

Evaluation of Roundup Ready Corn Tolerance to Formulations of Glyphosate.

Project Code: 03-20B-S180 Location: Belleville Research Center

Investigator: Bryan Young, Assistant Professor, Southern Illinois University

City State Zip Country: Belleville IL 62221 USA
 Trial Status: Final Updated: 10-31-03

Objective:

Evaluate Roundup Ready corn tolerance to several rates and formulations of glyphosate.

Weed Code	Common Name	Scientific Name
1. NA	crop tolerance only	

Crop 1:	ZEAMX corn, field	Variety:	DKC 60-17 RR
Planting Method:	Seeded	Planting Date:	5-24-03
Rate:	28000 S/A	Depth:	1.5 IN
Row Spacing:	30 IN		

Plot Width, Unit:	10 FT	Plot Length, Unit:	24 FT	Reps:	3
Tillage Type:	Reduced-Till	Study Design:	Randomized complete block		
Previous Crop, Year:	GLXMA, 2002				

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

Soil Name:	Ebbert	% OM:	1.2	pH:	6.0	CEC:	15
Texture:	Silt loam	Fert. Level:	P1: 74 LB/A, K: 242 LB/A				

APPLICATION DESCRIPTION

	A	B
Application Date:	6-16-03	6-27-03
Time of Day:	15:30	9:00
Application Method:	Spray	Spray
Application Timing:	V3	V6
Applic. Placement:	BROFOL	BROFOL
Air Temp., Unit:	86 F	70 F
% Relative Humidity:	72	54
Wind Velocity, Unit:	3 MPH	0 MPH
Soil Moisture:	ABONOR	ABONOR

CROP STAGE AT EACH APPLICATION

	A		B	
Crop 1 Code, Stage:	ZEAMX	V3	ZEAMX	V6
Height, Unit:	5	IN	10	IN

APPLICATION EQUIPMENT

	A		B	
Appl. Equipment:	CO2	sprayer	CO2	sprayer
Operating Pressure:	40	PSI	40	PSI
Nozzle Type:	Flat	fan	Flat	fan
Nozzle Size:	8002		8002	
Boom Length, Unit:	10	FT	10	FT
Spray Volume, Unit:	20	GPA	20	GPA

NOTES:

Harvested Oct-28-03, (2) 30 inch rows by 21 ft.

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Weed Code																	
Crop Code																	
Rating Data Type																	
Rating Unit																	
Rating Date																	
Trt-Eval Interval																	
		ZEAMX	ZEAMX	ZEAMX	ZEAMX	ZEAMX	ZEAMX	ZEAMX	ZEAMX	ZEAMX	ZEAMX						
		Yield	HEIRED	HEIRED	HEIRED	DISCOLOR	DISCOLOR	DISCOLOR	Kill	Height							
		bu/A	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Inches							
		10-28-03	14 DAT	28 DAT	56 DAT	14 DAT	28 DAT	56 DAT	56 DAT	9-24-03	EOS						
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Prod Rate	Prod Unit	Grow Stg	Appl Code								
1	NONTREATED									186	0	0	0	0	0	0	94
2	ROUNDUP ULTRA MAX	3.7	SL	0.75	LB AE/A	26	OZ/A V3	A		199	0	0	0	0	0	0	96
3	ROUNDUP W-MAX	4.5	SL	0.75	LB AE/A	21.3	OZ/A V3	A		200	0	0	0	0	0	0	97
4	CLEAROUT 41 PLUS	3	L	0.75	LB AE/A	32	OZ/A V3	A		205	0	0	0	0	0	0	96
5	TOUCHDOWN	3	SL	0.75	LB AE/A	32	OZ/A V3	A		197	0	0	0	0	0	0	97
6	TOUCHDOWN TOTAL	4.17	SC	0.75	LB AE/A	23	OZ/A V3	A		205	0	0	0	0	0	0	96
7	TOUCHDOWN 5	5	SL	1.0	LB A/A	25.6	OZ/A V3	A		204	0	0	0	0	0	0	97
8	ROUNDUP ULTRA MAX	3.7	SL	2.25	LB AE/A	78	OZ/A V3	A		202	0	0	0	0	0	0	98
9	ROUNDUP W-MAX	4.5	SL	2.25	LB AE/A	64	OZ/A V3	A		203	0	0	0	0	0	0	98
10	CLEAROUT 41 PLUS	3	L	2.25	LB AE/A	96	OZ/A V3	A		209	0	0	0	0	0	0	98
11	TOUCHDOWN	3	SL	2.25	LB AE/A	96	OZ/A V3	A		205	0	0	0	0	0	0	98
12	TOUCHDOWN TOTAL	4.17	SC	2.25	LB AE/A	69	OZ/A V3	A		205	0	0	0	0	0	0	98
13	TOUCHDOWN 5	5	SL	3.0	LB A/A	77	OZ/A V3	A		181	0	0	0	1	0	0	97
14	ROUNDUP ULTRA MAX	3.7	SL	0.75	LB AE/A	26	OZ/A V6	B		203	0	0	0	0	0	0	98
15	ROUNDUP W-MAX	4.5	SL	0.75	LB AE/A	21.3	OZ/A V6	B		202	0	0	0	0	0	0	97
16	CLEAROUT 41 PLUS	3	L	0.75	LB AE/A	32	OZ/A V6	B		210	0	0	0	0	0	0	97
17	TOUCHDOWN	3	SL	0.75	LB AE/A	32	OZ/A V6	B		209	0	0	0	0	0	0	97
18	TOUCHDOWN TOTAL	4.17	SC	0.75	LB AE/A	23	OZ/A V6	B		201	0	0	0	0	0	0	98
19	TOUCHDOWN 5	5	SL	1.0	LB A/A	25.6	OZ/A V6	B		94	48	35	25	10	10	2	85
20	ROUNDUP ULTRA MAX	3.7	SL	2.25	LB AE/A	78	OZ/A V6	B		209	0	0	0	0	0	0	97
21	ROUNDUP W-MAX	4.5	SL	2.25	LB AE/A	64	OZ/A V6	B		193	0	0	0	0	0	0	96
22	CLEAROUT 41 PLUS	3	L	2.25	LB AE/A	96	OZ/A V6	B		200	0	0	0	0	0	0	97
23	TOUCHDOWN	3	SL	2.25	LB AE/A	96	OZ/A V6	B		207	0	0	0	0	0	0	98

