

Cooperative POST Soybean Glyphosate Tank-Mix Adjuvants - Site 1.

Trial ID: 09-51E-M90

Location: Belleville Res. Center

Investigator: Bryan Young, Professor, Southern Illinois University, bgyoung@siu.edu
 City State Zip Country: Belleville IL 62221 USA
 Trial Status: FINAL Initiation Date: 06-30-09

Objectives: Determine the role of adjuvants used in tank-mixtures
 of broadleaf herbicides with glyphosate.

Crop 1: GLXMA Soybean Variety: AG 4404 Description: RR/STS
 Planting Method: SEEDS Planting Date: 06-30-09
 Rate, Unit: 75 LB/A Depth, Unit: 1.0 IN
 Row Spacing, Unit: 30 IN

Pest 1 Type: W Code: AMBTR Ambrosia trifida L. ragweed, giant
 Pest 2 Type: W Code: IPOSS morningglory, species
 Pest 3 Type: W Code: AMATA Amaranthus rudis Sauer waterhemp, common

Plot Width, Unit: 10 FT Site Type: FIELD
 Plot Length, Unit: 27 FT Tillage Type: REDUCED-TILL
 Replications: 3 Study Design: Randomized Complete Block

Prior Crops, Year
 1. ZEAMD 2008

Field Prep./Maintenance: N 0 LB/A, P205 0 LB/A, K20 150 LB/A

% OM: 2.2 Texture: SILT LOAM
 pH: 6.7 Soil Name: PIERRON
 CEC: 11 Fert. Level: P1: 90 LB/A, K: 409 LB/A

Application Description A

Application Date: 07-22-09
 Time of Day: 11:00
 Application Method: Spray
 Application Timing: MPOST
 Application Placement: BROFOL
 Applied By: DKP
 Air Temperature, Unit: 72 F
 % Relative Humidity: 92
 Wind Velocity, Unit: 7 MPH
 Wind Direction: N
 Dew Presence (Y/N): N
 Soil Moisture: NORMAL
 % Cloud Cover: 100

Crop stage at application: 07-22-09
 V2
 Height Min, Max (inch): 3 8

Pest Stage At Each Application

Application Date: 07-22-09
 Weed Code: AMBTR
 Stage Majority (leaves): 5
 Stage Min, Max: 2 8
 Height Majority: 5 IN
 Height Min, Max: 3 10
 Density, Unit: 1 FT2
 Weed Code: IPOSS
 Stage Majority (leaves): 6
 Stage Min, Max: 2 8
 Height Majority: 5 IN
 Height Min, Max: 1 7
 Density, Unit: 2.5 FT2
 Weed Code: AMATA
 Stage Majority (leaves): 4
 Stage Min, Max: 2 6
 Height Majority: 4 IN
 Height Min, Max: 1 6
 Density, Unit: 0.5 FT2

Application Equipment

Appl. Equipment: CO2 sprayer
 Operating Pressure: 30 PSI
 Nozzle Type: Flat fan
 Nozzle Size: XR 8002
 Boom Length, Unit: 7.5 FT
 Spray Volume, Unit: 15 GPA

