

## Option Tank-Mix Partners in Corn.

02-50W-MN110

**OBJECTIVE:** Evaluate various tank-mix partners with Option for crop response and weed control.

**SUMMARY:** The purpose of this study was to determine if tank mixing several postemergence corn herbicides with Option increased weed control but not corn injury. Option alone cause 3% corn injury at 7 days after treatment (DAT) with no significant increase in corn injury with the addition of any tank-mix partner except AGH 02002 (7% injury). No corn injury was observed by 14 DAT. Option alone controlled 92 to 95% of giant foxtail and giant ragweed at 14 DAT. In comparison, Steadfast alone controlled 98% of giant foxtail but only 78% of giant ragweed at 14 DAT. Adding a tank-mix partner to Option did not increase or decrease control of giant foxtail and giant ragweed. Tank mixing Callisto with Steadfast increased giant ragweed control to 99%. Option alone provided little to no control of waterhemp. All of the tank-mix partners increased waterhemp control with Option. Callisto was the best tank-mix partner with Option for waterhemp control as even the lowest rate of Callisto (1.5 oz) increased waterhemp control to 98%.

### HERBICIDES

AGH 02002 90 WG  
 CALLISTO 4 SC  
 DEFINE 60 WG  
 DISTINCT 70 WG  
 NORTHSTAR 47.4 WG  
 OPTION 35 WG  
 STEADFAST 75 WG  
 YUKON 67.5 WG

### WEEDS

foxtail, giant  
 ragweed, giant  
 waterhemp, common

### CROP

corn, field

Bryan Young

PLANT, SOIL AND GENERAL AGRICULTURE DEPARTMENT

SOUTHERN ILLINOIS UNIVERSITY

## Option Tank-Mix Partners in Corn.

Project Code: 02-50W-MN110 Location: Belleville Research Center

Investigator: Bryan Young, Assistant Professor, Southern Illinois University

City State Zip Country: Belleville IL 62221 USA  
 Trial Status: Final Updated: 10-31-02

**Objective:**

Evaluate various tank-mix partners with Option for crop response and weed control.

Weed Code	Common Name	Scientific Name
1. SETFA	foxtail, giant	Setaria faberi Herrm.
2. AMBTR	ragweed, giant	Ambrosia trifida L.
3. AMATA	waterhemp, common	Amaranthus rudis Sauer

Crop 1: ZEAMX corn, field Variety: Pioneer 33P69LL  
 Planting Method: Seeded Planting Date: 5-30-02  
 Rate: 28000 S/A Depth: 1.5 IN  
 Row Spacing: 30 IN

Plot Width, Unit: 10 FT Plot Length, Unit: 27 FT Reps: 3  
 Tillage Type: Reduced-Till Study Design: Randomized complete block  
 Previous Crop, Year: GLXMA, 2001

Field Prep./Maintenance: N 150 LB/A, P205 50 LB/A, K20 200 LB/A

Soil Name: Weir % OM: 1.4 pH: 6.5 CEC: 12  
 Texture: Silt loam Fert. Level: P1: 77 LB/A, K: 198 LB/A

**APPLICATION DESCRIPTION**

	A	B
Application Date:	6-6-02	6-17-02
Time of Day:	16:40	15:00
Application Method:	Spray	Spray
Application Timing:	1-2"W	2-4"W
Applic. Placement:	BROFOL	BROFOL
Air Temp., Unit:	77 F	82 F
% Relative Humidity:	46	30
Wind Velocity, Unit:	0-3 MPH	3-5 MPH
Soil Moisture:	NORMAL	NORMAL
% Cloud Cover:	15	5

**CROP STAGE AT EACH APPLICATION**

	A	B
Crop 1 Code, Stage:	ZEAMX V1	ZEAMX V5
Height, Unit:	3 IN	10 IN

**WEED STAGE AT EACH APPLICATION**

	A	B
Weed 1 Code:	SETFA	SETFA
Stage(leaves):	0-2	3-5
Height(inches):	0-1	3-5
Density:	High	High
Weed 2 Code:	AMBTR	AMBTR
Stage(leaves):	0-1	4-6
Height(inches):	0-2	4-8
Density:	Medium	Medium
Weed 3 Code:	AMATA	AMATA
Stage(leaves):	0-2	6-10
Height(inches):	0-1	2-6
Density:	Low	High

## APPLICATION EQUIPMENT

A

Appl. Equipment: CO2 sprayer  
Operating Pressure: 40 PSI  
Nozzle Type: See note  
Nozzle Size: XR 110015  
Boom Length, Unit: 7.5 FT  
Spray Volume, Unit: See note

## NOTES:

Nozzles are flat fan and air induction, see treatment list.  
Harvested Oct-24-02, (2) 30 inch rows by 24 ft.

