

MARKET DEVELOPMENT FOR NO-TILLAGE CORN HYBRIDS

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ABSTRACT: A corn variety trial was established to evaluate yield differences in a no-tillage environment. This trial will give corn producers added knowledge in their corn variety selections. There were 13 corn varieties planted on a Henry silt loam. Average yield for the trial was 121 bu/ac. The highest yields recorded were at least 140 bu/ac with Pioneer PI 31B13 and Dekalb DKC64-10RR, which are both bio-engineered hybrids. The lowest yield was 98 bu/ac with the conventional hybrid Dekalb DKC66-50.

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MATERIALS AND METHODS: A corn variety trial was established on a Henry silt loam (coarse-silty, mixed, thermic Typic Fragiaqualfs) to determine yield potential in a no-tillage environment. Fertilizer and lime were applied in the spring according to soil test recommendations. A preplant burndown application of 1 lb ai/ac glyphosate plus 0.5 lb ai/ac 2,4-D amine was applied on April 10. Plot size was 15 x 300 ft. Thirteen corn varieties were planted in 30 in rows and a T-band treatment of 1.23 lb ai/ac chlorpyrifos was applied on April 19. A preemergence application of 1.8 lb ai/ac atrazine plus 1.0 lb ai/ac metolachlor was applied after planting. A side-dress application of 150 lb N/ac (32%) was applied (6 in from row and 2 in deep) at the 6 to 8 leaf stages. The four center rows of each plot were harvest on September 10. Corn grain from each plot was weighed and seed moisture was determined using a MT3 Farmex grain moisture tester. Yield was adjusted to 15% moisture.

Based on information obtained from Pioneer HI-bred International and Monsanto Company these 13 varieties have the following traits: Asgrow 897 is a conventional hybrid that may be best adapted for the southern region of the U.S. Dekalb DKC66-50 is a conventional hybrid with good stalk and root strength. It is adapted to a wide variety of soil types, crop rotations, and reduced tillage systems. Dekalb DKC64-10RR is a Roundup Ready¹ variety that is resistant to Roundup¹ herbicide. Pioneer PI 3223 is a conventional hybrid with a good performance record. Dekalb DK687 is a good conventional hybrid where southern virus complex is a problem. DKC68-70 is a bio-engineered hybrid developed from the conventional DK687 isoline and contains the YieldGard¹ gene that gives resistance to some species of the corn borer, corn earworm, and fall armyworm. It is also good where southern virus complex is a problem. Dekalb DK697 is a conventional hybrid with disease resistance to gray leaf spot, northern leaf blight, and southern leaf blight. Dekalb DKC69-70 is a bio-engineered hybrid developed from the conventional DK697 isoline and contains the YieldGard¹ gene that gives resistance to some species of the corn borer, corn earworm, and fall armyworm. It also has excellent stalk and root quality. Asgrow RX799BT contains the YieldGard¹ gene that gives resistance to some species of the corn borer, corn earworm, and fall armyworm. Asgrow RX828YG contains the YieldGard¹ gene that gives resistance to some species of the corn borer, corn earworm, and fall armyworm and is adapted to a wide variety of soil types, crop rotations, and reduced tillage system. Pioneer PI 31B13 contains the YieldGard¹ gene that gives resistance to some species of the corn borer, corn earworm, and fall armyworm. Asgrow RX738RR is a Roundup Ready¹ variety that is resistant to Roundup¹ herbicide and good in a continuous corn rotation. Pioneer PI 32R25 offers common rust resistance and exceptional drought tolerance.

¹Registered trademark of Monsanto Company.

RESULTS AND DISCUSSION: Thirteen corn varieties were established to determine grain yield differences in a no-tillage environment. Average yield for the trial was 121 bu/ac. The highest yields were at least 140 bu/ac with Pioneer PI 31B13 and Dekalb DKC64-10RR (Table 1). Pioneer PI3223, Asgrow RX799BT, and Pioneer 32R25 yielded 127, 127, and 124 bu/ac, respectively. All varieties yielded more than 100 bu/ac except Dekalb DKC66, which is a conventional hybrid.

Table 1. Market development no-tillage corn hybrid trial, Pontotoc Ridge-Flatwoods Experiment Station, 2001.

Brand	Hybrid	Trait	Yield Bu/ac
Pioneer	PI 31B13	YG	144
Dekalb	DKC64-10RR	RR	140
Pioneer	PI 3223	None	127
Asgrow	RX799BT	YG	127
Pioneer	32R25	None	124
Asgrow	RX828YG	YG	119
Dekalb	DK697	None	114
Dekalb	DK687	None	111
Dekalb	DKC68-70	YG	110
Dekalb	DKC69-70	YG	109
Asgrow	RX897	None	104
Asgrow	RX738RR	RR	102
Dekalb	DKC66-50	None	98

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