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Pest Code Crop Code Rating Date Rating Data Type Rating Unit Rating Timing Trt-Eval Interval										GLXMA 11-08-09 Moisture Percent					GLXMA 11-08-09 Yield bu/A	GLXMA 07-29-09 Injury Percent	GLXMA 08-05-09 Injury Percent	GLXMA 08-19-09 Injury Percent	AMBTR 08-05-09 Control Percent	AMBTR 08-19-09 Control Percent	AMBTR 09-16-09 Control Percent							
										7 DA-A			14 DA-A		28 DA-A		14 DA-A	28 DA-A		56 DA-A								
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Other Rate	Other Rate Unit	Growth Stage	Appl Code																			
1	ROUNDUP P-MAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	MPOST	A	12.4	ab	37	abc	0	h	0	f	0	e	96	bc	96	b	82	b			
1	N-PAK AMS	100	SL	5	% v/v	5	% v/v	MPOST	A																			
2	ROUNDUP P-MAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	MPOST	A	12.3	ab	43	a	0	h	0	f	0	e	97	ab	97	ab	89	ab			
2	FIRSTRATE	84	WG	0.0158	lb ai/a	0.3	oz/a	MPOST	A																			
2	N-PAK AMS	100	SL	5	% v/v	5	% v/v	MPOST	A																			
3	ROUNDUP P-MAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	MPOST	A	12.6	a	36	a-d	3	g	0	f	0	e	98	ab	97	ab	86	ab			
3	FIRSTRATE	84	WG	0.0158	lb ai/a	0.3	oz/a	MPOST	A																			
3	PREFERENCE	100	SL	0.5	% v/v	0.5	% v/v	MPOST	A																			
3	N-PAK AMS	100	SL	5	% v/v	5	% v/v	MPOST	A																			
4	ROUNDUP P-MAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	MPOST	A	12.3	ab	42	ab	7	f	2	e	0	e	95	cd	95	b	91	ab			
4	FIRSTRATE	84	WG	0.0158	lb ai/a	0.3	oz/a	MPOST	A																			
4	PRIME OIL COC	100	SL	1	% v/v	1	% v/v	MPOST	A																			
4	N-PAK AMS	100	SL	5	% v/v	5	% v/v	MPOST	A																			
5	ROUNDUP P-MAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	MPOST	A	12.3	ab	40	ab	13	de	6	d	0	e	93	d	92	c	91	ab			
5	FIRSTRATE	84	WG	0.0158	lb ai/a	0.3	oz/a	MPOST	A																			
5	SUPERB HC	100	SL	0.5	% v/v	0.5	% v/v	MPOST	A																			
5	N-PAK AMS	100	SL	5	% v/v	5	% v/v	MPOST	A																			
6	ROUNDUP P-MAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	MPOST	A	12.2	ab	44	a	12	e	6	d	0	e	94	d	94	bc	93	a			
6	FIRSTRATE	84	WG	0.0158	lb ai/a	0.3	oz/a	MPOST	A																			
6	DESTINY HC	100	SL	0.5	% v/v	0.5	% v/v	MPOST	A																			
6	N-PAK AMS	100	SL	5	% v/v	5	% v/v	MPOST	A																			
7	ROUNDUP P-MAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	MPOST	A	12.2	ab	40	ab	15	d	7	d	0	e	99	a	99	a	92	ab			
7	FLEXSTAR	1.88	EC	0.147	lb ai/a	10	fl oz/a	MPOST	A																			
7	N-PAK AMS	100	SL	5	% v/v	5	% v/v	MPOST	A																			
