

Evaluation of Metsulfuron for Weed Control in Wheat.

Trial ID: 13-11C-W50 Location: Belleville Res. Center Trial Year: 2013
Investigator: Bryan Young

Trial Status: F one-year/final Initiation Date: 11-1-12 Completion Date: 7-6-13		Trial Location
City: Belleville State/Prov.: Illinois IL Postal Code: 62221	Country: USA	

Objectives:
Evaluate the value of low rates of metsulfuron for in-crop product concepts in the Mid-South.

Study Director: Bryan Young Organization: Southern Illinois University Address: 1205 Lincoln Drive - AG 176 - MC 4415 City+State/Prov: Carbondale IL Postal Code: 62901 Country: USA		Title: Professor Phone No.: 618-453-7679 Mobile No.: 618-713-6471 E-mail: bgyoung@siu.edu
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Crop 1: TRZAW Triticum aestivum (winter) Winter wheat Variety: P25R62 BBCH Scale: BCER		Crop Description
Planting Rate, Unit: 1.5 millionS/A Depth, Unit: 1 IN Row Spacing, Unit: 7.5 IN	Planting Date: 11-1-12 Planting Method: SEEDED	

Pest 1 Type: W Code: RANAB Ranunculus abortivus L. Common Name: buttercup, smallflower		Pest Description
Pest 2 Type: W Code: CAPBP Capsella bursa-pastoris(L.)M Common Name: shepherdspurse		
Pest 3 Type: W Code: CARPA Cardamine parviflora L. Common Name: bittercress, smallflowered		

Treated Plot Width: 7.5 FT Total Plot Width: 10 FT Treated Plot Length: 30 FT Total Plot Length: 30 FT		Site and Design Site Type: FIELD Experimental Unit: 1 PLOT Tillage Type: NOTILL no-till Study Design: RACOB L Randomized Complete Block (RCB)						
Replications: 3 Untreated Arrangement: INCLUDED single control randomized in each rep								
<table border="1"> <thead> <tr> <th>No.</th> <th>Previous Crop</th> <th>Year</th> </tr> </thead> <tbody> <tr> <td>1.</td> <td>NON-CROP</td> <td>2012</td> </tr> </tbody> </table>	No.	Previous Crop	Year	1.	NON-CROP	2012		
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Maintenance							
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1.	Fall: N 30 LB/A, P2O5 0 LB/A, K2O 0 LB/A						
2.	Spring: N 85 LB/A, P2O5 0 LB/A, K2O 0 LB/A						

% OM: 2.9 Texture: SIL silt loam pH: 6.4 Soil Name: Bethalto CEC: 12		Soil Description									
Additional Measured Elements											
<table border="1"> <thead> <tr> <th>Element</th> <th>Quantity</th> <th>Unit</th> </tr> </thead> <tbody> <tr> <td>P1</td> <td>57</td> <td>LB/A</td> </tr> <tr> <td>K</td> <td>275</td> <td>LB/A</td> </tr> </tbody> </table>	Element	Quantity	Unit	P1	57	LB/A	K	275	LB/A		
Element	Quantity	Unit									
P1	57	LB/A									
K	275	LB/A									

