Ohio State University
Horticulture and Crop Science

RESIDUAL WEED CONTROL IN NO-TILL SOYBEAN

Trial ID: 07NTS4 Study Dir.: Anthony F. Dobbels
Location: WESTERN BRANCH F-7 Investigator: Dr. Mark M. Loux

GENERAL TRIAL INFORMATION

Study Director: Anthony F. Dobbels
Affiliation: OSU
Investigator: Dr. Mark M. Loux
Affiliation: OSU

TRIAL LOCATION

Trial Status: Complete
State/Prov.: Ohio
Initiation Date: Apr/01/2007
Country: Clark

Conducted Under GLP (Y/N): N **Conducted Under GEP (Y/N):** N

CROP AND WEED DESCRIPTION

Weed Code	Common Name	Scientific Name
1. STEME	Common chickweed	Stellaria media
2. LAMPU	Purple deadnettel	Lamium purpureum
3. TAROF	Common dandelion	Taraxacum officinale
4. ERICA	Horseweed	Conyza canadensis
5. AMBTR	Giant ragweed	Ambrosia trifida
6. SETFA	Giant foxtail	Setaria faberi
7. CHEAL	Common lambsquarters	Chenopodium album
8. POLPY	Pennsylvania smartweed	Polygonum pensylvanicum
9. AMBEL	Common ragweed	Ambrosia artemisiifolia

Crop 1: GLXMA SOYBEAN **Variety:** ASGROW AG 3705
Planting Date: May/03/2007 **Planting Method:** KINZE 2000
Rate: 175000 SEED/A **Depth:** 0.5 IN
Row Spacing: 15 IN **Seed Bed:** NO-TILL

SITE AND DESIGN

Plot Width, Unit: 6.67 FT **Plot Length, Unit:** 30 FT **Reps:** 3
Tillage Type: NO-TILL **Study Design:** RANDOMIZED COMPLETE BLOCK

SOIL DESCRIPTION

% OM: 1.8 **Texture:** SILT LOAM
pH: 6.1 **Soil Name:** CROSBY
CEC: 15.8

Overall Moisture Conditions: POOR

APPLICATION DESCRIPTION

	A	B	C
Application Date:	Apr/20/2007	Jun/18/2007	Jul/02/2007
Time of Day:	9:00 A.M.	9:00 A.M.	9:00 A.M.
Application Method:	SPRAY	SPRAY	SPRAY
Application Timing:	14 EPP	POST	LPO
Applic. Placement:	BROADCAST	BROADCAST	BROADCAST
Air Temp., Unit:	62 F	78 F	64 F
% Relative Humidity:	52	73	63
Wind Velocity, Unit:	3 W	3 W	10 E
Soil Temp., Unit:	44 F	70 F	62 F
Soil Moisture:	DRY MOIST	DRY MOIST	DRY MOIST
% Cloud Cover:	0	0	5

CROP STAGE AT EACH APPLICATION

	A	B	C
Crop 1 Code, Stage:	GLXMA .	GLXMA .	GLXMA .
Stage Scale:	.	3 TRIFOLI	5 TRIFOLI
Height, Unit:	0. .	8 IN	14 IN

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WEED STAGE AT EACH APPLICATION

