

## WEED CONTROL IN CLEARFIELD® CORN HYBRID

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**ABSTRACT:** This study evaluated weed control in Clearfield® corn. The growing season was very favorable for herbicide weed control and yield. Broadleaf weed species present were: eclipta (*Eclipta prostrata*), spotted spurge (*Euphorbia maculata*) and pitted morningglory (*Ipomoea lacunosa*). Grass weed species present were: red sprangletop (*Leptochloa filiformis*), large crabgrass (*Digitaria sanguinalis*) and goosegrass (*Eluesine indica*). Weed infestation levels were low during the early growing season and no treatments caused crop injury. All herbicide treatments provided excellent ( $\geq 97\%$ ) season long grass and broadleaf weed control, and were higher than the check (no herbicide) treatment. Yields ranged from 146 to 163 bu/ac with no significant differences among all treatments including the check. These results indicated weed infestations were insufficient to reduce corn yield.

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**KEYWORDS:** Clearfield, corn, weed control

**MATERIALS AND METHODS:** A field study was conducted on a Leeper silty clay loam soil near Verona, Mississippi, during the 2002 growing season to evaluate herbicide weed control in Clearfield® corn. The study was a randomized complete block design with 4 replications. Plot size was 4 rows (30-inch) by 40 ft.

Fertilizers P and K were applied based on soil test recommendations indicating high levels of P with a medium level of K. Therefore, 250 lb/ac of potash (K<sub>2</sub>O) was broadcast on the soil surface on 9/25/01. Land preparation consisted of a fall paratilling (12/08/01) followed by bed-roller (12/08/01), and rebed-roller 3/05/02.

Clearfield® corn hybrid Pioneer 34B28 was planted on 4/15/02 with Lorsban (chlorpyrifos) 15G at 1.3 lb ai/ac applied in-furrow. A burndown application of Roundup (glyphosate) + Clarity (banvel) 2pt/ac + 6 oz/ac was applied after planting to the entire study 4/15/02. Nitrogen fertilizer solution (32% N as UAN) at 175 lb N/ac was applied sidedress 6 inches from the row and 2 inches deep with a coulter-knife system on 5/14/02. A foliar application of Intrepid (methoxyfenozide) at 0.0625 lb ai/ac was applied on 6/24/02 for southwestern corn borer (*Diatraea grandiosella*) control.

Preemergence (PRE) treatments were applied 4/15/02 and early postemergence (EPOT) treatments were applied at 10 to 12 inch tall corn on 5/15/02 (Table 1). Mid-season postemergence over-the-top of corn (MPOT) treatments and mid-season post-directed (MPD) broadcast applications were made on 5/23/02 to 20 to 30 inch tall corn (Table 1). All PRE and MPOT treatments were applied at 15 gpa with 8002VS nozzles. MPD broadcast applications

were made at 20 gpa with a broadcast slide shield spray-rig equipped with 8002VS nozzles (directed to the base of the plant) and 8004VS nozzles (directed between the row). Plots were rated for broadleaf and grass weed control on 6/11/02 and 8/26/02. A rating scale of 0 equaled no weed control up to 100% equaled complete weed control or kill was used.

The center 2 rows in each plot were harvested with a plot combine. Corn was weighed, and grain moisture and test weight were determined using a Dickey John® 2000 grain analysis computer. Grain weights were converted to bu/ac at 15% moisture. Data were subjected to analysis of variance and treatment means were separated using Fisher's Protected LSD at the 5% significance level.

**RESULTS AND DISCUSSION:** Rainfall during the growing season was above normal in May and July which contributed to excellent herbicide weed control and corn yield. Broadleaf weed species present were: eclipta, spotted spurge and pitted morningglory. Grass weed species present were: red sprangletop, large crabgrass and goosegrass.

Early and late season weed infestations were low no crop injury was apparent in any treatments. All treatments, except the check, provided excellent (92 to 99%) early (06/11/02) and late (08/26/02) broadleaf and grass weed control (Table 1). Yields ranged from 146 to 163 bu/ac with no differences among herbicide treatments and the check. These results indicate that weed infestations were apparently insufficient to reduce corn yield.

**COOPERATORS:** None

**PUBLICATIONS:** None

**Table 1.** Clearfield® corn herbicide weed control and yield response on a Leeper silty clay loam soil in 2002, Verona, MS.

Herbicide Treatment	Rate/ac	Appl time	6/11/02		8/26/02		Yield bu/ac
			% control Brl <sup>1</sup>	% control GR <sup>2</sup>	% control Brl <sup>1</sup>	% control GR <sup>2</sup>	
1. Untreated check			0	0	0	0	161.3
2. Atrazine	2.0 pt	PRE					
Lightning	1.28 oz	EPOT					
Atrazine	2.0 pt	EPOT					
Crop oil	1% v/v	EPOT					
Liquid N (32%)	3.0 pt	EPOT	99	99	97	98	153.0
3. Atrazine	2.0 pt	PRE					
Lightning	1.28 oz	EPOT					
Distinct	2.0 oz	EPOT					
Crop oil	1% v/v	EPOT					
Liquid N (32%)	3.0 pt	EPOT	99	99	98	99	145.7
4. Atrazine	2.0 pt	PRE					
Lightning	1.28 oz	EPOT					
Distinct	4.0 oz	EPOT					
Crop oil	1% v/v	EPOT					
Liquid N (32%)	3.0 pt	EPOT	99	99	99	98	151.2
5. Atrazine	2.0 pt	PRE					
Lightning	1.28 oz	EPOT					
Distinct	4.0 oz	EPOT					
Surfactant	0.25%v/v	EPOT	99	99	99	99	152.6
6. Atrazine	2.0 pt	PRE					
Lightning	1.28 oz	MPOT					
Distinct	4.0 oz	MPOT					
Crop oil	1% v/v	MPOT					
Liquid N (32%)	3.0 pt	MPOT	99	97	98	98	148.7
7. Atrazine	2.0 pt	PRE					
Lightning	1.28 oz	MPOT					
Distinct	4.0 oz	MPOT					
Surfactant	0.25%v/v	MPOT	92	94	97	98	157.7
8. Bicep II Magnum	2.0 pt	PRE					
Basic Gold	14.0 oz	EPOT					
Surfactant	0.25%v/v	EPOT					
Liquid N (32%)	3.0 pt	EPOT	99	99	99	99	151.2
9. Atrazine	4.0 pt	EPOT					
Accent	0.67 oz	EPOT					
Crop Oil	1% v/v	EPOT	97	99	98	97	163.2
10. Atrazine	2.0 pt	PRE					
Basis Gold	14.0 oz	MPOT					
Surfactant	0.25%v/v	MPOT	99	99	98	99	143.4
11. Atrazine	4.0 pt	PRE					
Evik	2 lb	MPD					
Surfactant	0.5% v/v	MPD	99	99	98	98	153.1
LSD (.05)			4	6	3	3	NS
% CV			3	5	2	3	9

<sup>1</sup> Brl = Broadleaf weeds present were: eclipta, spotted spurge, and pitted morningglory. Infestation levels were low.

<sup>2</sup> Gr = Annual grasses present were: red sprangletop, large crabgrass, and goosegrass. Infestation levels were low.