

Southern Illinois University

Evaluation of Linex plus Metolachlor in Soybean.

Trial ID: 12-DSO-Linex  
 Location: De Soto, IL

Investigator: Bryan Young

General Trial Information	
<b>Study Director:</b> Bryan Young	<b>Title:</b> Professor
<b>Investigator:</b> Bryan Young	
<b>Trial Status:</b> F - one-year/final	
<b>Initiation Date:</b> 4-29-12	
Trial Location	
<b>City:</b> De Soto	
<b>State/Prov.:</b> IL	
<b>Postal Code:</b> 62924	
<b>Country:</b> USA	

**Objectives:**  
 Determine the efficacy of Linex alone and in combinations with metolachlor for residual control of glyphosate-resistant waterhemp.

Personnel	
<b>Study Director:</b> Bryan Young	<b>Title:</b> Professor
<b>Investigator:</b> Bryan Young	
<b>Affiliation:</b> Southern Illinois University	
<b>Address:</b> 1205 Lincoln Drive - AG 176 - MC 4415	
<b>Location:</b> Carbondale IL	
<b>Postal Code:</b> 62901	<b>E-mail:</b> bgyoung@siu.edu
<b>Phone No.:</b> 618-453-7679	<b>Mobile No.:</b> 618-713-6471

Crop Description	
<b>Crop 1:</b> GLXMA Glycine max Soybean	<b>Description:</b> RR2Y
<b>Variety:</b> AG3832	<b>Planting Date:</b> 4-29-12
<b>BBCH Scale:</b> BSOY	<b>Rate, Unit:</b> 155000 S/A
<b>Planting Method:</b> SEEDED Seeded	
<b>Depth, Unit:</b> 2 IN	
<b>Row Spacing, Unit:</b> 30 IN	

Pest Description	
<b>Pest 1 Type:</b> W	<b>Code:</b> AMATA - Amaranthus rudis Sauer
<b>Common Name:</b> waterhemp, common	
<b>Description:</b> glyphosate-resistant waterhemp	

Site and Design	
<b>Plot Width, Unit:</b> 10 FT	<b>Site Type:</b> FIELD field
<b>Plot Length, Unit:</b> 30 FT	
<b>Plot Area, Unit:</b> 300 FT2	<b>Tillage Type:</b> NOTILL no-till
<b>Replications:</b> 3	<b>Study Design:</b> RACOB L Randomized Complete Block (RCB)

No.	Previous Crop	Year
1.	GLXMA	2011

Maintenance	
No.	Maintenance Treatment Name
1.	N 27 LB/A, P205 69 LB/A, K20 90 LB/A

Soil Description	
<b>% Sand:</b> 15.4	<b>% OM:</b> 2.15
<b>% Silt:</b> 64.7	<b>pH:</b> 6.9
<b>% Clay:</b> 19.9	<b>CEC:</b> 12.4
<b>Texture:</b> SIL SILT LOAM	
<b>Soil Name:</b> OKAW	

Additional Measured Elements		
Element	Quantity	Unit
P1	94	LB/A
K	468	LB/A

Moisture and Weather Conditions	
<b>Overall Moisture Conditions:</b>	BELNOR below normal
<b>Closest Weather Station:</b> SOUTHERN IL AIRPORT (93810)	<b>Distance, Unit:</b> 1.5 MI

## Southern Illinois University

Evaluation of Linex plus Metolachlor in Soybean.

Trial ID: 12-DSO-Linex

Location: De Soto, IL

Investigator: Bryan Young

No.	Date	Amount	Unit	Type	Type Description	Interval	Unit	Min Temp	Max Temp	Temp Unit
1.	4-10-12					7	DAY	30.1	79.2	F
2.	4-13-12	0.22	IN	RAIN	rain					
3.	4-15-12	0.47	IN	RAIN	rain					
4.	4-16-12	0.29	IN	RAIN	rain					
5.	4-17-12					7	DAY	36.7	75.6	F
6.	4-20-12	0.13	IN	RAIN	rain					
7.	4-22-12	0.13	IN	RAIN	rain					
8.	4-24-12					7	DAY	43.7	80.9	F
9.	4-27-12	0.04	IN	RAIN	rain					
10.	4-30-12	0.55	IN	RAIN	rain					
11.	5-1-12					7	DAY	59.1	91.3	F
12.	5-6-12	0.14	IN	RAIN	rain					
13.	5-7-12	0.07	IN	RAIN	rain					
14.	5-8-12					7	DAY	43.3	79	F
15.	5-15-12					7	DAY	44.9	89.1	F
16.	5-20-12	0.93	IN	RAIN	rain					
17.	5-22-12					7	DAY	45.5	92.8	F
18.	5-29-12					7	DAY	46.3	89.8	F
19.	5-30-12	0.02	IN	RAIN	rain					
20.	5-31-12	0.14	IN	RAIN	rain					
21.	6-4-12	0.49	IN	RAIN	rain					
22.	6-5-12					7	DAY	48.5	88.8	F
23.	6-11-12	0.21	IN	RAIN	rain					
24.	6-12-12					7	DAY	49.8	91.1	F
25.	6-17-12	0.03	IN	RAIN	rain					
26.	6-19-12					7	DAY	55.4	96.4	F
27.	6-26-12					7	DAY	51.1	105.4	F
28.	7-3-12					7	DAY	71.1	105	F
29.	7-8-12	0.07	IN	RAIN	rain					
30.	7-9-12	0.12	IN	RAIN	rain					
31.	7-10-12					7	DAY	65.9	93.9	F
32.	7-14-12	0.02	IN	RAIN	rain					
33.	7-17-12	0.03	IN	RAIN	rain					
34.	7-17-12					7	DAY	60	102.3	F
35.	7-24-12					7	DAY	64.1	102.1	F
36.	7-26-12	1.41	IN	RAIN	rain					
37.	7-29-12	0.24	IN	RAIN	rain					
38.	7-31-12					7	DAY	62.7	97.9	F