	A	B	C
Weed 1 Code, Stage:	STEME 8-12"	STEME .	STEME .
Stage Scale:	>12 LVS	.	.
Density, Unit:	20 M2	. .	. .
Weed 2 Code, Stage:	LAMPU 3-4"	LAMPU .	LAMPU .
Stage Scale:	>12 LVS	.	.
Density, Unit:	1.33 M2	. .	. .
Weed 3 Code, Stage:	TAROF 6-8"	TAROF .	TAROF .
Stage Scale:	>12 LVS	.	.
Density, Unit:	2.66 M2	. .	. .
Weed 4 Code, Stage:	ERICA 2-3" DIA	ERICA 6-14"	ERICA .
Stage Scale:	>12	>12 LVS	.
Density, Unit:	1 M2	1 M2	. .
Weed 5 Code, Stage:	AMBTR .	AMBTR 12-35"	AMBTR .
Stage Scale:	.	>12 LVS	.
Density, Unit:	. .	6.66 M2	. .
Weed 6 Code, Stage:	SETFA .	SETFA 2-24"	SETFA .
Stage Scale:	.	6 LVS	.
Density, Unit:	. .	48 M2	. .
Weed 7 Code, Stage:	CHEAL .	CHEAL 1-13"	CHEAL 1-2"
Stage Scale:	.	>12 LVS	8 LVS
Density, Unit:	. .	6 M2	6 M2
Weed 8 Code, Stage:	POLPY .	POLPY 1-10"	POLPY .
Stage Scale:	.	>12 LVS	.
Density, Unit:	. .	2 M2	. .
Weed 9 Code, Stage:	AMBEL .	AMBEL 2-8"	AMBEL .
Stage Scale:	.	>12 LVS	.
Density, Unit:	. .	1 M2	. .

APPLICATION EQUIPMENT

	A	B	C
Appl. Equipment:	BACKPACK	BACKPACK	BACKPACK
Operating Pressure:	50	50	50
Nozzle Type:	DG	DG	DG
Nozzle Size:	11002	11002	11002
Nozzle Spacing, Unit:	18 IN	18 IN	18 IN
Ground Speed, Unit:	3 MPH	3 MPH	3 MPH
Carrier:	WATER	WATER	WATER
Spray Volume, Unit:	20 GPA	20 GPA	20 GPA
Propellant:	CO2	CO2	CO2

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Location: WESTERN BRANCH F-7 Investigator: Dr. Mark M. Loux

Weed Code												
Crop Code							GLXMA		GLXMA		GLXMA	
Rating Data Type							YIELD		MOISTURE		YIELD	
Rating Unit							LBS		PERCENT		BU	
Rating Date							Oct/08/2007		Oct/08/2007		Oct/08/2007	
Trt-Eval Interval							HARVEST		HARVEST		HARVEST	
ARM Action Codes											TY1	
# Subsamples, Dec.							1		1		1	
Trt No.	Treatment Name	Rate	Rate Unit	Product Rate	Product Rate Unit	Appl Code	29		30		31	
1	AUTHORITY FIRST	0.14	lb ai/a	3.2	oz/a	A	16.2	abc	17.8	a	59.3	abc
1	ROUNDUP ORIGINAL MAX	0.77	lb ae/a	22	oz/a							
1	2,4-D	0.5	lb ai/a	1	pt/a							
1	AMS	2.5	% v/v	2	qt/a							
1	ROUNDUP ORIGINAL MAX	0.77	lb ae/a	22	oz/a	B						
1	AMS	2.5	% v/v	2	qt/a							
2	AUTHORITY MTZ	0.28	lb ai/a	10	oz/a	A	18.1	a	17.1	a	66.6	a
2	ROUNDUP ORIGINAL MAX	0.77	lb ae/a	22	oz/a							
2	2,4-D	0.5	lb ai/a	1	pt/a							
2	AMS	2.5	% v/v	2	qt/a							
2	ROUNDUP ORIGINAL MAX	0.77	lb ae/a	22	oz/a	B						
2	AMS	2.5	% v/v	2	qt/a							
3	F7119	0.15	lb ai/a	4.8	oz/a	A	15.6	bc	17.0	a	57.8	bc
3	ROUNDUP ORIGINAL MAX	0.77	lb ae/a	22	oz/a							
3	2,4-D	0.5	lb ai/a	1	pt/a							
3	AMS	2.5	% v/v	2	qt/a							
3	ROUNDUP ORIGINAL MAX	0.77	lb ae/a	22	oz/a	B						
3	AMS	2.5	% v/v	2	qt/a							
4	SONIC	0.131	lb ai/a	3	oz/a	A	17.7	ab	17.1	a	65.2	ab
4	DURANGO	0.75	lb ae/a	24	oz/a							
4	2,4-D	0.5	lb ai/a	1	pt/a							
4	AMS	2.5	% v/v	2	qt/a							
4	DURANGO	0.75	lb ae/a	24	oz/a	B						
4	AMS	2.5	% v/v	2	qt/a							
5	FIRSTRATE	0.0158	lb ai/a	0.3	oz/a	A	15.9	bc	17.6	a	58.3	bc
5	DURANGO	0.75	lb ae/a	24	oz/a							
5	2,4-D	0.5	lb ai/a	1	pt/a							
5	AMS	2.5	% v/v	2	qt/a							
5	DURANGO	0.75	lb ae/a	24	oz/a	B						
5	AMS	2.5	% v/v	2	qt/a							
6	PYTHON	0.04	lb ai/a	0.8	oz/a	A	16.3	abc	17.3	a	59.9	abc
6	DURANGO	0.75	lb ae/a	24	oz/a							
6	2,4-D	0.5	lb ai/a	1	pt/a							
6	AMS	2.5	% v/v	2	qt/a							
6	DURANGO	0.75	lb ae/a	24	oz/a	B						
6	AMS	2.5	% v/v	2	qt/a							
7	DURANGO	0.75	lb ae/a	24	oz/a	A	15.9	bc	17.2	a	58.5	abc
7	2,4-D	0.5	lb ai/a	1	pt/a							
7	AMS	2.5	% v/v	2	qt/a							
7	DURANGO	0.75	lb ae/a	24	oz/a	B						
7	FIRSTRATE	0.0158	lb ai/a	0.3	oz/a	B						
7	AMS	2.5	% v/v	2	qt/a							