Overall Moisture Conditions: ABONOR Closest Weather Station: ICN - Belleville IL Distance, Unit: 0.5 MI		Moisture and Weather Conditions																																																							
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No.	Date	Amount	Unit	Type	Type Description	Interval	Unit	Min Temp	Max Temp	Temp Unit																																															
1.	10-5-12	1.35	IN	RAIN	rain	1	DAY																																																		
2.	10-7-12					7	DAY	34	77	F																																															
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5.	10-17-12	0.61	IN	RAIN	rain	1	DAY			
6.	10-21-12					7	DAY	34	81	F
7.	10-22-12	0.68	IN	RAIN	rain	2	DAY			
8.	10-25-12	0.41	IN	RAIN	rain	2	DAY			
9.	10-28-12					7	DAY	33	61	F
10.	11-4-12					7	DAY	28	76	F
11.	11-5-12	0.09	IN	RAIN	rain	3	DAY			
12.	11-11-12					7	DAY	25	67	F
13.	11-11-12	1.54	IN	RAIN	rain	2	DAY			
14.	11-18-12					7	DAY	23	67	F
15.	11-22-12	0.23	IN	RAIN	rain	1	DAY			
16.	11-25-12					7	DAY	22	67	F
17.	12-2-12					7	DAY	31	71	F
18.	12-4-12	0.1	IN	RAIN	rain	1	DAY			
19.	12-9-12					7	DAY	20	60	F
20.	12-9-12	0.18	IN	RAIN	rain	2	DAY			
21.	12-15-12	0.44	IN	RAIN	rain	1	DAY			
22.	12-16-12					7	DAY	19	56	F
23.	12-20-12	5.07	IN	RAIN	rain	1	DAY			
24.	12-23-12					7	DAY	14	52	F
25.	12-28-12	0.26	IN	RAIN	rain	1	DAY			
26.	12-30-12					7	DAY	10	41	F
27.	12-31-12	0.11	IN	RAIN	rain	1	DAY			
28.	1-6-13					7	DAY	18	62	F
29.	1-10-13	0.72	IN	RAIN	rain	2	DAY			
30.	1-12-13	1.84	IN	RAIN	rain	2	DAY			
31.	1-13-13					7	DAY	16	64	F
32.	1-20-13					7	DAY	10	45	F
33.	1-27-13					7	DAY	7	67	F
34.	1-29-13	2.36	IN	RAIN	rain	3	DAY			
35.	2-3-13					7	DAY	22	57	F
36.	2-3-13	0.2	IN	RAIN	rain	2	DAY			
37.	2-7-13	0.13	IN	RAIN	rain	1	DAY			
38.	2-10-13					7	DAY	21	58	F
39.	2-10-13	0.74	IN	RAIN	rain	2	DAY			
40.	2-17-13					7	DAY	16	54	F
41.	2-18-13	0.12	IN	RAIN	rain	1	DAY			
42.	2-21-13	0.39	IN	RAIN	rain	2	DAY			
43.	2-24-13					7	DAY	17	49	F
44.	2-26-13	0.8	IN	RAIN	rain	3	DAY			
45.	3-3-13					7	DAY	19	66	F
46.	3-10-13					7	DAY	25	68	F
47.	3-10-13	0.71	IN	RAIN	rain	2	DAY			
48.	3-17-13					7	DAY	19	53	F
49.	3-17-13	1.43	IN	RAIN	rain	3	DAY			
50.	3-24-13					7	DAY	22	60	F
51.	3-24-13	0.41	IN	RAIN	rain	1	DAY			
52.	3-30-13	0.13	IN	RAIN	rain	1	DAY			
53.	3-31-13					7	DAY	27	71	F
54.	4-7-13					7	DAY	34	82	F
55.	4-10-13	1.4	IN	RAIN	rain	2	DAY			
56.	4-14-13					7	DAY	31	82	F
57.	4-16-13	1.05	IN	RAIN	rain	2	DAY			
58.	4-18-13	5.2	IN	RAIN	rain	1	DAY			
59.	4-21-13					7	DAY	35	72	F
60.	4-23-13	1.35	IN	RAIN	rain	2	DAY			
61.	4-27-13	0.3	IN	RAIN	rain	2	DAY			
62.	4-28-13					7	DAY	41	83	F
63.	5-3-13	3.07	IN	RAIN	rain	4	DAY			
64.	5-5-13					7	DAY	46	80	F

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65.	5-9-13	0.35	IN	RAIN	rain	2	DAY			
66.	5-12-13					7	DAY	39	92	F
67.	5-16-13	0.55	IN	RAIN	rain	2	DAY			
68.	5-19-13					7	DAY	45	88	F
69.	5-20-13	0.67	IN	RAIN	rain	2	DAY			
70.	5-26-13					7	DAY	56	86	F
71.	5-27-13	1.23	IN	RAIN	rain	2	DAY			
72.	5-30-13	0.51	IN	RAIN	rain	3	DAY			
73.	5-31-13	3.46	IN	RAIN	rain	2	DAY			
74.	6-2-13					7	DAY	50	80	F
75.	6-9-13					7	DAY	59	94	F
76.	6-10-13	0.48	IN	RAIN	rain	2	DAY			
77.	6-16-13					7	DAY	61	90	F
78.	6-17-13	2.16	IN	RAIN	rain	3	DAY			
79.	6-23-13					7	DAY	64	92	F
80.	6-23-13	5.33	IN	RAIN	rain	2	DAY			
81.	6-26-13	0.46	IN	RAIN	rain	1	DAY			
82.	6-29-13	0.19	IN	RAIN	rain	2	DAY			
83.	6-30-13					7	DAY	61	86	F
84.	7-2-13	2.08	IN	RAIN	rain	2	DAY			