**Comment:**

From the Illinois Water and Climate Summary;

Temperatures in Illinois were above normal and precipitation was below normal during April.

Temperatures in Illinois were much above normal and precipitation was below normal during May.

Temperatures in Illinois were above normal and precipitation was much below normal during June.

Temperatures in Illinois were much above normal and precipitation was much below normal during July.

Temperatures and precipitation in Illinois were near normal during August.

Evaluation of Linex plus Metolachlor in Soybean.

Trial ID: 12-DSO-Linex

Location: De Soto, IL

Investigator: Bryan Young

## Application Description

	A	B
Application Date:	4-29-12	5-28-12
Time of Day:	16:00	7:00
Application Method:	Spray	Spray
Application Timing:	PRE	28DAP
Application Placement:	BROFOL	BROFOL
Applied By:	JRK	JRK
Air Temperature, Unit:	80 F	77 F
% Relative Humidity:	59	82
Wind Velocity, Unit:	2 MPH	1 MPH
Wind Direction:	N	S
Dew Presence (Y/N):	N no	N no
Soil Temperature, Unit:	70 F	81 F
Soil Moisture:	NORMAL	BELNOR
% Cloud Cover:	100	10
Next Rain Occurred On:	4-30-12	5-30-12

## Crop Stage At Each Application

	A	B
Crop 1 Code, BBCH Scale:	GLXMA BSOY	GLXMA BSOY
Stage Scale Used:	DESC	DESC
Stage Majority, Percent:	NA	V3
Stage Minimum, Percent:		V2
Stage Maximum, Percent:		V3
Height, Unit:		6 IN
Height Minimum, Maximum:		4 6

## Pest Stage At Each Application

	A	B
Pest 1 Code, Type, Scale:	AMATA W DESC	AMATA W DESC
Stage Majority, Percent:	NA	4
Stage Minimum, Percent:		2
Stage Maximum, Percent:		8
Height, Unit:		3 IN
Height Minimum, Maximum:		1 5
Density, Unit:		0.5 FT2

## Application Equipment

	A	B
Appl. Equipment:	CO2 sprayer	CO2 sprayer
Equipment Type:	BACSPR	BACSPR
Operation Pressure, Unit:	30 PSI	30 PSI
Nozzle Type:	XR	XR
Nozzle Size:	8002	8002
Boom Length, Unit:	6.67 FT	6.67 FT
Spray Volume, Unit:	15 GPA	15 GPA

Southern Illinois University

Evaluation of Linex plus Metolachlor in Soybean.

