

Adjuvant Combinations with Steadfast and Distinct.

01-21N-W150

OBJECTIVE: Evaluate adjuvant combinations with Distinct and Steadfast for crop response and weed control.

SUMMARY: No corn injury was observed in this study. Giant foxtail control 14 and 28 days after treatment (DAT) was greatest when EX 105 plus AMS was added to Steadfast plus Distinct. Common cocklebur control 14 DAT from Steadfast plus Distinct was similar with all adjuvants except AR 581-1P at 9.5 lb/100 gal, which provided less control than other treatments. However, by 28 DAT, all treatments controlled at least 93% of common cocklebur. Waterhemp control was greatest at both evaluation timings with the combination of PL335 at 20 lb/100 gal plus Steadfast plus Distinct. Overall weed control was highest with the addition of EX 105 plus AMS to Steadfast plus Distinct.

Corn yield ranged from 45 bu/A in nontreated plots to 147 bu/A.

HERBICIDES / ADJUVANTS

DISTINCT 70 WG
 STEADFAST 75 WG
 AMS 100 DRY
 AR 200-TM
 AR 581-1P 100 DRY
 AR-A 100 LIQ
 AR-B 100 DRY
 COC-PL 100 LIQ
 DE 500-TM
 DE-A 100 DRY
 DE-B 100 DRY
 EX 105 100 LIQ
 EXCHANGE 100 LIQ
 PL 746 100 LIQ
 PL335 100 DRY
 PX403 100 LIQ
 SE 581-1P 100 DRY

WEEDS

cocklebur, common
 foxtail, giant
 waterhemp, common

CROP

corn, field

Bryan Young

PLANT, SOIL AND GENERAL AGRICULTURE DEPARTMENT

SOUTHERN ILLINOIS UNIVERSITY

Adjuvant Combinations with Steadfast and Distinct.

Project Code: 01-21N-W150 Location: Belleville Research Center

Investigator: Bryan Young, Assistant Professor, Southern Illinois University

City State Zip Country: Belleville IL 62221 USA
 Trial Status: Final Initiation Date: 5-10-01

Objective:

Evaluate adjuvant combinations with Distinct and Steadfast for
 crop response and weed control.

Weed Code	Common Name	Scientific Name
1. SETFA	foxtail, giant	Setaria faberi Herrm.
2. XANST	cocklebur, common	Xanthium strumarium L.
3. AMATA	waterhemp, common	Amaranthus rudis Sauer

Crop 1:	ZEAMX	corn, field	Variety:	P33G28 LL
Planting Method:	Seeded		Planting Date:	5-10-01
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:	Randomized complete block			
Previous Crop, Year:	GLXMA, 2000						
Field Prep./Maintenance:	N 150 LB/A, P205 0 LB/A, K20 150 LB/A						

Soil Name:	Ebbert	% OM:	1.4	pH:	5.7	CEC:	14	
Texture:	Silt loam	Fert. Level:	P1: 97 LB/A, K: 291 LB/A					

APPLICATION DESCRIPTION

A

Application Date:	6-11-01
Time of Day:	16:00
Application Method:	Spray
Application Timing:	4"GRASS
Applic. Placement:	BROFOL
Air Temp., Unit:	92 F
% Relative Humidity:	48
Wind Velocity, Unit:	5 MPH
Soil Moisture:	NORMAL
% Cloud Cover:	30

CROP STAGE AT EACH APPLICATION

A

Crop 1 Code, Stage:	ZEAMX V4-V6
Height, Unit:	11-17 IN

WEED STAGE AT EACH APPLICATION

A

Weed 1 Code:	SETFA
Stage(leaves):	4-6
Height(inches):	4-6
Density:	Medium
Weed 2 Code:	XANST
Stage(leaves):	5-7
Height(inches):	4-8
Density:	High
Weed 3 Code:	AMATA
Stage(leaves):	4-6
Height(inches):	2-5
Density:	High

APPLICATION EQUIPMENT

A

Appl. Equipment: CO2 sprayer
Operating Pressure: 40 PSI
Nozzle Type: Flat fan
Nozzle Size: 8002
Boom Length, Unit: 7.5 FT
Spray Volume, Unit: 20 GPA

NOTES: HARVESTED 10-10-01, 2 ROWS X 22 FT.

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Weed Code	ZEAMX	ZEAMX	ZEAMX	SETFA	SETFA	XANST	XANST	AMATA	AMATA
Crop Code	Yield	Injury	Injury	Control	Control	Control	Control	Control	Control
Rating Data Type	bu/A	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent
Rating Unit	10-10-01	6-25-01	7-9-01	6-25-01	7-9-01	6-25-01	7-9-01	6-25-01	7-9-01
Rating Date	14 DA-A	28 DA-A	28 DA-A	14 DA-A	28 DA-A	14 DA-A	28 DA-A	14 DA-A	28 DA-A
Trt-Eval Interval									

