

Rate Comparison of Distinct and Clarity with Postemergence Grass Herbicides.

00-6C

OBJECTIVE: Determine crop safety and weed control for various rates of Distinct and Clarity tank-mixed with Basis Gold, Accent, and experimental AE F130360.

SUMMARY: Minimal crop injury (6% or less) was present at 7 days after treatment (DAT). The injury dissipated rapidly with no injury observed at 28 DAT. All treatments provided excellent control of giant foxtail, velvetleaf, common ragweed, and common cocklebur. Control of ALS-resistant common waterhemp was acceptable if a non-ALS herbicide was tank-mixed with Accent, AE F130360-01, or AE F130360-02. Control of smooth crabgrass was reduced with both AE F130360-01 and AE F130360-02 with the addition of Distinct, possibly indicating an antagonism.

Corn yield ranged from 53 bu/A in nontreated plots to 188 bu/A. Reduced corn yield was observed in plots treated with AE F130360-01, AE F130360-02, or Accent applied without Distinct or Clarity for broadleaf weed control.

HERBICIDES

AATREX 90 WG
ACCENT 75 WG
AE F130360 01 70 WG
AE F130360 02 62 WG
BASIS GOLD 90 WG
CLARITY 4 EC
DISTINCT 70 WG

WEEDS

COCKLEBUR, COMMON
CRABGRASS, SMOOTH
FOXTAIL, GIANT
RAGWEED, COMMON
VELVETLEAF
WATERHEMP, COMMON

CROP

CORN, FIELD

Bryan Young

PLANT, SOIL AND GENERAL AGRICULTURE DEPARTMENT

SOUTHERN ILLINOIS UNIVERSITY

Rate Comparison of Distinct and Clarity with Postemergence Grass Herbicides.

Project Code: 00-6C Location: Belleville Research Center

Investigator: Bryan Young, Assistant Professor, Southern Illinois University

Weed Code	Common Name	Scientific Name
1. SETFA	FOXTAIL, GIANT	SETARIA FABERI HERRM.
2. AMATA	WATERHEMP, COMMON	AMARANTHUS RUDIS SAUER
3. AMBEL	RAGWEED, COMMON	AMBROSIA ARTEMISIIFOLIA L.
4. ABUTH	VELVETLEAF	ABUTILON THEOPHRASTI MEDIK.
5. XANST	COCKLEBUR, COMMON	XANTHIUM STRUMARIUM L. SSP. STRUMARIUM
6. DIGIS	CRABGRASS, SMOOTH	DIGITARIA ISCHAEMUM (SCHREB. EX SCHWEIG)

Crop 1:	ZEAMX CORN, FIELD	Variety:	P33G28 LL
Planting Method:	SEEDED	Planting Date:	May-3-00
Rate:	28000 S/A	Depth:	1.5 IN
Row Spacing:	30 IN		

Plot Width, Unit:	10 FT	Plot Length, Unit:	30 FT	Reps:	3
Tillage Type:	REDUCED-TILL	Study Design:	RCB		
Previous Crop, Year:	GLXMA, 1999	Fertilizer applied:	N 150 LB/A,	P ₂ O ₅ 50 LB/A,	K ₂ O 150 LB/A

Soil Name:	STOY	% OM: 2.2	pH: 6.9	CEC: 8
Texture:	SILT LOAM	P ₂ : 73 LB/A,	K: 391 LB/A	

APPLICATION DESCRIPTION

A
Application Date: May-24-00
Time of Day: 9:30
Application Method: SPRAY
Application Timing: 2-4"W
Applic. Placement: BROFOL
Air Temp., Unit: 75 F
% Relative Humidity: 80
Wind Velocity, Unit: 2-4 MPH
Soil Moisture: NORMAL