Trial ID: 12-DSO-Linex

Location: De Soto, IL

Investigator: Bryan Young

Pest Code	Crop Code	Rating Date	Rating Type	Rating Unit	Rating Timing	Trt-Eval Interval	GLXMA 5-13-12 Injury Percent 14 DAP 14 DA-A	GLXMA 5-27-12 Injury Percent 28 DAP 28 DA-A	GLXMA 6-18-12 Injury Percent 21 DA-B	AMATA-HR 5-27-12 Control Percent 28 DAP 28 DA-A	AMATA-HR 6-18-12 Control Percent 21 DA-B		
Trt No.	Treatment Name	Form Conc	Form Type	Rate Unit	Other Rate	Other Rate Unit	Growth Stage	Appl Code					
1	LINEX ROUNDUP POWERMAX N-PAK AMS	4.5	SC SL SL	0.5 lb ai/a 0.77 lb ae/a 2.5 % v/v	1 pt/a 22 fl oz/a 2.5 % v/v		PRE 28DAP 28DAP	A B B	0 a	0 a	0 a	80 c	73 e
2	LINEX ROUNDUP POWERMAX N-PAK AMS	4.5	SC SL SL	0.75 lb ai/a 0.77 lb ae/a 2.5 % v/v	1.5 pt/a 22 fl oz/a 2.5 % v/v		PRE 28DAP 28DAP	A B B	0 a	0 a	0 a	79 c	76 e
3	LINEX ROUNDUP POWERMAX N-PAK AMS	4.5	SC SL SL	1 lb ai/a 0.77 lb ae/a 2.5 % v/v	2 pt/a 22 fl oz/a 2.5 % v/v		PRE 28DAP 28DAP	A B B	0 a	0 a	0 a	82 c	76 e
4	LINEX ROUNDUP POWERMAX N-PAK AMS	4.5	SC SL SL	1.25 lb ai/a 0.77 lb ae/a 2.5 % v/v	2.5 pt/a 22 fl oz/a 2.5 % v/v		PRE 28DAP 28DAP	A B B	0 a	0 a	0 a	91 b	83 d
5	LINEX PARALLEL ROUNDUP POWERMAX N-PAK AMS	7.8 4.5	SC EC SL SL	0.5 lb ai/a 1.63 lb ai/a 0.77 lb ae/a 2.5 % v/v	1 pt/a 1.67 pt/a 22 fl oz/a 2.5 % v/v		PRE PRE 28DAP 28DAP	A A B B	0 a	0 a	0 a	96 a	87 cd
6	LINEX PARALLEL ROUNDUP POWERMAX N-PAK AMS	7.8 4.5	SC EC SL SL	0.75 lb ai/a 1.63 lb ai/a 0.77 lb ae/a 2.5 % v/v	1.5 pt/a 1.67 pt/a 22 fl oz/a 2.5 % v/v		PRE PRE 28DAP 28DAP	A A B B	0 a	0 a	0 a	96 a	90 bc
7	LINEX PARALLEL ROUNDUP POWERMAX N-PAK AMS	7.8 4.5	SC EC SL SL	1 lb ai/a 1.63 lb ai/a 0.77 lb ae/a 2.5 % v/v	2 pt/a 1.67 pt/a 22 fl oz/a 2.5 % v/v		PRE PRE 28DAP 28DAP	A A B B	0 a	0 a	0 a	97 a	95 ab
8	LINEX PARALLEL ROUNDUP POWERMAX N-PAK AMS	7.8 4.5	SC EC SL SL	1.25 lb ai/a 1.63 lb ai/a 0.77 lb ae/a 2.5 % v/v	2.5 pt/a 1.67 pt/a 22 fl oz/a 2.5 % v/v		PRE PRE 28DAP 28DAP	A A B B	1 a	0 a	0 a	96 a	95 ab
9	PARALLEL ROUNDUP POWERMAX N-PAK AMS	7.8 4.5	EC SL SL	1.63 lb ai/a 0.77 lb ae/a 2.5 % v/v	1.67 pt/a 22 fl oz/a 2.5 % v/v		PRE 28DAP 28DAP	A B B	0 a	0 a	0 a	82 c	71 e
10	AUTHORITY FIRST ROUNDUP POWERMAX N-PAK AMS	70 4.5	WG SL SL	0.28 lb ai/a 0.77 lb ae/a 2.5 % v/v	6.4 oz/a 22 fl oz/a 2.5 % v/v		PRE 28DAP 28DAP	A B B	0 a	0 a	0 a	97 a	97 a
11	NONTREATED								0 a	0 a	0 a	0 d	0 f
LSD (P=.05)							0.9	0.0	0.0	4.3	6.2		
Standard Deviation							0.5	0.0	0.0	2.5	3.6		
CV							574.46	0.0	0.0	3.1	4.74		
Replicate F							1.000	0.000	0.000	1.324	6.361		
Replicate Prob(F)							0.3855	1.0000	1.0000	0.2885	0.0073		
Treatment F							1.000	0.000	0.000	369.286	166.902		
Treatment Prob(F)							0.4755	1.0000	1.0000	0.0001	0.0001		

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.

Evaluation of Linex plus Metolachlor in Soybean.

Trial ID: 12-DSO-Linex  
Location: De Soto, IL

Investigator: Bryan Young

Trial Comments

1. Protocol: TKI - NovaSource.
2. Ratings: CI at 14 and 28 DAP. WC at 28 DAP and 21 DA-B.
3. Blanket burndown of Gramoxone Inteon (4 pt/A) plus NIS (0.5%) was applied on 4-28-12.
4. Rainfall following the PRE application was approximately 0.5 inch the next day and an additional 0.25 inch 7 days later.
5. AMATA-HR = Herbicide-resistant waterhemp (glyphosate).
6. Not harvested.