NO-TILLAGE CORN HYBRID EVALUATION

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ABSTRACT: A field study was established to evaluate yield for several corn hybrids in a no-tillage environment. This study will help provide corn producers knowledge for their corn hybrid selections. Forty-three corn hybrids were planted on April 20. Insect pressure was minimal and environmental growing conditions were good for corn production in 2004. Average yield for the trial was 216.8 bu/ac. Dekalb 63-62, Terral 25BR23 (experimental), and Pioneer 33P67 yielded at least 230 bu/ac. All hybrids yielded greater than 200 bu/ac, except Terral 23R40, which yielded 186.9 bu/ac.

CITATION: Garrett, T.F., M.W. Shankle, and J.L. Main. 2005. No-tillage corn hybrid evaluation. Annual Report 2004 of the North Mississippi Research & Extension Center. Mississippi Agriculture & Forestry Experiment Station Information Bulletin 419:55-57.

KEYWORDS: corn hybrids, no-tillage

MATERIALS AND METHODS: A corn hybrid study was established in 2004 to determine yield potential in a no-tillage environment at the Pontotoc Ridge-Flatwoods Experiment Station. The soil type was a Providence silt loam (fine-silty, mixed, thermic Typic Fragiudulfs). Experimental design was a randomized complete block with four replications. Plot size was 10 x 35 ft. Fertilizer and lime were applied in the spring according to Mississippi State Soil Testing Laboratory recommendations. A burndown application of 1.0 lb ai/ac glyphosate was applied 2 weeks prior to planting. Forty-three corn hybrids were planted in 30-in rows on March 25 with a seeding rate of 32,000 seed/ac. A T-band application of 1.23 lb ai/ac Lorsban (chlorpyrifos) was applied at planting. A preemergence application of Aatrex (atrazine) + Dual (metolachlor) at 1.8 + 1.0 lb ai/ac was applied after planting. Due to raccoon damage, as seed were emerging, the trial was replanted on April 20. Three days prior to replanting a burndown application of 0.75 lb ai/ac Gramoxone Max (paraquat) + 0.25% v/v NIS was applied to eliminate corn plants from the previous planting. An application of 0.37 lb ai/ac Liberty (glufosinate) was applied immediately following replanting to control regrowth of previously emerged corn. A side-dress application of 180 lb N/ac (32% UAN solution) was applied 6-in from the row and 2-in deep at the 6 to 8 leaf stage. The two center rows of each plot were mechanically harvested on September 8. Corn grain from each plot was weighed and seed moisture was determined using a MT3 Farmex® grain moisture tester. Yield was adjusted to 15.5% moisture. Analysis of variance was conducted and means separated using Fishers Protected LSD (α=0.05).

RESULTS AND DISCUSSION: Forty-three corn hybrids were planted in a no-tillage environment and growth characteristics, lodging potential, and yield were evaluated. Insect pressure was minimal and environmental growing conditions were good for corn production in 2004. Rainfall during the growing season was 0.99, 9.77, 9.03, 4.61, 3.45, and 0.28 inches following planting in April, May, June, July, August, and until harvest on September 8,

respectively. Mean yield for the study was 216.8 bu/ac. This is an increase from the 2003 mean yield with similar corn hybrids, which was 180 bu/ac (data not shown). In 2004, all hybrids yielded at least 185 bu/ac (Table 1). Yield was 230 bu/ac or greater with Dekalb 63-62, Terral 25BR23 (experimental), and Pioneer 33P67. Dekalb 63-62 is enhanced with Roundup Ready technology. Pioneer 33P67 is enhanced with YieldGard technology. Terral 25BR23 (experimental) is enhanced with both Roundup Ready and YieldGard technology. The highest yield for a conventional hybrid was 227.5 bu/ac with Pioneer 33P66. Dekalb 69-71 yielded 226.6 bu/ac, which was the highest yield for a commercially available variety enhanced with both Roundup Ready and YieldGard technology. All hybrids yielded greater than 200 bu/ac, except Terral 23R40, which yielded 186.9 bu/ac.

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Table 1. No-tillage corn hybrid trial at the Pontotoc Ridge-Flatwoods Experiment Station, 2004.

Brand	Hybrid	Trait	Ear Height	Lodging	Yield
			----Inches----	-------%-------	-----Bu/ac-----
Dekalb	DKC 63-62	RR	45.3	0.7	242.3
Terral	TVX 25BR23	YGCB/RR	40.7	0.0	234.9
Pioneer	PI 33P67	YGCB	42.3	0.5	230.2
Pioneer	PI 33P66	NONE	44.0	1.3	227.5
Dekalb	DKC 69-71	YGCB/RR	47.5	0.0	226.6
Dekalb	NB 6703	NONE	45.0	2.3	226.0
Dekalb	DKC 63-52	YGCB/RR	40.7	6.7	225.7
FFR	FFR 736Bt	YGCB	42.3	0.5	225.0
Terral	TV 26BR10n	YGCB/RR	41.3	0.0	224.6
Dekalb	DKC 61-45	YGCB/RR	40.0	0.0	223.8
Dekalb	DKC 60-19	YGCB/RR	35.7	0.0	223.2
Dekalb	NB 6503	NONE	41.7	0.0	222.8
Dekalb	NA 6904	NONE	42.5	0.5	222.3
Dekalb	NB 6602EZA1	YGCB	37.3	1.3	221.7
Terral	TV 2140nRR	RR	50.5	4.3	220.9
Pioneer	PI 31B13	YGCB	51.0	8.0	219.1
Terral	TV 2130	NONE	51.0	0.0	218.8
Dekalb	DKC 69-72	RR	46.0	1.0	217.9
Dekalb	NB 6502	NONE	44.5	5.0	217.5
Garst	8225YG1/RR	YGCB/RR	41.3	1.8	217.3
Terral	TVX26B34	YGCB	39.8	0.5	217.3
Terral	TV 2160 Bt	YGCB	44.8	0.0	217.0
Dekalb	NB 6106	NONE	40.3	1.0	216.7
Dekalb	DKC 64-11	YGCB/RR	44.5	0.5	216.7
Pioneer	PI 31G66	NONE	49.3	5.0	216.4
Pioneer	PI 31G98	NONE	54.0	0.0	215.9
Garst	8288	NONE	43.7	0.0	215.3
Terral	TV25B30	YGCB	48.3	0.0	214.8
DynaGro	57P35	NONE	41.5	0.0	213.7
FFR	FFR 900Bt	YGCB	43.0	0.5	210.8
Dekalb	NA 6606EZA3	YGCB	45.3	1.8	210.6
Dekalb	DKC 63-81	YGCB/RR	40.3	0.5	210.6
Garst	8204RR	RR	44.3	0.0	209.4
Dekalb	DKC 64-10	RR	41.0	0.7	209.2
Dekalb	NA 6306	NONE	39.0	1.3	209.0
Pioneer	PI 32D99	NONE	46.7	3.3	208.2
Garst	8213RR	RR	47.8	0.0	207.7
Pioneer	PI 32R25	NONE	52.5	7.5	206.5
Garst	8270RR	RR	46.0	0.0	206.3
Pioneer	PI 34B24	YGCB	38.7	0.7	205.4
Terral	TV 24R10	RR	47.3	1.7	204.5
Dekalb	NB 6104	NONE	30.7	0.0	203.6
Terral	TVX 23R40	RR	47.0	1.0	186.9
LSD (α=0.05)			4.0	NS	18.3