8	ROUNDUP P-MAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	MPOST	A	12.4	ab	38	abc	18	c	10	c	0	e	99	a	99	a	85	ab			
8	FLEXSTAR	1.88	EC	0.147	lb ai/a	10	fl oz/a	MPOST	A																			
8	PREFERENCE	100	SL	0.5	% v/v	0.5	% v/v	MPOST	A																			
8	N-PAK AMS	100	SL	5	% v/v	5	% v/v	MPOST	A																			
9	ROUNDUP P-MAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	MPOST	A	12.3	ab	38	abc	19	c	10	c	0	e	99	a	99	a	87	ab			
9	FLEXSTAR	1.88	EC	0.147	lb ai/a	10	fl oz/a	MPOST	A																			
9	PRIME OIL COC	100	SL	1	% v/v	1	% v/v	MPOST	A																			
9	N-PAK AMS	100	SL	5	% v/v	5	% v/v	MPOST	A																			
10	ROUNDUP P-MAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	MPOST	A	12.3	ab	36	a-d	15	d	6	d	0	e	99	a	99	a	90	ab			
10	FLEXSTAR	1.88	EC	0.147	lb ai/a	10	fl oz/a	MPOST	A																			
10	SUPERB HC	100	SL	0.5	% v/v	0.5	% v/v	MPOST	A																			
10	N-PAK AMS	100	SL	5	% v/v	5	% v/v	MPOST	A																			
11	ROUNDUP P-MAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	MPOST	A	12.2	ab	39	abc	18	c	10	c	2	cd	99	a	99	a	86	ab			
11	FLEXSTAR	1.88	EC	0.147	lb ai/a	10	fl oz/a	MPOST	A																			
11	DESTINY HC	100	SL	0.5	% v/v	0.5	% v/v	MPOST	A																			
11	N-PAK AMS	100	SL	5	% v/v	5	% v/v	MPOST	A																			
12	ROUNDUP P-MAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	MPOST	A	12.1	b	39	abc	20	bc	12	ab	1	de	99	a	99	a	92	ab			
12	FLEXSTAR	1.88	EC	0.294	lb ai/a	20	fl oz/a	MPOST	A																			
12	N-PAK AMS	100	SL	5	% v/v	5	% v/v	MPOST	A																			
13	ROUNDUP P-MAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	MPOST	A	12.5	ab	34	bcd	23	a	13	a	4	a	99	a	99	a	92	ab			
13	FLEXSTAR	1.88	EC	0.294	lb ai/a	20	fl oz/a	MPOST	A																			
13	PREFERENCE	100	SL	0.5	% v/v	0.5	% v/v	MPOST	A																			
13	N-PAK AMS	100	SL	5	% v/v	5	% v/v	MPOST	A																			
14	ROUNDUP P-MAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	MPOST	A	12.5	ab	30	cd	21	ab	13	a	4	ab	99	a	99	a	89	ab			
14	FLEXSTAR	1.88	EC	0.294	lb ai/a	20	fl oz/a	MPOST	A																			
14	PRIME OIL COC	100	SL	1	% v/v	1	% v/v	MPOST	A																			
14	N-PAK AMS	100	SL	5	% v/v	5	% v/v	MPOST	A																			
15	ROUNDUP P-MAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	MPOST	A	12.4	ab	37	a-d	19	bc	11	bc	3	bc	99	a	99	a	91	ab			
15	FLEXSTAR	1.88	EC	0.294	lb ai/a	20	fl oz/a	MPOST	A																			
15	SUPERB HC	100	SL	0.5	% v/v	0.5	% v/v	MPOST	A																			
15	N-PAK AMS	100	SL	5	% v/v	5	% v/v	MPOST	A																			