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Weed Code									
Crop Code							GLXMA	GLXMA	GLXMA
Rating Data Type							YIELD	MOISTURE	YIELD
Rating Unit							LBS	PERCENT	BU
Rating Date							Oct/08/2007	Oct/08/2007	Oct/08/2007
Trt-Eval Interval							HARVEST	HARVEST	HARVEST
ARM Action Codes									TY1
# Subsamples, Dec.							1	1	1

Trt No.	Treatment Name	Rate	Rate Unit	Product Rate	Product Rate Unit	Appl Code	29	30	31
8	VALOR XLT 3.5 OZ						17.0 abc	17.4 a	62.3 abc
8	VALOR SX	0.0653	lb ai/a	2.05	oz/a	A			
8	CLASSIC	0.0227	lb ai/a	1.45	oz/a				
8	DURANGO	0.75	lb ae/a	24	oz/a				
8	2,4-D	0.5	lb ai/a	1	pt/a				
8	AMS	2.5	% v/v	2	qt/a				
8	DURANGO	0.75	lb ae/a	24	oz/a	B			
8	AMS	2.5	% v/v	2	qt/a				
9	GANGSTER 1.8 OZ						16.4 abc	17.6 a	60.0 abc
9	GANGSTER V	0.048	lb ai/a	1.5	oz/a	A			
9	GANGSTER FR	0.0158	lb ai/a	0.3	oz/a				
9	DURANGO	0.75	lb ae/a	24	oz/a				
9	2,4-D	0.5	lb ai/a	1	pt/a				
9	AMS	2.5	% v/v	2	qt/a				
9	DURANGO	0.75	lb ae/a	24	oz/a	B			
9	AMS	2.5	% v/v	2	qt/a				
10	PREFIX	1.31	lb ai/a	2	pt/a	A	15.5 c	18.3 a	56.3 c
10	DURANGO	0.75	lb ae/a	24	oz/a				
10	2,4-D	0.5	lb ai/a	1	pt/a				
10	AMS	2.5	% v/v	2	qt/a				
10	DURANGO	0.75	lb ae/a	24	oz/a	B			
10	AMS	2.5	% v/v	2	qt/a				
11	CANOPY	0.164	lb ai/a	3.5	oz/a	A	15.4 c	17.1 a	56.9 c
11	DURANGO	0.75	lb ae/a	24	oz/a				
11	2,4-D	0.5	lb ai/a	1	pt/a				
11	AMS	2.5	% v/v	2	qt/a				
11	DURANGO	0.75	lb ae/a	24	oz/a	B			
11	AMS	2.5	% v/v	2	qt/a				
12	SCEPTER	0.123	lb ai/a	2.8	oz/a	A	16.4 abc	17.1 a	60.4 abc
12	DURANGO	0.75	lb ae/a	24	oz/a				
12	2,4-D	0.5	lb ai/a	1	pt/a				
12	AMS	2.5	% v/v	2	qt/a				
12	DURANGO	0.75	lb ae/a	24	oz/a	B			
12	AMS	2.5	% v/v	2	qt/a				
13	DOMAIN	0.375	lb ai/a	10	oz/a	A	16.1 abc	17.5 a	59.3 abc
13	DURANGO	0.75	lb ae/a	24	oz/a				
13	2,4-D	0.5	lb ai/a	1	pt/a				
13	AMS	2.5	% v/v	2	qt/a				
13	DURANGO	0.75	lb ae/a	24	oz/a	B			
13	AMS	2.5	% v/v	2	qt/a				
14	ROUNDUP ORIGINAL MAX	0.77	lb ae/a	12.3	oz/a	A	15.2 c	18.0 a	55.6 c
14	AMS	2.5	% v/v	2	qt/a				
14	ROUNDUP ORIGINAL MAX	0.77	lb ae/a	12.3	oz/a	B			
14	AMS	2.5	% v/v	2	qt/a				
15	DURANGO	0.75	lb ae/a	24	oz/a	A	16.2 abc	16.8 a	60.0 abc
15	2,4-D	0.5	lb ai/a	1	pt/a				
15	AMS	2.5	% v/v	2	qt/a				
15	GF-1280	0.75	lb ae/a	24	oz/a	B			
15	AMS	2.5	% v/v	2	qt/a				
15	GF-1280	0.75	lb ae/a	24	oz/a	C			
15	AMS	2.5	% v/v	2	qt/a				