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Prod Rate	Prod Unit	Grow Stg	Appl Code	Yield	Injury	Injury	Control	Control	Control	Control	Control	Control
1	NONTREATED									45	0	0	0	0	0	0	0	0
2	DISTINCT	70	WG	0.088	LB A/A	2	OZ/A	4"GRASS	A	147	0	0	75	75	78	95	62	68
2	STEADFAST	75	WG	0.0176	LB A/A	0.375	OZ/A	4"GRASS	A									
2	COC-PL	100	LIQ	1.0	% V/V	1	%V/V	4"GRASS	A									
2	AMS	100	DRY	2.0	LB A/A	2	LB/A	4"GRASS	A									
3	DISTINCT	70	WG	0.088	LB A/A	2	OZ/A	4"GRASS	A	137	0	0	78	73	78	95	55	65
3	STEADFAST	75	WG	0.0176	LB A/A	0.375	OZ/A	4"GRASS	A									
3	PX403	100	LIQ	0.375	% V/V	0.375	%V/V	4"GRASS	A									
3	AMS	100	DRY	2.0	LB A/A	2	LB/A	4"GRASS	A									
4	DISTINCT	70	WG	0.088	LB A/A	2	OZ/A	4"GRASS	A	140	0	0	78	77	78	99	67	73
4	STEADFAST	75	WG	0.0176	LB A/A	0.375	OZ/A	4"GRASS	A									
4	EXCHANGE	100	LIQ	0.375	% V/V	0.375	%V/V	4"GRASS	A									
4	AMS	100	DRY	2.0	LB A/A	2	LB/A	4"GRASS	A									
5	DISTINCT	70	WG	0.088	LB A/A	2	OZ/A	4"GRASS	A	135	0	0	77	78	82	96	58	60
5	STEADFAST	75	WG	0.0176	LB A/A	0.375	OZ/A	4"GRASS	A									
5	PL 746	100	LIQ	0.25	% V/V	0.25	%V/V	4"GRASS	A									
5	AMS	100	DRY	2.0	LB A/A	2	LB/A	4"GRASS	A									
6	DISTINCT	70	WG	0.088	LB A/A	2	OZ/A	4"GRASS	A	119	0	0	78	77	80	94	62	63
6	STEADFAST	75	WG	0.0176	LB A/A	0.375	OZ/A	4"GRASS	A									
6	PL335	100	DRY	1.92	% W/W	16	LB/100 GAL	4"GRASS	A									
7	DISTINCT	70	WG	0.088	LB A/A	2	OZ/A	4"GRASS	A	119	0	0	28	25	80	99	68	77
7	PL335	100	DRY	2.4	% W/W	20	LB/100 GAL	4"GRASS	A									
8	DISTINCT	70	WG	0.088	LB A/A	2	OZ/A	4"GRASS	A	136	0	0	83	85	82	99	63	70
8	STEADFAST	75	WG	0.0176	LB A/A	0.375	OZ/A	4"GRASS	A									
8	EX 105	100	LIQ	0.5	% V/V	0.5	%V/V	4"GRASS	A									
8	AMS	100	DRY	2.0	LB A/A	2	LB/A	4"GRASS	A									
9	DISTINCT	70	WG	0.088	LB A/A	2	OZ/A	4"GRASS	A	142	0	0	73	67	70	94	67	67
9	STEADFAST	75	WG	0.0176	LB A/A	0.375	OZ/A	4"GRASS	A									
9	AR 581-1P	100	DRY	1.14	% W/W	9.5	LB/100 GAL	4"GRASS	A									
10	DISTINCT	70	WG	0.088	LB A/A	2	OZ/A	4"GRASS	A	129	0	0	65	67	78	93	62	62
10	STEADFAST	75	WG	0.0176	LB A/A	0.375	OZ/A	4"GRASS	A									
10	SE 581-1P	100	DRY	1.33	LB A/A	1.33	LB/A	4"GRASS	A									
11	DISTINCT	70	WG	0.088	LB A/A	2	OZ/A	4"GRASS	A	131	0	0	77	77	80	99	67	63
11	STEADFAST	75	WG	0.0176	LB A/A	0.375	OZ/A	4"GRASS	A									
11	AR 200-TM							4"GRASS	A									
11	->AR-A	100	LIQ	0.25	% V/V	0.25	%V/V	4"GRASS	A									
11	->AR-B	100	DRY	1.08	% W/W	9	LB/100 GAL	4"GRASS	A									
12	DISTINCT	70	WG	0.088	LB A/A	2	OZ/A	4"GRASS	A	109	0	0	70	72	78	98	53	60
12	STEADFAST	75	WG	0.0176	LB A/A	0.375	OZ/A	4"GRASS	A									
12	DE 500-TM							4"GRASS	A									
12	->DE-A	100	DRY	1.14	% W/W	9.5	LB/100 GAL	4"GRASS	A									
12	->DE-B	100	DRY	0.9	LB A/A	0.9	LB/A	4"GRASS	A									

Weed Code				SETFA	SETFA	XANST	XANST	AMATA	AMATA
Crop Code	ZEAMX	ZEAMX	ZEAMX						
Rating Data Type	Yield	Injury	Injury	Control	Control	Control	Control	Control	Control
Rating Unit	bu/A	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent
Rating Date	10-10-01	6-25-01	7-9-01	6-25-01	7-9-01	6-25-01	7-9-01	6-25-01	7-9-01
Trt-Eval Interval	14 DA-A	28 DA-A	14 DA-A	28 DA-A	14 DA-A	28 DA-A	14 DA-A	28 DA-A	28 DA-A

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Prod Rate	Prod Unit	Grow Stg	Appl Code				
LSD (P=.05)				27.7		0.0	0.0	8.8	16.9	7.7	5.5	12.5	14.3
Replicate F				9.022		0.000	0.000	0.802	0.259	0.303	1.156	6.131	4.631
Replicate Prob(F)				0.0014		1.0000	1.0000	0.4610	0.7741	0.7418	0.3331	0.0077	0.0210
Treatment F				8.336		0.000	0.000	70.184	19.317	76.193	219.302	18.934	16.336
Treatment Prob(F)				0.0001		1.0000	1.0000	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001

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Trial Comments

1. Protocol: Precision Labs (trts 2-7); Miller (trt 8); and Rosens (trts 9-12).
2. DA-A = days after 4"GRASS application.