

Comparison of Fall Applied Herbicides in Corn.

02-8A

OBJECTIVE: Evaluate the performance of various fall applied herbicide programs in corn.

SUMMARY: This study was designed to evaluate the ability of fall herbicide applications to provide a clean seedbed for planting in the spring. Due to excessive rainfall in May, corn planting was delayed until May 27. This delay in planting most likely reduced control of summer annual weeds by the fall herbicide treatments. All of the fall applied herbicide treatments provided complete control of common chickweed and henbit and at least 87% control of dandelion by April 11. Treatments that included Basis, Express, or Roundup UltraMax controlled at least 90% of wild garlic by April. Little barley control at planting was highly variable but tended to be greatest from treatments that included Roundup Ultra Max or Gramoxone Max. There was no difference in little barley control between fall and spring applications of Princep plus Gramoxone Max. Control of the summer annual weeds (giant foxtail, Pennsylvania smartweed, and common ragweed) at planting was also highly variable. Overall, the spring application of Princep plus Gramoxone Max provided the greatest control of summer annual weeds. Winter annual weed control had little effect on corn yield as most herbicide treated plots yielded similar to the nontreated plots

HERBICIDES	WEEDS	CROP
BASIS 75 WG	barley, little	corn, field
EXPRESS 75 WG	chickweed, common	
GRAMOXONE MAX 3 SL	dandelion	
PRINCEP 90 WG	foxtail, Carolina	
PYTHON 80 WG	foxtail, giant	
ROUNDUP ULTRA MAX 3.7 SL	garlic, wild	
SALVO 5 EC	henbit	
SENCOR 75 WG	ragweed, common	
SHOTGUN 3.25 L	smartweed, Pennsylvania	
TOUCHDOWN 3 SL		
VALOR 51 WG		

Bryan Young

PLANT, SOIL AND GENERAL AGRICULTURE DEPARTMENT

SOUTHERN ILLINOIS UNIVERSITY

Comparison of Fall Applied Herbicides in Corn.

Project Code: 02-8A Location: Belleville Research Center

Investigator: Bryan Young, Assistant Professor, Southern Illinois University

City State Zip Country: Belleville IL 62221 USA
 Trial Status: Final Updated: 10-24-02

Objective:

Evaluate the performance of various fall applied herbicide programs
 in corn.

Weed Code	Common Name	Scientific Name
1. TAROF	dandelion	Taraxacum officinale Weber in Wiggers
2. ALLVI	garlic, wild	Allium vineale L.
3. LAMAM	henbit	Lamium amplexicaule L.
4. STEME	chickweed, common	Stellaria media (L.) Vill.
5. HORPU	barley, little	Hordeum pusillum Nutt.
6. ALOCA	foxtail, Carolina	Alopecurus carolinianus Walt.
7. SETFA	foxtail, giant	Setaria faberi Herrm.
8. POLPY	smartweed, Pennsylvania	Polygonum pensylvanicum L.
9. AMBEL	ragweed, common	Ambrosia artemisiifolia L.

Crop 1:	ZEAMX	corn, field	Variety:	Pioneer 33P69LL
Planting Method:	Seeded		Planting Date:	5-27-02
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:	No-Till		Study Design:	Randomized complete block			
Previous Crop, Year:	GLXMA, 2001						

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

Soil Name:	Weir	% OM:	1.9	pH:	6.1	CEC:	11
Texture:	Silt loam	Fert. Level:	P1: 76 LB/A, K: 273 LB/A				

APPLICATION DESCRIPTION

	A	B
Application Date:	11-14-01	4-11-02
Time of Day:	15:00	10:00
Application Method:	Spray	Spray
Application Timing:	FALL	30EPP
Applic. Placement:	BROFOL	BROFOL
Air Temp., Unit:	65 F	72 F
% Relative Humidity:	60	38
Wind Velocity, Unit:	3 MPH	3 MPH
Soil Moisture:	NORMAL	ABONOR

CROP STAGE AT EACH APPLICATION

	A		B	
Crop 1 Code, Stage:	ZEAMX	NA	ZEAMX	NA
Height, Unit:	NA	NA	NA	NA

WEED STAGE AT EACH APPLICATION

	A	B
Weed 1 Code:	TAROF	TAROF
Stage(leaves):	10+	10+
Height(inches):	2-4	4-6
Density:	Medium	Medium
Weed 2 Code:	ALLVI	ALLVI
Stage(leaves):	3-4	3-4
Height(inches):	4-8	6-10
Density:	Medium	Medium
Weed 3 Code:	LAMAM	LAMAM
Stage(leaves):	10+	10+
Height(inches):	0-2	4-6
Density:	Medium	Medium