Weed Code																	
Crop Code																	
Rating Data Type																	
Rating Unit																	
Rating Date																	
Trt-Eval Interval																	

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Prod Rate	Prod Unit	Grow Stg	Appl Code	ZEAMX Yield 10-28-03 bu/A	ZEAMX HEIRED Percent	ZEAMX HEIRED Percent	ZEAMX HEIRED Percent	ZEAMX DISCOLOR Percent	ZEAMX DISCOLOR Percent	ZEAMX DISCOLOR Percent	ZEAMX Kill Percent	ZEAMX Height 9-24-03 Inches EOS
24	TOUCHDOWN TOTAL	4.17	SC	2.25	LB AE/A	69	OZ/A V6	B		193	0	0	0	0	0	0	0	97
25	TOUCHDOWN 5	5	SL	3.0	LB A/A	77	OZ/A V6	B		0	82	85	82	32	50	2	94	51
26	ROUNDUP ULTRA MAX	3.7	SL	0.75	LB AE/A	26	OZ/A V3	A		203	0	0	0	0	0	0	0	97
26	ROUNDUP ULTRA MAX	3.7	SL	0.75	LB AE/A	26	OZ/A V6	B										
27	ROUNDUP W-MAX	4.5	SL	0.75	LB AE/A	21.3	OZ/A V3	A		209	0	0	0	0	0	0	0	98
27	ROUNDUP W-MAX	4.5	SL	0.75	LB AE/A	21.3	OZ/A V6	B										
28	CLEAROUT 41 PLUS	3	L	0.75	LB AE/A	32	OZ/A V3	A		207	0	0	0	0	0	0	0	99
28	CLEAROUT 41 PLUS	3	L	0.75	LB AE/A	32	OZ/A V6	B										
29	TOUCHDOWN	3	SL	0.75	LB AE/A	32	OZ/A V3	A		209	0	0	0	0	0	0	0	99
29	TOUCHDOWN	3	SL	0.75	LB AE/A	32	OZ/A V6	B										
30	TOUCHDOWN TOTAL	4.17	SC	0.75	LB AE/A	23	OZ/A V3	A		219	0	0	0	0	0	0	0	98
30	TOUCHDOWN TOTAL	4.17	SC	0.75	LB AE/A	23	OZ/A V6	B										
LSD (P=.05)										17.1	1.9	0.0	1.7	1.7	0.0	0.0	2.2	7.8
Replicate F										5.688	0.592	0.000	1.000	1.403	0.000	0.000	1.000	5.266
Replicate Prob(F)										0.0055	0.5566	1.0000	0.3741	0.2540	1.0000	1.0000	0.3741	0.0079
Treatment F										48.183	620.245	0.000	643.828	94.620	0.000	0.000	467.225	10.052
Treatment Prob(F)										0.0001	0.0001	1.0000	0.0001	0.0001	1.0000	1.0000	0.0001	0.0001

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Trial Comments

1. Protocol: SIU (RFK).
2. Ratings:
3. Blanket PRE application of Bicep II Magnum at 3.3 lbai/A applied 10 ft wide to all plots including the nontreated.
4. Study is weed-free.
5. DAT = days after treatment. HEIRED = height reduction. DISCOLOR = discoloration. EOS = end of season.
Ratings at 14, 28 and 56 days after V3 applications were on 6-30-03, 7-14-03 and 8-11-03, respectively.
Ratings at 14, 28 and 56 days after V6 applications were on 7-11-03, 7-25-03 and 8-22-03, respectively.