Application Description

	A
Application Date:	4-9-13
Appl. Start Time:	7:00
Appl. Stop Time:	7:30
Application Method:	Spray
Application Timing:	POST
Application Placement:	BROFOL
Applied By:	RFK
Air Temperature, Unit:	65 F
% Relative Humidity:	78
Wind Velocity, Unit:	5 MPH
Wind Direction:	S
Dew Presence (Y/N):	N
Soil Temperature, Unit:	56 F
Soil Moisture:	NORMAL
% Cloud Cover:	100
Next Moisture Occurred On:	4-10-13
Time to Next Moisture, Unit:	36 HR

Crop Stage At Each Application

	A
Crop 1 Code, BBCH Scale:	TRZAW
Stage Scale Used:	FEEKES
Stage Majority, Percent:	F4
Stage Minimum, Percent:	F4
Stage Maximum, Percent:	F4
Height, Unit:	6 IN
Height Minimum, Maximum:	4. 6

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	A
Pest 1 Code, Type, Scale:	RANAB W
Stage Majority, Percent:	10+
Stage Minimum, Percent:	10
Stage Maximum, Percent:	10+
Height, Unit:	4 IN
Height Minimum, Maximum:	2 6
Density, Unit:	0.1 FT2
Pest 2 Code, Type, Scale:	CAPBP W
Stage Majority, Percent:	10+
Stage Minimum, Percent:	10
Stage Maximum, Percent:	10+
Height, Unit:	8 IN
Height Minimum, Maximum:	6 12
Density, Unit:	0.01 FT2
Pest 3 Code, Type, Scale:	CARPA W
Stage Majority, Percent:	10+
Stage Minimum, Percent:	10
Stage Maximum, Percent:	10+
Height, Unit:	3 IN
Height Minimum, Maximum:	2 4
Density, Unit:	0.01 FT2

Application Equipment

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

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Pest Code Crop Code Rating Date Rating Type Rating Unit Rating Timing Trt-Eval Interval								TRZAW 7-6-13 Moisture Percent	TRZAW 7-6-13 Test wt. lb/bu	TRZAW 7-6-13 Yield bu/A	TRZAW 4-16-13 Injury Percent	TRZAW 4-23-13 Injury Percent	TRZAW 5-7-13 Injury Percent	
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Other Rate	Other Rate	Growth Unit Stage	Appl Code			7 DA-A	14 DA-A	28 DA-A	
1	HARMONY EXTRA SG NIS (ACTIVATOR 90)	50 SG 100 SL		0.0234 lb ai/a 0.25 % v/v	0.75 oz/a 0.25 % v/v		POST POST	A A	14.4 a	53.5 a	61 a	0 a	0 a	0 a
2	HARMONY EXTRA SG NIS (ACTIVATOR 90)	50 SG 100 SL		0.028 lb ai/a 0.25 % v/v	0.9 oz/a 0.25 % v/v		POST POST	A A	14.1 a	53.6 a	59 a	0 a	0 a	0 a
3	ALLY XP NIS (ACTIVATOR 90)	60 WG 100 SL		0.00125 lb ai/a 0.25 % v/v	0.0333 oz/a 0.25 % v/v		POST POST	A A	14.0 a	53.7 a	62 a	0 a	0 a	0 a
4	EXPRESS ALLY XP NIS (ACTIVATOR 90)	50 SG 60 WG 100 SL		0.0094 lb ai/a 0.00125 lb ai/a 0.25 % v/v	0.3 oz/a 0.0333 oz/a 0.25 % v/v		POST POST POST	A A A	13.7 a	53.9 a	59 a	0 a	0 a	0 a
5	HARMONY EXTRA SG ALLY XP NIS (ACTIVATOR 90)	50 SG 60 WG 100 SL		0.0234 lb ai/a 0.00125 lb ai/a 0.25 % v/v	0.75 oz/a 0.0333 oz/a 0.25 % v/v		POST POST POST	A A A	13.9 a	53.7 a	65 a	0 a	0 a	0 a
6	HARMONY EXTRA SG ALLY XP NIS (ACTIVATOR 90)	50 SG 60 WG 100 SL		0.028 lb ai/a 0.00125 lb ai/a 0.25 % v/v	0.9 oz/a 0.0333 oz/a 0.25 % v/v		POST POST POST	A A A	14.1 a	53.7 a	60 a	0 a	0 a	0 a
7	POWERFLEX HL NIS (ACTIVATOR 90)	13.13 WG 100 SL		0.0164 lb ai/a 0.25 % v/v	2 oz/a 0.25 % v/v		POST POST	A A	14.0 a	53.7 a	64 a	0 a	0 a	0 a
8	NONTREATED								14.1 a	53.6 a	61 a	0 a	0 a	0 a
LSD (P=.05)									0.40	0.30	11.1	0.0	0.0	0.0
Standard Deviation									0.23	0.17	6.3	0.0	0.0	0.0
CV									1.64	0.32	10.34	0.0	0.0	0.0
Replicate F									4.017	3.155	5.019	0.000	0.000	0.000
Replicate Prob(F)									0.0418	0.0739	0.0227	1.0000	1.0000	1.0000
Treatment F									2.033	1.361	0.365	0.000	0.000	0.000
Treatment Prob(F)									0.1224	0.2945	0.9078	1.0000	1.0000	1.0000