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										IPOSS	IPOSS	IPOSS	AMATA	AMATA	AMATA
Pest Code										08-05-09	08-19-09	09-16-09	08-05-09	08-19-09	09-16-09
Crop Code										Control	Control	Control	Control	Control	Control
Rating Date										Percent	Percent	Percent	Percent	Percent	Percent
Rating Data Type															
Rating Unit															
Rating Timing															
Trt-Eval Interval										14 DA-A	28 DA-A	56 DA-A	14 DA-A	28 DA-A	56 DA-A
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Other Rate	Other Rate Unit	Growth Stage	Appl Code						
1	ROUNDUP P-MAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	MPOST	A	72 d	69 d	62 e	99 a	99 a	99 a
1	N-PAK AMS	100	SL	5	% v/v	5	% v/v	MPOST	A						
2	ROUNDUP P-MAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	MPOST	A	73 d	72 d	72 d	99 a	99 a	96 c
2	FIRSTRATE	84	WG	0.0158	lb ai/a	0.3	oz/a	MPOST	A						
2	N-PAK AMS	100	SL	5	% v/v	5	% v/v	MPOST	A						
3	ROUNDUP P-MAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	MPOST	A	83 c	81 c	78 cd	98 a	98 a	98 abc
3	FIRSTRATE	84	WG	0.0158	lb ai/a	0.3	oz/a	MPOST	A						
3	PREFERENCE	100	SL	0.5	% v/v	0.5	% v/v	MPOST	A						
3	N-PAK AMS	100	SL	5	% v/v	5	% v/v	MPOST	A						
4	ROUNDUP P-MAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	MPOST	A	85 c	83 c	78 cd	98 a	97 a	97 abc
4	FIRSTRATE	84	WG	0.0158	lb ai/a	0.3	oz/a	MPOST	A						
4	PRIME OIL COC	100	SL	1	% v/v	1	% v/v	MPOST	A						
4	N-PAK AMS	100	SL	5	% v/v	5	% v/v	MPOST	A						
5	ROUNDUP P-MAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	MPOST	A	90 b	88 b	78 cd	97 a	97 a	96 bc
5	FIRSTRATE	84	WG	0.0158	lb ai/a	0.3	oz/a	MPOST	A						
5	SUPERB HC	100	SL	0.5	% v/v	0.5	% v/v	MPOST	A						
5	N-PAK AMS	100	SL	5	% v/v	5	% v/v	MPOST	A						
6	ROUNDUP P-MAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	MPOST	A	89 b	88 b	85 abc	98 a	98 a	98 abc
6	FIRSTRATE	84	WG	0.0158	lb ai/a	0.3	oz/a	MPOST	A						
6	DESTINY HC	100	SL	0.5	% v/v	0.5	% v/v	MPOST	A						
6	N-PAK AMS	100	SL	5	% v/v	5	% v/v	MPOST	A						
7	ROUNDUP P-MAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	MPOST	A	96 a	96 a	85 abc	99 a	99 a	99 a
7	FLEXSTAR	1.88	EC	0.147	lb ai/a	10	fl oz/a	MPOST	A						
7	N-PAK AMS	100	SL	5	% v/v	5	% v/v	MPOST	A						
8	ROUNDUP P-MAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	MPOST	A	98 a	98 a	86 abc	99 a	99 a	98 ab
8	FLEXSTAR	1.88	EC	0.147	lb ai/a	10	fl oz/a	MPOST	A						
8	PREFERENCE	100	SL	0.5	% v/v	0.5	% v/v	MPOST	A						
8	N-PAK AMS	100	SL	5	% v/v	5	% v/v	MPOST	A						
9	ROUNDUP P-MAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	MPOST	A	99 a	98 a	88 ab	99 a	99 a	99 a
9	FLEXSTAR	1.88	EC	0.147	lb ai/a	10	fl oz/a	MPOST	A						
9	PRIME OIL COC	100	SL	1	% v/v	1	% v/v	MPOST	A						
9	N-PAK AMS	100	SL	5	% v/v	5	% v/v	MPOST	A						
10	ROUNDUP P-MAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	MPOST	A	98 a	98 a	85 abc	98 a	97 a	97 abc
10	FLEXSTAR	1.88	EC	0.147	lb ai/a	10	fl oz/a	MPOST	A						
10	SUPERB HC	100	SL	0.5	% v/v	0.5	% v/v	MPOST	A						
10	N-PAK AMS	100	SL	5	% v/v	5	% v/v	MPOST	A						
11	ROUNDUP P-MAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	MPOST	A	98 a	98 a	83 abc	99 a	99 a	98 ab
11	FLEXSTAR	1.88	EC	0.147	lb ai/a	10	fl oz/a	MPOST	A						
11	DESTINY HC	100	SL	0.5	% v/v	0.5	% v/v	MPOST	A						
11	N-PAK AMS	100	SL	5	% v/v	5	% v/v	MPOST	A						
12	ROUNDUP P-MAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	MPOST	A	99 a	98 a	81 bcd	99 a	99 a	99 a
12	FLEXSTAR	1.88	EC	0.294	lb ai/a	20	fl oz/a	MPOST	A						
12	N-PAK AMS	100	SL	5	% v/v	5	% v/v	MPOST	A						
13	ROUNDUP P-MAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	MPOST	A	98 a	97 a	82 abc	99 a	99 a	99 a
13	FLEXSTAR	1.88	EC	0.294	lb ai/a	20	fl oz/a	MPOST	A						
13	PREFERENCE	100	SL	0.5	% v/v	0.5	% v/v	MPOST	A						
13	N-PAK AMS	100	SL	5	% v/v	5	% v/v	MPOST	A						
14	ROUNDUP P-MAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	MPOST	A	99 a	99 a	80 bcd	99 a	99 a	98 ab
14	FLEXSTAR	1.88	EC	0.294	lb ai/a	20	fl oz/a	MPOST	A						
14	PRIME OIL COC	100	SL	1	% v/v	1	% v/v	MPOST	A						
14	N-PAK AMS	100	SL	5	% v/v	5	% v/v	MPOST	A						
15	ROUNDUP P-MAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	MPOST	A	99 a	99 a	90 a	99 a	99 a	97 abc
15	FLEXSTAR	1.88	EC	0.294	lb ai/a	20	fl oz/a	MPOST	A						
15	SUPERB HC	100	SL	0.5	% v/v	0.5	% v/v	MPOST	A						
15	N-PAK AMS	100	SL	5	% v/v	5	% v/v	MPOST	A						