CROP STAGE AT EACH APPLICATION

A
Crop 1 Code, Stage: ZEAMX V3
Height, Unit: 7-9 IN

WEED STAGE AT EACH APPLICATION

A
Weed 1 Code: SETFA
Stage(leaves): 2-4
Height(inches): 2-4
Density: HIGH

Weed 2 Code: AMATA
Stage(leaves): 2-5
Height(inches): 1-4
Density: HIGH

Weed 3 Code: AMBEL
Stage(leaves): 2-4
Height(inches): 2-4
Density: HIGH

Weed 4 Code: ABUTH
Stage(leaves): COTL-4
Height(inches): 1-4
Density: HIGH

Weed 5 Code: XANST
Stage(leaves): COTL-5
Height(inches): 2-5
Density: HIGH

APPLICATION EQUIPMENT

A
Appl. Equipment: CO, SPRAY
Operating Pressure: 40 PSI
Nozzle Type: FLAT FAN
Nozzle Size: 8002
Boom Length, Unit: 7.33 FT
Spray Volume, Unit: 20 GPA

NOTES:

Harvested Sep-30-00, (2) 30 inch rows by 27 ft.

TABLE. RATE COMPARISON OF DISTINCT AND CLARITY WITH POSTEMERGENCE GRASS HERBICIDES. PROJECT CODE:00-6C

TREATMENT	FORM.	RATE	UNIT	PROD RATE	APPL TIME	APPL CODE	YIELD	ZEAMX INJURY			CONTROL, DAYS AFTER 2-4"W																				
								DA 2-4"W			SETFA			ABUTH			AMATA			AMBEL			XANST			DIGIS					
								7	14	28	14	28	56	14	28	56	14	28	56	14	28	56	14	28	56	28	56				
BU/A	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%											
1 NONTREATED							53	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0								
2 BASIS GOLD	90 WG	0.788	LB A/A	14.0	OZ/A	2-4"W	A	176	0	0	0	95	99	99	97	97	99	98	99	99	99	99	99	96	96	94	83	93			
2 DISTINCT	70 WG	0.0438	LB A/A	1.0	OZ/A	2-4"W	A																								
2 PRIME OIL COC	100 LIQ	1.0	% V/V	1.0	%V/V	2-4"W	A																								
2 AMS	100 DRY	2.0	LB/A	2.0	LB/A	2-4"W	A																								
3 BASIS GOLD	90 WG	0.788	LB A/A	14.0	OZ/A	2-4"W	A	169	2	2	0	97	99	99	97	98	99	99	99	99	99	99	99	99	99	96	95	89	93	93	
3 DISTINCT	70 WG	0.0875	LB A/A	2.0	OZ/A	2-4"W	A																								
3 PRIME OIL COC	100 LIQ	1.0	% V/V	1.0	%V/V	2-4"W	A																								
3 AMS	100 DRY	2.0	LB/A	2.0	LB/A	2-4"W	A																								
4 BASIS GOLD	90 WG	0.788	LB A/A	14.0	OZ/A	2-4"W	A	173	2	2	0	95	99	99	97	98	99	95	99	99	99	99	99	99	99	95	96	90	83	83	
4 DISTINCT	70 WG	0.175	LB A/A	4.0	OZ/A	2-4"W	A																								
4 PRIME OIL COC	100 LIQ	1.0	% V/V	1.0	%V/V	2-4"W	A																								
4 AMS	100 DRY	2.0	LB/A	2.0	LB/A	2-4"W	A																								
5 BASIS GOLD	90 WG	0.788	LB A/A	14.0	OZ/A	2-4"W	A	167	1	0	0	92	99	99	94	98	99	98	99	98	99	99	99	99	99	93	98	95	66	70	