Means followed by same letter do not significantly differ (P=.05, LSD)
Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

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Pest Code Crop Code Rating Date Rating Type Rating Unit Rating Timing Trt-Eval Interval							RANAB	RANAB	CAPBP	CAPBP	CARPA	CARPA
							4-23-13 Control Percent	5-7-13 Control Percent	4-23-13 Control Percent	5-7-13 Control Percent	4-23-13 Control Percent	5-7-13 Control Percent
							14 DA-A	28 DA-A	14 DA-A	28 DA-A	14 DA-A	28 DA-A
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Other Rate Unit	Other Rate Unit	Growth Stage	Appl Code			
1	HARMONY EXTRA SG NIS (ACTIVATOR 90)	50 SG 100 SL		0.0234 lb ai/a 0.25 % v/v	0.75 oz/a 0.25 % v/v			POST POST	A A	92 a	99 a	99 a
2	HARMONY EXTRA SG NIS (ACTIVATOR 90)	50 SG 100 SL		0.028 lb ai/a 0.25 % v/v	0.9 oz/a 0.25 % v/v			POST POST	A A	92 a	99 a	99 a
3	ALLY XP NIS (ACTIVATOR 90)	60 WG 100 SL		0.00125 lb ai/a 0.25 % v/v	0.0333 oz/a 0.25 % v/v			POST POST	A A	94 a	99 a	99 a
4	EXPRESS ALLY XP NIS (ACTIVATOR 90)	50 SG 60 WG 100 SL		0.0094 lb ai/a 0.00125 lb ai/a 0.25 % v/v	0.3 oz/a 0.0333 oz/a 0.25 % v/v			POST POST POST	A A A	90 a	99 a	99 a
5	HARMONY EXTRA SG ALLY XP NIS (ACTIVATOR 90)	50 SG 60 WG 100 SL		0.0234 lb ai/a 0.00125 lb ai/a 0.25 % v/v	0.75 oz/a 0.0333 oz/a 0.25 % v/v			POST POST POST	A A A	92 a	99 a	99 a
6	HARMONY EXTRA SG ALLY XP NIS (ACTIVATOR 90)	50 SG 60 WG 100 SL		0.028 lb ai/a 0.00125 lb ai/a 0.25 % v/v	0.9 oz/a 0.0333 oz/a 0.25 % v/v			POST POST POST	A A A	94 a	99 a	99 a
7	POWERFLEX HL NIS (ACTIVATOR 90)	13.13 WG 100 SL		0.0164 lb ai/a 0.25 % v/v	2 oz/a 0.25 % v/v			POST POST	A A	93 a	99 a	99 a
8	NONTREATED									0 b	0 a	0 a
LSD (P=.05)							5.6	0.0	0.0	0.0	0.0	0.0
Standard Deviation							3.2	0.0	0.0	0.0	0.0	0.0
CV							3.99	0.0	0.0	0.0	0.0	0.0
Replicate F							0.606	0.000	0.000	0.000	0.000	0.000
Replicate Prob(F)							0.5594	1.0000	1.0000	1.0000	1.0000	1.0000
Treatment F							308.410	0.000	0.000	0.000	0.000	0.000
Treatment Prob(F)							0.0001	1.0000	1.0000	1.0000	1.0000	1.0000

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Trial Comments

1. Protocol: DuPont USA-13-224.
2. Ratings: CI 5-7, 14, and 28 DA-A, WC 14 and 28 DA-A.
3. Application A (POST) is Harmony Extra SG application window for winter wheat.
4. Blanket apply POST for grass control as needed.
5. Yield.
6. Harvested 7-6-13, 4.375 ft by 27 ft.