Weed 4 Code:	STEME	STEME
Stage(leaves):	10+	10+
Height(inches):	0-2	3-4
Density:	Medium	Medium

Weed 5 Code:	HORPU	HORPU
Stage(leaves):	5-10	5-10
Height(inches):	1-4	3-6
Density:	Medium	Low

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:	7.5 FT	7.5 FT
Spray Volume, Unit:	20 GPA	20 GPA

NOTES:

Harvested Oct-12-02, (2) 30 inch rows by 24 ft.

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									TAROF		ALLVI		LAMAM		STEME		HORPU		ALOCA		SETFA	
									ZEAMX													
									Yield	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	
									bu/A	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	
									10-12-02	12-12-01	4-11-02	12-12-01	4-11-02	12-12-01	4-11-02	12-12-01	4-11-02	4-11-02	4-11-02	5-27-02	5-27-02	5-27-02
									28 DA-A	148 DA-A	28 DA-A	148 DA-A	28 DA-A	148 DA-A	28 DA-A	148 DA-A	148 DA-A	148 DA-A	0 DAP	0 DAP	0 DAP	
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Prod Rate	Prod Unit	Grow Stg	Appl Code														
1	NONTREATED								165	0	0	0	0	0	0	0	0	0	0	0	88	
2	TOUCHDOWN	3 SL		0.75 LB A/A	32 OZ/A	FALL	A		169	0	100	0	87	100	100	100	100	100	97	93	68	
3	ROUNDUP ULTRA MAX	3.7 SL		0.75 LB AE/A	26 OZ/A	FALL	A		157	0	100	0	90	100	100	97	100	100	98	93	65	
4	ROUNDUP ULTRA MAX	3.7 SL		0.58 LB AE/A	20 OZ/A	FALL	A		152	50	100	50	97	100	100	100	100	100	98	98	72	
4	SALVO	5 EC		0.5 LB AE/A	0.8 PT/A	FALL	A															
5	PRINCEP	90 WG		1.0 LB A/A	1.11 LB/A	FALL	A		184	0	93	0	57	0	100	0	100	78	60	89	50	
6	GRAMOXONE MAX	3 SL		0.312 LB A/A	13.3 OZ/A	FALL	A		160	8	87	83	83	93	100	100	100	97	73	81	33	
6	ACTIVATOR 90	100 LIQ		0.25 % V/V	0.25 %V/V	FALL	A															
7	PRINCEP	90 WG		1.0 LB A/A	1.11 LB/A	FALL	A		163	100	93	93	92	100	100	100	100	100	98	99	42	
7	GRAMOXONE MAX	3 SL		0.312 LB A/A	13.3 OZ/A	FALL	A															
7	ACTIVATOR 90	100 LIQ		0.25 % V/V	0.25 %V/V	FALL	A															
8	SENCOR	75 WG		0.25 LB A/A	5.33 OZ/A	FALL	A		178	50	93	50	80	100	100	100	100	48	17	54	61	
8	SALVO	5 EC		0.5 LB AE/A	0.8 PT/A	FALL	A															
8	HERBIMAX	100 LIQ		1.0 % V/V	1 %V/V	FALL	A															
9	SHOTGUN	3.25 L		1.22 LB A/A	3 PT/A	FALL	A		174	67	93	50	88	100	100	90	100	92	96	97	45	
9	HERBIMAX	100 LIQ		1.0 QT/A	1 QT/A	FALL	A															
10	BASIS	75 WG		0.0234 LB A/A	0.5 OZ/A	FALL	A		173	0	100	50	98	100	100	93	100	100	98	99	33	
10	SHOTGUN	3.25 L		1.22 LB A/A	3 PT/A	FALL	A															
10	HERBIMAX	100 LIQ		1.0 QT/A	1 QT/A	FALL	A															
11	BASIS	75 WG		0.0234 LB A/A	0.5 OZ/A	FALL	A		164	100	100	50	90	100	100	93	100	82	55	97	48	
11	SALVO	5 EC		0.39 LB AE/A	10 OZ/A	FALL	A															
11	HERBIMAX	100 LIQ		1.0 QT/A	1 QT/A	FALL	A															
12	SENCOR	75 WG		0.1875 LB A/A	4 OZ/A	FALL	A		174	0	93	50	53	100	100	87	100	55	49	92	52	
12	PRINCEP	90 WG		1.0 LB A/A	1.11 LB/A	FALL	A															
12	SALVO	5 EC		0.39 LB AE/A	10 OZ/A	FALL	A															
12	HERBIMAX	100 LIQ		1.0 QT/A	1 QT/A	FALL	A															
13	PYTHON	80 WG		0.05 LB A/A	1 OZ/A	FALL	A		165	0	100	50	17	87	100	87	100	33	15	61	75	
13	SALVO	5 EC		0.39 LB AE/A	10 OZ/A	FALL	A															
13	HERBIMAX	100 LIQ		1.0 QT/A	1 QT/A	FALL	A															