5 DISTINCT	70 WG	0.0438	LB A/A	1.0	OZ/A	2-4"W	A																								
5 ACTIVATOR 90	100 LIQ	0.25	% V/V	0.25	%V/V	2-4"W	A																								
5 AMS	100 DRY	2.0	LB/A	2.0	LB/A	2-4"W	A																								
6 BASIS GOLD	90 WG	0.788	LB A/A	14.0	OZ/A	2-4"W	A	183	0	0	0	93	99	99	93	98	98	97	98	99	99	99	99	99	99	96	96	96	92	90	
6 DISTINCT	70 WG	0.0875	LB A/A	2.0	OZ/A	2-4"W	A																								
6 ACTIVATOR 90	100 LIQ	0.25	% V/V	0.25	%V/V	2-4"W	A																								
6 AMS	100 DRY	2.0	LB/A	2.0	LB/A	2-4"W	A																								
7 BASIS GOLD	90 WG	0.788	LB A/A	14.0	OZ/A	2-4"W	A	171	3	1	0	95	99	99	98	98	99	99	99	98	99	99	99	99	99	96	96	94	83	96	
7 DISTINCT	70 WG	0.175	LB A/A	4.0	OZ/A	2-4"W	A																								
7 ACTIVATOR 90	100 LIQ	0.25	% V/V	0.25	%V/V	2-4"W	A																								
7 AMS	100 DRY	2.0	LB/A	2.0	LB/A	2-4"W	A																								
8 BASIS GOLD	90 WG	0.788	LB A/A	14.0	OZ/A	2-4"W	A	188	0	0	0	97	99	99	98	98	99	98	94	96	96	99	99	99	99	99	91	94	94	81	96
8 CLARITY	4 EC	0.125	LB A/A	4.0	OZ/A	2-4"W	A																								
8 PRIME OIL COC	100 LIQ	1.0	% V/V	1.0	%V/V	2-4"W	A																								
8 AMS	100 DRY	2.0	LB/A	2.0	LB/A	2-4"W	A																								
9 ACCENT	75 WG	0.031	LB A/A	0.66	OZ/A	2-4"W	A	179	0	0	0	95	99	99	83	92	96	85	88	96	95	98	99	99	99	67	88	88	90	81	
9 DISTINCT	70 WG	0.0875	LB A/A	2.0	OZ/A	2-4"W	A																								
9 PRIME OIL COC	100 LIQ	1.0	% V/V	1.0	%V/V	2-4"W	A																								
9 AMS	100 DRY	2.0	LB/A	2.0	LB/A	2-4"W	A																								
10 ACCENT	75 WG	0.031	LB A/A	0.66	OZ/A	2-4"W	A	178	3	0	0	97	99	99	99	97	99	99	99	99	99	99	99	99	99	98	99	96	90	96	
10 DISTINCT	70 WG	0.0875	LB A/A	2.0	OZ/A	2-4"W	A																								
10 AATREX	90 WG	0.9	LB A/A	16.0	OZ/A	2-4"W	A																								
10 PRIME OIL COC	100 LIQ	1.0	% V/V	1.0	%V/V	2-4"W	A																								
10 AMS	100 DRY	2.0	LB/A	2.0	LB/A	2-4"W	A																								
11 ACCENT	75 WG	0.031	LB A/A	0.66	OZ/A	2-4"W	A	174	1	0	0	93	99	99	88	88	99	92	99	98	99	99	99	99	99	95	92	90	63	93	
11 DISTINCT	70 WG	0.175	LB A/A	4.0	OZ/A	2-4"W	A																								
11 PRIME OIL COC	100 LIQ	1.0	% V/V	1.0	%V/V	2-4"W	A																								
11 AMS	100 DRY	2.0	LB/A	2.0	LB/A	2-4"W	A																								