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Pest Code	IPOSS	IPOSS	IPOSS	AMATA	AMATA	AMATA
Crop Code						
Rating Date	08-05-09	08-19-09	09-16-09	08-05-09	08-19-09	09-16-09
Rating Data Type	Control	Control	Control	Control	Control	Control
Rating Unit	Percent	Percent	Percent	Percent	Percent	Percent
Rating Timing						
Trt-Eval Interval	14 DA-A	28 DA-A	56 DA-A	14 DA-A	28 DA-A	56 DA-A

Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Other Rate	Other Rate Unit	Growth Stage	Appl Code						
16	ROUNDUP P-MAX	4.5	SL	0.77 lb ae/a	22 fl oz/a		MPOST A		99 a	98 a	77 cd	99 a	99 a	99 a
16	FLEXSTAR	1.88	EC	0.294 lb ai/a	20 fl oz/a		MPOST A							
16	DESTINY HC	100	SL	0.5 % v/v	0.5 % v/v		MPOST A							
16	N-PAK AMS	100	SL	5 % v/v	5 % v/v		MPOST A							
17	NONTREATED								0 e	0 e	0 f	0 b	0 b	0 d
LSD (P=.05)									2.7	3.9	9.3	2.1	2.6	2.6
Replicate F									0.570	1.133	3.456	1.294	0.452	1.516
Replicate Prob(F)									0.5713	0.3345	0.0438	0.2882	0.6403	0.2349
Treatment F									667.194	320.145	40.939	1099.744	693.399	724.434
Treatment Prob(F)									0.0001	0.0001	0.0001	0.0001	0.0001	0.0001

Means followed by same letter do not significantly differ (P=.05, LSD)

Trial Comments

1. Protocol: SIU/UIUC/WIU/ISA.
2. Ratings: Visual crop response estimates at 7, 14, and 28 DAT.
Visual estimates of control, by species, at 14 and 28 DAT; late-season rating of all plots at 56 DAT or at crop harvest.
3. MPOST = 3-5"W.
4. Take weed counts in nontreated at the MPOST application timing (No./0.5 m2).
5. Yield if possible.
6. IPOSS = Morningglory species including IPOHE (ivyleaf morningglory) and IPOLA (pitted morningglory).
7. Weed counts per 0.5 square meter in the nontreated plots on 7-21-09 were:
Plot 117- 6 AMBTR, 7 IPOSS, 2 ABUTH, 2 AMATA
Plot 203- 8 AMBTR, 9 IPOSS, 5 ABUTH
Plot 306- 4 AMBTR, 3 IPOSS, 2 ABUTH, 5 AMATA
8. Ratings at 56 DA-A includes new growth after herbicide application.
9. Harvested 11-8-09, (2) 30 inch rows by 24 ft.