Weed Code	TAROF	TAROF	ALLVI	ALLVI	LAMAM	LAMAM	STEME	STEME	HORPU	HORPU	ALOCA	SETFA
Crop Code	ZEAMX											
Rating Data Type	Yield	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control
Rating Unit	bu/A	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent
Rating Date	10-12-02	12-12-01	4-11-02	12-12-01	4-11-02	12-12-01	4-11-02	12-12-01	4-11-02	4-11-02	5-27-02	5-27-02
Trt-Eval Interval		28 DA-A	148 DA-A	28 DA-A	148 DA-A	28 DA-A	148 DA-A	28 DA-A	148 DA-A	148 DA-A	0 DAP	0 DAP

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Prod Rate	Prod Unit	Grow Stg	Appl Code													
14	BASIS	75	WG	0.0234	LB A/A	0.5	OZ/A	FALL	A	161	67	100	67	93	93	100	93	100	81	57	98	63
14	SALVO	5	EC	0.5	LB AE/A	0.8	PT/A	FALL	A													
14	HERBIMAX	100	LIQ	1.0	% V/V	1	%V/V	FALL	A													
15	BASIS	75	WG	0.0155	LB A/A	0.33	OZ/A	FALL	A	160	0	100	50	90	100	100	100	100	93	86	99	23
15	PRINCEP	90	WG	1.0	LB A/A	1.11	LB/A	FALL	A													
15	SALVO	5	EC	0.5	LB AE/A	0.8	PT/A	FALL	A													
15	HERBIMAX	100	LIQ	1.0	% V/V	1	%V/V	FALL	A													
16	BASIS	75	WG	0.0155	LB A/A	0.33	OZ/A	FALL	A	164	100	100	50	85	100	100	100	100	93	87	99	49
16	PRINCEP	90	WG	0.45	LB A/A	0.5	LB/A	FALL	A													
16	SALVO	5	EC	0.5	LB AE/A	0.8	PT/A	FALL	A													
16	HERBIMAX	100	LIQ	1.0	% V/V	1	%V/V	FALL	A													
17	EXPRESS	75	WG	0.0155	LB A/A	0.33	OZ/A	FALL	A	173	50	100	50	90	87	100	87	100	57	54	86	33
17	PRINCEP	90	WG	1.0	LB A/A	1.11	LB/A	FALL	A													
17	SALVO	5	EC	0.5	LB AE/A	0.8	PT/A	FALL	A													
17	HERBIMAX	100	LIQ	1.0	% V/V	1	%V/V	FALL	A													
18	VALOR	51	WG	0.063	LB A/A	2	OZ/A	FALL	A	199	100	100	50	28	87	100	100	100	32	33	42	82
18	SALVO	5	EC	0.5	LB AE/A	0.8	PT/A	FALL	A													
18	HERBIMAX	100	LIQ	1.0	% V/V	1	%V/V	FALL	A													
19	VALOR	51	WG	0.078	LB A/A	2.45	OZ/A	FALL	A	182	50	97	50	80	90	100	100	100	42	65	40	77
19	SALVO	5	EC	0.5	LB AE/A	0.8	PT/A	FALL	A													
19	HERBIMAX	100	LIQ	1.0	% V/V	1	%V/V	FALL	A													
20	VALOR	51	WG	0.063	LB A/A	2	OZ/A	FALL	A	188	100	100	50	88	87	100	100	100	93	86	74	65
20	PRINCEP	90	WG	1.0	LB A/A	1.11	LB/A	FALL	A													
20	SALVO	5	EC	0.5	LB AE/A	0.8	PT/A	FALL	A													
20	HERBIMAX	100	LIQ	1.0	% V/V	1	%V/V	FALL	A													
21	PRINCEP	90	WG	1.0	LB A/A	1.11	LB/A	30EPP	B	166										85	98	81
21	GRAMOXONE MAX	3	SL	0.312	LB A/A	13.3	OZ/A	30EPP	B													
21	ACTIVATOR 90	100	LIQ	0.25	% V/V	0.25	%V/V	30EPP	B													
LSD (P=.05)										23.0	15.2	8.7	10.8	32.4	9.8	0.0	11.0	0.0	44.7	41.2	22.9	28.2
Replicate F										3.503	3.065	0.180	1.896	2.252	3.743	0.000	1.822	0.000	0.375	0.988	0.520	1.630
Replicate Prob(F)										0.0396	0.0584	0.8361	0.1641	0.1190	0.0328	1.0000	0.1756	1.0000	0.6901	0.3813	0.5983	0.2086
Treatment F										1.990	62.316	52.729	46.550	6.236	76.636	0.000	60.031	0.000	3.592	4.514	10.958	3.496
Treatment Prob(F)										0.0317	0.0001	0.0001	0.0001	0.0001	0.0001	1.0000	0.0001	1.0000	0.0004	0.0001	0.0001	0.0004