Option Tank-Mix Partners in Corn.

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Weed Code	ZEAMX			SETFA	SETFA	AMBTR	AMBTR	AMATA	AMATA
Crop Code	Injury	Injury	Injury	Control	Control	Control	Control	Control	Control
Rating Data Type	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent
Rating Unit	6-24-02	7-1-02	7-15-02	7-1-02	7-15-02	7-1-02	7-15-02	7-1-02	7-15-02
Rating Date	7 DA-B	14 DA-B	28 DA-B	14 DA-B	28 DA-B	14 DA-B	28 DA-B	14 DA-B	28 DA-B
Trt-Eval Interval									

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Prod Rate	Prod Unit	Grow Stg	Appl Code									
1	NONTREATED									0	0	0	0	0	0			
2	OPTION	35	WG	0.0328	LB A/A	1.5	OZ/A	2-4"	W B	3	0	0	95	97	95	99	0	0
2	DESTINY MSO	100	LIQ	1.5	PT/A	1.5	PT/A	2-4"	W B									
2	28% UAN	100	LIQ	2.0	QT/A	2	QT/A	2-4"	W B									
3	OPTION	35	WG	0.0328	LB A/A	1.5	OZ/A	2-4"	W B	3	0	0	97	96	98	98	82	79
3	DISTINCT	70	WG	0.0438	LB A/A	1	OZ/A	2-4"	W B									
3	DESTINY MSO	100	LIQ	1.5	PT/A	1.5	PT/A	2-4"	W B									
3	28% UAN	100	LIQ	2.0	QT/A	2	QT/A	2-4"	W B									
4	OPTION	35	WG	0.0328	LB A/A	1.5	OZ/A	2-4"	W B	4	0	0	97	96	98	98	87	80
4	DISTINCT	70	WG	0.0875	LB A/A	2	OZ/A	2-4"	W B									
4	DESTINY MSO	100	LIQ	1.5	PT/A	1.5	PT/A	2-4"	W B									
4	28% UAN	100	LIQ	2.0	QT/A	2	QT/A	2-4"	W B									
5	OPTION	35	WG	0.0328	LB A/A	1.5	OZ/A	2-4"	W B	5	0	0	94	95	98	98	90	89
5	DISTINCT	70	WG	0.175	LB A/A	4	OZ/A	2-4"	W B									
5	DESTINY MSO	100	LIQ	1.5	PT/A	1.5	PT/A	2-4"	W B									
5	28% UAN	100	LIQ	2.0	QT/A	2	QT/A	2-4"	W B									
6	DISTINCT	70	WG	0.175	LB A/A	4	OZ/A	2-4"	W B	0	0	0	67	58	98	96	90	90
6	DESTINY MSO	100	LIQ	1.5	PT/A	1.5	PT/A	2-4"	W B									
6	28% UAN	100	LIQ	2.0	QT/A	2	QT/A	2-4"	W B									
7	OPTION	35	WG	0.0328	LB A/A	1.5	OZ/A	2-4"	W B	3	0	0	96	96	97	94	94	88
7	CALLISTO	4	SC	0.047	LB A/A	1.5	OZ/A	2-4"	W B									
7	DESTINY MSO	100	LIQ	1.5	PT/A	1.5	PT/A	2-4"	W B									
7	28% UAN	100	LIQ	2.0	QT/A	2	QT/A	2-4"	W B									
8	OPTION	35	WG	0.0328	LB A/A	1.5	OZ/A	2-4"	W B	4	0	0	95	96	97	94	98	96
8	CALLISTO	4	SC	0.063	LB A/A	2	OZ/A	2-4"	W B									
8	DESTINY MSO	100	LIQ	1.5	PT/A	1.5	PT/A	2-4"	W B									
8	28% UAN	100	LIQ	2.0	QT/A	2	QT/A	2-4"	W B									
9	OPTION	35	WG	0.0328	LB A/A	1.5	OZ/A	2-4"	W B	2	0	0	92	96	98	95	98	96
9	CALLISTO	4	SC	0.094	LB A/A	3	OZ/A	2-4"	W B									
9	DESTINY MSO	100	LIQ	1.5	PT/A	1.5	PT/A	2-4"	W B									
9	28% UAN	100	LIQ	2.0	QT/A	2	QT/A	2-4"	W B									
10	OPTION	35	WG	0.0328	LB A/A	1.5	OZ/A	2-4"	W B	2	0	0	90	90	99	94	99	96
10	CALLISTO	4	SC	0.094	LB A/A	3	OZ/A	2-4"	W B									
10	PRIME OIL COC	100	LIQ	2.0	PT/A	2	PT/A	2-4"	W B									
10	28% UAN	100	LIQ	2.0	QT/A	2	QT/A	2-4"	W B									

