

## Postemergence Application Timing in Glyphosate-Resistant Corn.

Project Code: 04-ARC-4      Location: Agronomy Research Center  
Investigator: Bryan Young

Investigator: Bryan Young, Associate Professor, Southern Illinois University

City State Zip Country:      Carbondale      IL 62901 USA  
Trial Status: Final      Updated:      10-6-04

## Objective:

To gain a better understanding of the importance of weed control at the proper timing in glyphosate-resistant corn.

Weed Code	Common Name	Scientific Name
1. SETFA	foxtail, giant	Setaria faberi Herrm.
2. AMATA	waterhemp, common	Amaranthus rudis Sauer
3. IPOSS	morningglory, species	Ipomoea sp.
4. ABUTH	velvetleaf	Abutilon theophrasti Medicus
5. AMBEL	ragweed, common	Ambrosia artemisiifolia L.
6. CYPES	nutsedge, yellow	Cyperus esculentus L.

Crop 1:      ZEAMX corn, field      Variety:      31N26 RR  
Planting Method: Seeded      Planting Date: 5-11-04  
Rate:      28500 S/A      Depth:      1.5 IN  
Row Spacing:      30 IN

Plot Width, Unit: 10 FT      Plot Length, Unit: 30 FT      Reps: 4  
Tillage Type:      Reduced-Till      Study Design: Randomized complete block  
Previous Crop, Year: GLXMA, 2003

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

Soil Name: Weir      % OM: 1.7      pH: 6      CEC: 8.2  
Texture:      Silt loam      Fert. Level: P1: 64 LB/A, K: 319 LB/A

## APPLICATION DESCRIPTION

	A	B	C	D	E	F	G	H
Application Date:	5-11-04	5-27-04	6-8-04		6-10-04	6-14-04	6-16-04	
Time of Day:	17:00	12:00	17:00	not applied	17:00	17:00	16:00	not applied
Application Method:	Spray	Spray	Spray	Spray	Spray	Spray	Spray	Spray
Application Timing:	PRE	0-4"W-1	4-8"W	0-4"W-2	8-12"W	12-16"W	16-20"W	0-4"RG
Applic. Placement:	BROSIO	BROFOL	BROFOL	BROFOL	BROFOL	BROFOL	BROFOL	BROFOL
Air Temp., Unit:	80 F	81 F	91 F		87 F	95 F	88 F	
% Relative Humidity:	82	66	55		78	50	50	
Wind Velocity, Unit:	5-7 MPH	3-7 MPH	1-4 MPH		1-4 MPH	1-4 MPH	3-5 MPH	
Dew Presence (Y/N):	N	N	N		N	N	N	
Soil Temp., Unit:	73 F	73 F	85 F		83 F	84 F	82 F	
Soil Moisture:	NORMAL	ABONOR	NORMAL		BELNOR	NORMAL	NORMAL	
% Cloud Cover:	30	20	15		15	10	20	

## CROP STAGE AT EACH APPLICATION

	A	B	C	D	E	F	G	H
Crop 1 Code, Stage:	ZEAMX NA	ZEAMX V2	ZEAMX V5-6	ZEAMX NA	ZEAMX V5-V6	ZEAMX V7-V8	ZEAMX V7-V8	ZEAMX NA
Height, Unit:	NA NA	4-6 IN	12-15 IN	NA NA	13-17 IN	19-25 IN	20-28 IN	NA NA

## WEED STAGE AT EACH APPLICATION

	A	B	C	D	E	F	G	H
Weed 1 Code:	SETFA	SETFA	SETFA	SETFA	SETFA	SETFA	SETFA	SETFA
Stage (leaves):		3-4	4-6		4-8	5-9	5-9	
Height (inches):		1-3	4-6		6-8	10-19	10-23	
Density:		Medium	Low		Low	Low	Low	
Weed 2 Code:	AMATA	AMATA	AMATA	AMATA	AMATA	AMATA	AMATA	AMATA
Stage (leaves):		4-6	4-6		6-12	10-16	10-16	
Height (inches):		1-3	1-3		6-13	7-20	7-24	
Density:		Medium	Medium		High	High	High	
Weed 3 Code:	IPOSS	IPOSS	IPOSS	IPOSS	IPOSS	IPOSS	IPOSS	IPOSS
Stage (leaves):		0-3	0-8		0-8	4-10	4-10	
Height (inches):		1-4	2-6		2-7	3-10	3-11	
Density:		Medium	Low		Low	Low	Low	

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Weed 4 Code:	ABUTH	ABUTH	ABUTH	ABUTH	ABUTH	ABUTH	ABUTH	ABUTH
Stage (leaves):		0-3	2-4		2-6	4-8	4-8	
Height (inches):		1-3	4-7		4-8	6-10	6-12	
Density:		Medium	Low		Low	Low	Low	
Weed 5 Code:	AMBEL	AMBEL	AMBEL	AMBEL	AMBEL	AMBEL	AMBEL	AMBEL
Stage (leaves):		2-6	4-8		6-10	8-14	8-14	
Height (inches):		1-4	6-8		7-13	10-17	10-23	
Density:		High	High		High	High	High	
Weed 6 Code:	CYPES	CYPES	CYPES	CYPES	CYPES	CYPES	CYPES	CYPES
Stage (leaves):		4-6	4-8		4-8	5-10	5-10	
Height (inches):		2-5	3-9		4-10	6-14	6-15	
Density:		Medium	Medium		Medium	Medium	Medium	