Weed Code POLPY AMBEL
 Crop Code
 Rating Data Type Control Control
 Rating Unit Percent Percent
 Rating Date 5-27-02 5-27-02
 Trt-Eval Interval 0 DAP 0 DAP

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Prod Rate	Prod Unit	Grow Stg	Appl Code		
1	NONTREATED									63	63
2	TOUCHDOWN	3	SL	0.75	LB A/A	32	OZ/A	FALL	A	8	53
3	ROUNDUP ULTRA MAX	3.7	SL	0.75	LB AE/A	26	OZ/A	FALL	A	23	23
4	ROUNDUP ULTRA MAX	3.7	SL	0.58	LB AE/A	20	OZ/A	FALL	A	56	43
4	SALVO	5	EC	0.5	LB AE/A	0.8	PT/A	FALL	A		
5	PRINCEP	90	WG	1.0	LB A/A	1.11	LB/A	FALL	A	69	80
6	GRAMOXONE MAX	3	SL	0.312	LB A/A	13.3	OZ/A	FALL	A	67	53
6	ACTIVATOR 90	100	LIQ	0.25	% V/V	0.25	%V/V	FALL	A		
7	PRINCEP	90	WG	1.0	LB A/A	1.11	LB/A	FALL	A	96	63
7	GRAMOXONE MAX	3	SL	0.312	LB A/A	13.3	OZ/A	FALL	A		
7	ACTIVATOR 90	100	LIQ	0.25	% V/V	0.25	%V/V	FALL	A		
8	SENCOR	75	WG	0.25	LB A/A	5.33	OZ/A	FALL	A	97	62
8	SALVO	5	EC	0.5	LB AE/A	0.8	PT/A	FALL	A		
8	HERBIMAX	100	LIQ	1.0	% V/V	1	%V/V	FALL	A		
9	SHOTGUN	3.25	L	1.22	LB A/A	3	PT/A	FALL	A	88	60
9	HERBIMAX	100	LIQ	1.0	QT/A	1	QT/A	FALL	A		
10	BASIS	75	WG	0.0234	LB A/A	0.5	OZ/A	FALL	A	68	57
10	SHOTGUN	3.25	L	1.22	LB A/A	3	PT/A	FALL	A		
10	HERBIMAX	100	LIQ	1.0	QT/A	1	QT/A	FALL	A		
11	BASIS	75	WG	0.0234	LB A/A	0.5	OZ/A	FALL	A	94	40
11	SALVO	5	EC	0.39	LB AE/A	10	OZ/A	FALL	A		
11	HERBIMAX	100	LIQ	1.0	QT/A	1	QT/A	FALL	A		
12	SENCOR	75	WG	0.1875	LB A/A	4	OZ/A	FALL	A	95	78
12	PRINCEP	90	WG	1.0	LB A/A	1.11	LB/A	FALL	A		
12	SALVO	5	EC	0.39	LB AE/A	10	OZ/A	FALL	A		
12	HERBIMAX	100	LIQ	1.0	QT/A	1	QT/A	FALL	A		
13	PYTHON	80	WG	0.05	LB A/A	1	OZ/A	FALL	A	45	75
13	SALVO	5	EC	0.39	LB AE/A	10	OZ/A	FALL	A		
13	HERBIMAX	100	LIQ	1.0	QT/A	1	QT/A	FALL	A		
14	BASIS	75	WG	0.0234	LB A/A	0.5	OZ/A	FALL	A	99	32
14	SALVO	5	EC	0.5	LB AE/A	0.8	PT/A	FALL	A		
14	HERBIMAX	100	LIQ	1.0	% V/V	1	%V/V	FALL	A		