Weed Code									SETFA	SETFA	AMBTR	AMBTR	AMATA	AMATA
Crop Code									ZEAMX	ZEAMX	ZEAMX			
Rating Data Type									Injury	Injury	Injury	Control	Control	Control
Rating Unit									Percent	Percent	Percent	Percent	Percent	Percent
Rating Date									6-24-02	7-1-02	7-15-02	7-1-02	7-15-02	7-1-02
Trt-Eval Interval									7 DA-B	14 DA-B	28 DA-B	14 DA-B	28 DA-B	14 DA-B

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Prod Rate	Prod Unit	Grow Stg	Appl Code									
11	STEADFAST	75	WG	0.0352	LB A/A	0.75	OZ/A	2-4"	W B	0	0	0	96	97	99	98	98	97
11	CALLISTO	4	SC	0.094	LB A/A	3	OZ/A	2-4"	W B									
11	PRIME OIL COC	100	LIQ	2.0	PT/A	2	PT/A	2-4"	W B									
11	28% UAN	100	LIQ	2.0	QT/A	2	QT/A	2-4"	W B									
12	CALLISTO	4	SC	0.094	LB A/A	3	OZ/A	2-4"	W B	0	0	0	10	10	99	99	99	98
12	DESTINY MSO	100	LIQ	1.5	PT/A	1.5	PT/A	2-4"	W B									
12	28% UAN	100	LIQ	2.0	QT/A	2	QT/A	2-4"	W B									
13	OPTION	35	WG	0.0328	LB A/A	1.5	OZ/A	2-4"	W B	3	0	0	92	96	97	99	58	50
13	NORTHSTAR	47.4	WG	0.074	LB A/A	2.5	OZ/A	2-4"	W B									
13	DESTINY MSO	100	LIQ	1.5	PT/A	1.5	PT/A	2-4"	W B									
13	28% UAN	100	LIQ	2.0	QT/A	2	QT/A	2-4"	W B									
14	OPTION	35	WG	0.0328	LB A/A	1.5	OZ/A	2-4"	W B	2	0	0	96	96	98	99	83	67
14	NORTHSTAR	47.4	WG	0.148	LB A/A	5	OZ/A	2-4"	W B									
14	DESTINY MSO	100	LIQ	1.5	PT/A	1.5	PT/A	2-4"	W B									
14	28% UAN	100	LIQ	2.0	QT/A	2	QT/A	2-4"	W B									
15	NORTHSTAR	47.4	WG	0.148	LB A/A	5	OZ/A	2-4"	W B	0	0	0	82	60	99	99	81	70
15	DESTINY MSO	100	LIQ	1.5	PT/A	1.5	PT/A	2-4"	W B									
15	28% UAN	100	LIQ	2.0	QT/A	2	QT/A	2-4"	W B									
16	OPTION	35	WG	0.0328	LB A/A	1.5	OZ/A	1-2"	W A	0	0	0	98	97	65	37	43	33
16	DEFINE	60	WG	0.15	LB A/A	4	OZ/A	1-2"	W A									
16	DESTINY MSO	100	LIQ	1.5	PT/A	1.5	PT/A	1-2"	W A									
16	28% UAN	100	LIQ	2.0	QT/A	2	QT/A	1-2"	W A									
17	OPTION	35	WG	0.0328	LB A/A	1.5	OZ/A	1-2"	W A	0	0	0	98	99	90	76	88	83
17	DEFINE	60	WG	0.30	LB A/A	8	OZ/A	1-2"	W A									
17	DESTINY MSO	100	LIQ	1.5	PT/A	1.5	PT/A	1-2"	W A									
17	28% UAN	100	LIQ	2.0	QT/A	2	QT/A	1-2"	W A									
18	OPTION	35	WG	0.0328	LB A/A	1.5	OZ/A	2-4"	W B	3	0	0	95	96	98	99	86	70
18	YUKON	67.5	WG	0.168	LB A/A	4	OZ/A	2-4"	W B									
18	DESTINY MSO	100	LIQ	1.5	PT/A	1.5	PT/A	2-4"	W B									
18	28% UAN	100	LIQ	2.0	QT/A	2	QT/A	2-4"	W B									
19	OPTION	35	WG	0.0328	LB A/A	1.5	OZ/A	2-4"	W B	2	0	0	94	96	92	90	13	0
19	PRIME OIL COC	100	LIQ	2.0	PT/A	2	PT/A	2-4"	W B									
19	28% UAN	100	LIQ	2.0	QT/A	2	QT/A	2-4"	W B									
20	STEADFAST	75	WG	0.0352	LB A/A	0.75	OZ/A	2-4"	W B	0	0	0	98	98	78	57	47	28
20	PRIME OIL COC	100	LIQ	2.0	PT/A	2	PT/A	2-4"	W B									
20	28% UAN	100	LIQ	2.0	QT/A	2	QT/A	2-4"	W B									