(CONTINUED)

TABLE. RATE COMPARISON OF DISTINCT AND CLARITY WITH POSTEMERGENCE GRASS HERBICIDES. PROJECT CODE:00-6C (CONTINUED)

TREATMENT	FORM.	RATE	UNIT	PROD	RATE	APPL TIME	APPL CODE	YIELD	ZEAMX INJURY			CONTROL, DAYS AFTER 2-4"W																
									DA 2-4"W			SETFA			ABUTH			AMATA			AMBEL			XANST			DIGIS	
									7	14	28	14	28	56	14	28	56	14	28	56	14	28	56	14	28	56	28	56
BU/A	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%								
12 ACCENT	75 WG	0.031	LB A/A	0.66	OZ/A	2-4"W	A	183	0	0	0	93	99	99	83	85	97	82	85	93	98	98	99	90	93	91	93	95
12 DISTINCT	70 WG	0.0875	LB A/A	2.0	OZ/A	2-4"W	A																					
12 ACTIVATOR 90	100 LIQ	0.25	% V/V	0.25	%V/V	2-4"W	A																					
12 AMS	100 DRY	2.0	LB/A	2.0	LB/A	2-4"W	A																					
13 ACCENT	75 WG	0.031	LB A/A	0.66	OZ/A	2-4"W	A	173	3	0	0	92	99	99	96	98	99	99	99	99	99	99	99	96	96	98	66	91
13 DISTINCT	70 WG	0.0875	LB A/A	2.0	OZ/A	2-4"W	A																					
13 AATREX	90 WG	0.9	LB A/A	16.0	OZ/A	2-4"W	A																					
13 ACTIVATOR 90	100 LIQ	0.25	% V/V	0.25	%V/V	2-4"W	A																					
13 AMS	100 DRY	2.0	LB/A	2.0	LB/A	2-4"W	A																					
14 ACCENT	75 WG	0.031	LB A/A	0.66	OZ/A	2-4"W	A	170	3	0	0	95	99	99	82	93	98	83	94	98	98	98	99	92	96	94	92	90
14 DISTINCT	70 WG	0.175	LB A/A	4.0	OZ/A	2-4"W	A																					
14 ACTIVATOR 90	100 LIQ	0.25	% V/V	0.25	%V/V	2-4"W	A																					
14 AMS	100 DRY	2.0	LB/A	2.0	LB/A	2-4"W	A																					
15 ACCENT	75 WG	0.031	LB A/A	0.66	OZ/A	2-4"W	A	163	6	2	0	95	99	99	75	87	93	73	73	95	93	99	99	93	96	93	85	93
15 CLARITY	4 EC	0.25	LB A/A	8.0	OZ/A	2-4"W	A																					
15 ACTIVATOR 90	100 LIQ	0.25	% V/V	0.25	%V/V	2-4"W	A																					
15 AMS	100 DRY	2.0	LB/A	2.0	LB/A	2-4"W	A																					
16 ACCENT	75 WG	0.031	LB A/A	0.66	OZ/A	2-4"W	A	139	0	0	0	95	99		65	73		33	0	0	47	0		75	0		99	
16 PRIME OIL COC	100 LIQ	1.0	% V/V	1.0	%V/V	2-4"W	A																					
16 28% UAN	100 LIQ	2.5	% V/V	2.5	%V/V	2-4"W	A																					
17 AE F130360 01	70 WG	0.05469	LB A/A	1.25	OZ/A	2-4"W	A	136	2	0	0	96	98		94	69		0	0	0	88	69		96	69		96	
17 PRIME OIL COC	100 LIQ	1.0	% V/V	1.0	%V/V	2-4"W	A																					
17 28% UAN	100 LIQ	2.5	% V/V	2.5	%V/V	2-4"W	A																					
18 AE F130360 02	62 WG	0.04844	LB A/A	1.25	OZ/A	2-4"W	A	148	2	0	0	93	96		93	45		0	0	0	98	40		96	36		67	
18 PRIME OIL COC	100 LIQ	1.0	% V/V	1.0	%V/V	2-4"W	A																					
18 28% UAN	100 LIQ	2.5	% V/V	2.5	%V/V	2-4"W	A																					
19 AE F130360 01	70 WG	0.05469	LB A/A	1.25	OZ/A	2-4"W	A	185	3	1	0	88	99	99	87	90	94	82	90	98	93	98	99	87	85	95	38	90
19 DISTINCT	70 WG	0.0875	LB A/A	2.0	OZ/A	2-4"W	A																					
19 PRIME OIL COC	100 LIQ	1.0	% V/V	1.0	%V/V	2-4"W	A																					
19 28% UAN	100 LIQ	2.5	% V/V	2.5	%V/V	2-4"W	A																					
20 AE F130360 01	70 WG	0.05469	LB A/A	1.25	OZ/A	2-4"W	A	172	4	2	0	88	99	99	92	90	94	93	93	96	93	98	99	93	93	93	0	65
20 DISTINCT	70 WG	0.175	LB A/A	4.0	OZ/A	2-4"W	A																					
20 PRIME OIL COC	100 LIQ	1.0	% V/V	1.0	%V/V	2-4"W	A																					
20 28% UAN	100 LIQ	2.5	% V/V	2.5	%V/V	2-4"W	A																					
21 AE F130360 01	70 WG	0.05469	LB A/A	1.25	OZ/A	2-4"W	A	156	4	3	0	88	99	99	88	92	96	92	98	98	93	99	98	89	91	90	30	70
21 DISTINCT	70 WG	0.263	LB A/A	6.0	OZ/A	2-4"W	A																					
21 PRIME OIL COC	100 LIQ	1.0	% V/V	1.0	%V/V	2-4"W	A																					
21 28% UAN	100 LIQ	2.5	% V/V	2.5	%V/V	2-4"W	A																					