Weed Code	POLPY	AMBEL
Crop Code		
Rating Data Type	Control	Control
Rating Unit	Percent	Percent
Rating Date	5-27-02	5-27-02
Trt-Eval Interval	0 DAP	0 DAP

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Prod Rate	Prod Unit	Grow Stg	Appl Code		
15	BASIS	75	WG	0.0155	LB A/A	0.33	OZ/A	FALL	A	51	45
15	PRINCEP	90	WG	1.0	LB A/A	1.11	LB/A	FALL	A		
15	SALVO	5	EC	0.5	LB AE/A	0.8	PT/A	FALL	A		
15	HERBIMAX	100	LIQ	1.0	% V/V	1	%V/V	FALL	A		
16	BASIS	75	WG	0.0155	LB A/A	0.33	OZ/A	FALL	A	69	47
16	PRINCEP	90	WG	0.45	LB A/A	0.5	LB/A	FALL	A		
16	SALVO	5	EC	0.5	LB AE/A	0.8	PT/A	FALL	A		
16	HERBIMAX	100	LIQ	1.0	% V/V	1	%V/V	FALL	A		
17	EXPRESS	75	WG	0.0155	LB A/A	0.33	OZ/A	FALL	A	71	68
17	PRINCEP	90	WG	1.0	LB A/A	1.11	LB/A	FALL	A		
17	SALVO	5	EC	0.5	LB AE/A	0.8	PT/A	FALL	A		
17	HERBIMAX	100	LIQ	1.0	% V/V	1	%V/V	FALL	A		
18	VALOR	51	WG	0.063	LB A/A	2	OZ/A	FALL	A	73	86
18	SALVO	5	EC	0.5	LB AE/A	0.8	PT/A	FALL	A		
18	HERBIMAX	100	LIQ	1.0	% V/V	1	%V/V	FALL	A		
19	VALOR	51	WG	0.078	LB A/A	2.45	OZ/A	FALL	A	81	80
19	SALVO	5	EC	0.5	LB AE/A	0.8	PT/A	FALL	A		
19	HERBIMAX	100	LIQ	1.0	% V/V	1	%V/V	FALL	A		
20	VALOR	51	WG	0.063	LB A/A	2	OZ/A	FALL	A	93	93
20	PRINCEP	90	WG	1.0	LB A/A	1.11	LB/A	FALL	A		
20	SALVO	5	EC	0.5	LB AE/A	0.8	PT/A	FALL	A		
20	HERBIMAX	100	LIQ	1.0	% V/V	1	%V/V	FALL	A		
21	PRINCEP	90	WG	1.0	LB A/A	1.11	LB/A	30EPP	B	99	92
21	GRAMOXONE MAX	3	SL	0.312	LB A/A	13.3	OZ/A	30EPP	B		
21	ACTIVATOR 90	100	LIQ	0.25	% V/V	0.25	%V/V	30EPP	B		
LSD (P=.05)										42.9	31.1
Replicate F										1.889	1.518
Replicate Prob(F)										0.1645	0.2316
Treatment F										2.760	3.169
Treatment Prob(F)										0.0031	0.0009

Comparison of Fall Applied Herbicides in Corn.

Project Code: 02-8A

Location: Belleville Research Center

Trial Comments

1. Protocol: Monsanto (3+4); Syngenta (2, 5-7 and 21); UAP (8-13); DuPont (14-17); Valent (18-20).
2. Blanket application of Roundup Ultra Max + Bicep II Magnum at 0.75 lbae/A + 2.1 qt/A applied PRE to all plots including the nontreated on 5-29-02.
3. DA-A = days after FALL application. Ratings on 4-11-02, 148 DA-A, are at 30EPP application. DAP = days after planting. 0 DAP = at planting.
4. Weed control in the nontreated plots at plantings was due to competition from HORPU and ALOCA.