## APPLICATION EQUIPMENT

	A	B	C	D	E	F	G	H
Appl. Equipment:	CO2 sprayer	CO2 sprayer	CO2 sprayer	CO2 sprayer	CO2 sprayer	CO2 sprayer	CO2 sprayer	CO2 sprayer
Operating Pressure:	40 PSI	40 PSI	40 PSI	40 PSI	40 PSI	40 PSI	40 PSI	40 PSI
Nozzle Type:	Flat fan	Flat fan	Flat fan	Flat fan	Flat fan	Flat fan	Flat fan	Flat fan
Nozzle Size:	8003	8002	8002	8002	8002	8002	8002	8002
Boom Length, Unit:	7.5 FT	7.5 FT	7.5 FT	7.5 FT	7.5 FT	7.5 FT	7.5 FT	7.5 FT
Spray Volume, Unit:	15 GPA	15 GPA	15 GPA	15 GPA	15 GPA	15 GPA	15 GPA	15 GPA

## NOTES:

Applications "D" and "H" were not needed, not applied.  
Harvested 9-30-04, (2) 30 inch rows x 17 ft.

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

ZEAMX	SETFA	AMATA	IPOSS	ABUTH	AMBEL	CYPES
Yield	Control	Control	Control	Control	Control	Control
bu/A	Percent	Percent	Percent	Percent	Percent	Percent
	7-6-04	7-6-04	7-6-04	7-6-04	7-6-04	7-6-04
	56 DAP	56 DAP	56 DAP	56 DAP	56 DAP	56 DAP

Trt No.	Treatment Name	Form Conc	Form Type	Rate Unit	Prod Rate	Prod Unit	Grow Stg	Appl Code	ZEAMX Yield bu/A	SETFA Control Percent 7-6-04 56 DAP	AMATA Control Percent 7-6-04 56 DAP	IPOSS Control Percent 7-6-04 56 DAP	ABUTH Control Percent 7-6-04 56 DAP	AMBEL Control Percent 7-6-04 56 DAP	CYPES Control Percent 7-6-04 56 DAP
1	NONTREATED								96	0	0	0	0	0	0
2	HANDWEED								227	99	99	99	99	99	99
3	DEGREE XTRA	4 L		1.5 LB A/A	1.5 QT/A	PRE	A		230	99	99	86	99	99	31
3	ROUNDUP W-MAX	4.5 SL		0.77 LB AE/A	22 FL OZ/A	0-4"W-2	D								
4	DEGREE XTRA	4 L		3 LB A/A	3 QT/A	PRE	A		226	99	99	89	99	99	50
4	ROUNDUP W-MAX	4.5 SL		0.77 LB AE/A	22 FL OZ/A	0-4"W-2	D								
5	DEGREE XTRA	4 L		1.5 LB A/A	1.5 QT/A	0-4"W-1	B		232	99	99	89	99	99	74
5	ROUNDUP W-MAX	4.5 SL		0.77 LB AE/A	22 FL OZ/A	0-4"W-1	B								
6	DEGREE XTRA	4 L		3 LB A/A	3 QT/A	0-4"W-1	B		235	99	99	94	99	99	88
6	ROUNDUP W-MAX	4.5 SL		0.77 LB AE/A	22 FL OZ/A	0-4"W-1	B								
7	ROUNDUP W-MAX	4.5 SL		0.77 LB AE/A	22 FL OZ/A	0-4"W-1	B		185	99	68	86	83	83	68
7	ROUNDUP W-MAX	4.5 SL		0.77 LB AE/A	22 FL OZ/A	0-4"RG	H								
8	ROUNDUP W-MAX	4.5 SL		0.77 LB AE/A	22 FL OZ/A	0-4"W-1	B		218	99	78	89	88	88	78
9	ROUNDUP W-MAX	4.5 SL		0.77 LB AE/A	22 FL OZ/A	4-8"W	C		205	99	99	96	99	99	91
10	ROUNDUP W-MAX	4.5 SL		0.77 LB AE/A	22 FL OZ/A	8-12"W	E		218	99	99	94	99	99	89
11	ROUNDUP W-MAX	4.5 SL		0.77 LB AE/A	22 FL OZ/A	12-16"W	F		208	99	95	92	97	97	86
12	ROUNDUP W-MAX	4.5 SL		0.77 LB AE/A	22 FL OZ/A	16-20"W	G		199	99	88	86	90	90	86
13	ROUNDUP W-MAX	4.5 SL		1.12 LB AE/A	32 FL OZ/A	16-20"W	G		217	99	90	90	89	90	86
LSD (P=.05)									31.2	0.2	4.1	3.4	1.9	1.7	4.1
Replicate F									1.958	1.000	0.541	10.388	2.217	1.726	0.235
Replicate Prob(F)									0.1378	0.4040	0.6571	0.0001	0.1029	0.1791	0.8713
Treatment F									11.092	156751.000	371.411	456.329	1668.975	2099.456	391.572
Treatment Prob(F)									0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001

Trial Comments

1. Protocol: Pioneer.
2. Ratings: WC 56 DAP.
3. Yield if possible.
4. DAP = Days after planting.
5. Harvested 9-30-04, (2) 30 inch rows x 17 ft.