(CONTINUED)

TABLE. RATE COMPARISON OF DISTINCT AND CLARITY WITH POSTEMERGENCE GRASS HERBICIDES. PROJECT CODE:00-6C (CONTINUED)

TREATMENT	FORM.	RATE	UNIT	PROD	RATE	APPL TIME	APPL CODE	YIELD	CONTROL, DAYS AFTER 2-4"W																							
									ZEAMX INJURY DA 2-4"W			SETFA			ABUTH			AMATA			AMBEL			XANST			DIGIS					
									7	14	28	14	28	56	14	28	56	14	28	56	14	28	56	14	28	56	28	56				
BU/A	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%												
22 AE F130360 02	62 WG	0.04844	LB A/A	1.25	OZ/A	2-4"W	A	161	4	0	0	87	99	99	91	92	99	83	80	94	98	98	99	91	95	91	3	40				
22 DISTINCT	70 WG	0.0875	LB A/A	2.0	OZ/A	2-4"W	A																									
22 PRIME OIL COC	100 LIQ	1.0	% V/V	1.0	%V/V	2-4"W	A																									
22 28% UAN	100 LIQ	2.5	% V/V	2.5	%V/V	2-4"W	A																									
23 AE F130360 02	62 WG	0.04844	LB A/A	1.25	OZ/A	2-4"W	A	170	3	0	0	95	99	99	88	93	99	83	96	98	99	99	99	93	95	92	82	88				
23 DISTINCT	70 WG	0.175	LB A/A	4.0	OZ/A	2-4"W	A																									
23 PRIME OIL COC	100 LIQ	1.0	% V/V	1.0	%V/V	2-4"W	A																									
23 28% UAN	100 LIQ	2.5	% V/V	2.5	%V/V	2-4"W	A																									
24 AE F130360 02	62 WG	0.04844	LB A/A	1.25	OZ/A	2-4"W	A	150	6	3	0	88	99	99	92	96	99	88	96	99	99	99	99	96	96	93	63	75				
24 DISTINCT	70 WG	0.263	LB A/A	6.0	OZ/A	2-4"W	A																									
24 PRIME OIL COC	100 LIQ	1.0	% V/V	1.0	%V/V	2-4"W	A																									
24 28% UAN	100 LIQ	2.5	% V/V	2.5	%V/V	2-4"W	A																									
LSD								37	4	2	0	6	1	0	10	23	5	13	6	4	9	24	0.9	16	25	9	45	33				
P								0.01	0.04	0.3	1.0	0.01	0.01	1.0	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01				

1. PROTOCOL: DUPONT TRTS 1-15 (USA-00-111); AVENTIS TRTS 16-24 (360CET).
2. FOR TREATMENTS 16-18, BROADLEAF WEED CONTROL AT 28 DAT REFLECTS EFFECTS OF WATERHEMP COMPETITION DUE TO POOR WATERHEMP CONTROL RATHER THAN THE EFFECT OF THE HERBICIDES. MISSING DATA AT 56 DAT FOR TREATMENTS 16-18 DUE TO HEAVY WATERHEMP COMPETITION IN THOSE PLOTS.
3. RATING DATES:
7 DA 2-4"W, 14 DA 2-4"W, 28 DA 2-4"W, AND 56 DA 2-4"W ON MAY-31-00, JUN-7-00, JUN-21-00, AND JUL-19-00, RESPECTIVELY.