consisted of disking twice on 10/7/03; bed-roller on 10/8/03; terra-till on 10/9/03; and bed-roller on 10/18/03. The corn was planted 3/22/04 with Lorsban 15G (chlorpyrifos) at 1.3 lb ai/ac applied in-furrow. The seeding rate was 28,000 seed/ac in 30-inch rows. A burndown application of Roundup WEATHERMAX (glyphosate) + Clarity (diacamba) at 1.0 + 0.25 lb ai/ac was made on 3/13/04. Gramaxone (paraquat) + Dual (metolachlor) + Atrazine + surfactant at 0.43 + 2.0 + 2.0 lb ai/ac + 0.3 pt/ac were applied premergence after corn planting. Sidedress liquid nitrogen (32% N) at 180 lb N/ac was applied 6 inches from row and 2 inches deep to 9- inch tall corn on 4/29/04.

The center 2 rows of each 4-row plot were harvested for grain yield with a plot combine on 9/2/04. The grain was weighed after harvest, and grain moisture and test weight were determined with a Dickey John[®] GAC 2000 grain analysis computer. All yields were adjusted to 15% seed moisture. Data was subjected to Analysis of Variance and treatment means were separated using Fisher's Protected LSD calculated at the 5% significance level.

RESULTS AND DISCUSSION: The early season growing conditions were poor in May and June due to excessive rainfall. However, late season conditions, especially during the grain fill period, were good and resulted in average or slightly above average. Corn yields ranged from 108.6 to 151.3 bu/ac with a study mean yield of 130 bu/ac (Table 1). Pioneer 33P66 (conventional hybrid) Dekalb DKC 63-62-RR2 and Pioneer 32D99 (conventional) showed no yield difference with yield of 141 to 151 bu/ac. They were higher in yield than Terral TV 2140 RR, Dekalb NA6606EZA3-YGCB, Dekalb DKC 64-11-RR2/YGCB, Dekalb DKC 69-71-RR2/YGCB and Dekalb DKC 63-81-RR2/YGCB. Seed test weight ranged from 53.07 to 59.18 (Table 1). Dekalb NB6503, a conventional hybrid had the highest test weight of 59.18 and was higher than all other hybrids. However, all hybrids except Dekalb NB6502 had test weights higher than 54 lb/bu, which is the minimum test weight required for corn to be sold as number 2 yellow corn in the grain trade.

COOPERATORS: None

PUBLICATIONS: None

Table E304table 1-Corn hybrid

Table 1. Corn hybrid yield and test weight response on a leeper silty clay loam soil in 2004, Verona, MS.

Hybrid	Brand	50% Tassel		BTW lb/bu	Yield bu/ac
		Date			
32D99-conv	Pioneer	6/10		56.85	151.3
DKC63-62-RR2	Dekalb	6/03		54.95	141.2
33P66-conv	Pioneer	6/07		57.08	141.1
NB6602EZA1-YGCB	Dekalb	6/03		54.47	138.5
NA6904-conv	Dekalb	6/07		57.28	136.9
DKC63-52-RR2/YGCB	Dekalb	6/03		54.7	136.3
NB6106-conv	Dekalb	6/07		54.82	136.0
DKC61-45-RR2/YGCB	Dekalb	6/07		54.73	133.3
NB6104-conv	Dekalb	6/03		54.6	131.4
DKC69-72-RR2	Dekalb	6/07		57.05	131.3
31G98-conv	Pioneer	6/10		57.2	130.8
DKC64-10-RR2	Dekalb	6/07		55.55	129.9
NB6502-conv	Dekalb	6/07		53.07	128.5
34B24-YGCB	Pioneer	6/07		57.1	128.3
DKC60-19-RR2/YGCB	Dekalb	6/01		54.95	127.3
31B13-YGCB	Pioneer	6/07		54.75	127.1
NB6503-conv	Dekalb	6/07		59.18	125.7
TV 2140 RR	Terral	6/07		54.45	124.6
DKC63-81-RR2/YGCB	Dekalb	6/07		57.45	120.5
DKC69-71-RR2/YGCB	Dekalb	6/10		57.25	115.5
NA6606EZA3-YGCB	Dekalb	6/07		55.93	115.3
DKC64-11-RR2/YGCB	Dekalb	6/10		56.03	108.6
		LSD (P=.05)		1.53	16.2
		CV		1.94	8.8
		Grand Mean		55.88	130