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Trt No.	Treatment Name	Rate	Rate Unit	Product Rate	Product Rate Unit	Appl Code	29	30	31
	Weed Code								
	Crop Code						GLXMA	GLXMA	GLXMA
	Rating Data Type						YIELD	MOISTURE	YIELD
	Rating Unit						LBS	PERCENT	BU
	Rating Date						Oct/08/2007	Oct/08/2007	Oct/08/2007
	Trt-Eval Interval						HARVEST	HARVEST	HARVEST
	ARM Action Codes								TY1
	# Subsamples, Dec.						1	1	1
16	UTC						1.0 d	13.0 b	3.9 d
	LSD (P=.05)						2.16	1.71	8.25
	Standard Deviation						1.29	1.02	4.95
	CV						8.45	5.99	8.79
	Bartlett's X2						10.982	12.158	10.492
	P(Bartlett's X2)						0.687	0.594	0.725

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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Trial ID: 07NTS4 Study Dir.: Anthony F. Dobbels
Location: WESTERN BRANCH F-7 Investigator: Dr. Mark M. Loux

AOV For GLXMA YIELD LBS Oct/08/2007 HARVEST 1 (Data Column 29)

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F	Prob(F)
Total	47	782.039278			
Replicate	2	51.187801	25.593900	15.312	0.0001
Treatment	15	680.705987	45.380399	27.149	0.0001
Error	30	50.145490	1.671516		

AOV For GLXMA MOISTURE PERCENT Oct/08/2007 HARVEST 1 (Data Column 30)

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F	Prob(F)
Total	47	95.271707			
Replicate	2	1.897710	0.948855	0.904	0.4158
Treatment	15	61.878380	4.125225	3.929	0.0007
Error	30	31.495616	1.049854		

AOV For GLXMA YIELD BU Oct/08/2007 HARVEST TY1 1 (Data Column 31)

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F	Prob(F)
Total	47	10643.889393			
Replicate	2	730.063122	365.031561	14.916	0.0001
Treatment	15	9179.666233	611.977749	25.007	0.0001
Error	30	734.160037	24.472001		

ARM Action Codes
TY1 = 3.872*[29]*(100-[30])/87