Weed Code				SETFA	SETFA	AMBTR	AMBTR	AMATA	AMATA
Crop Code	ZEAMX	ZEAMX	ZEAMX						
Rating Data Type	Injury	Injury	Injury	Control	Control	Control	Control	Control	Control
Rating Unit	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent
Rating Date	6-24-02	7-1-02	7-15-02	7-1-02	7-15-02	7-1-02	7-15-02	7-1-02	7-15-02
Trt-Eval Interval	7 DA-B	14 DA-B	28 DA-B	14 DA-B	28 DA-B	14 DA-B	28 DA-B	14 DA-B	28 DA-B

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Unit	Prod Rate	Prod Unit	Grow Stg	Appl Code									
21	STEADFAST	75	WG	0.0352	LB A/A	0.75	OZ/A	2-4"	W B	5	0	0	96	98	84	70	89	78
21	AGH 02002	90	WG	0.258	LB A/A	4.6	OZ/A	2-4"	W B									
21	PRIME OIL COC	100	LIQ	2.0	PT/A	2	PT/A	2-4"	W B									
21	28% UAN	100	LIQ	2.0	QT/A	2	QT/A	2-4"	W B									
22	OPTION	35	WG	0.0328	LB A/A	1.5	OZ/A	2-4"	W B	7	0	0	92	94	94	91	83	72
22	AGH 02002	90	WG	0.258	LB A/A	4.6	OZ/A	2-4"	W B									
22	PRIME OIL COC	100	LIQ	2.0	PT/A	2	PT/A	2-4"	W B									
22	28% UAN	100	LIQ	2.0	QT/A	2	QT/A	2-4"	W B									
LSD (P=.05)										2.4	0.0	0.0	9.2	11.1	7.5	21.4	13.9	16.3
Replicate F										1.029	0.000	0.000	0.207	0.331	2.156	2.469	0.836	1.496
Replicate Prob(F)										0.3661	1.0000	1.0000	0.8140	0.7201	0.1284	0.0969	0.4405	0.2356
Treatment F										5.688	0.000	0.000	69.931	51.908	67.872	11.040	43.022	33.345
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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Project Code: 02-50W-MN110      Location: Belleville Research Center

#### Trial Comments

1. Protocol: Aventis.
2. DA-B = days after 2-4"W application.
3. Ratings at 7, 14, and 28 days after 2-4"W application were also 18, 25, and 39 days after 1-2"W application, respectively.
4. Ratings at 28 DA-B on 7-15-02 were also at canopy closure.