

Southern Illinois University

Soybean Tolerance to Preplant, Preemergence, and Postemergence Applications of Warrant.

Trial ID: 11-20B Location: Belleville Res. Center

Investigator: Bryan Young, Professor, Southern Illinois University, bgyoung@siu.edu
 City State Zip Country: Belleville IL 62221 USA
 Trial Status: FINAL Initiation Date: 4-11-11

Objectives: To further characterize the influence of soil temperature and soybean vigor on tolerance to Warrant applied preplant or preemergence

Crop 1: GLXMA Soybean Variety: AG 4005 Description: RR
 Planting Method: SEEDED
 Rate, Unit: 75 LB/A Depth, Unit: 1.0 IN
 Row Spacing, Unit: 30 IN

Code: NA

Plot Width, Unit: 10 FT Site Type: FIELD
 Plot Length, Unit: 28 FT Tillage Type: NO-TILL
 Replications: 4 Study Design: Randomized Complete Block

Prior Crops, Year
 1. ZEAMD 2010

Field Prep./Maintenance: N 0 LB/A, P205 50 LB/A, K20 150 LB/A

% OM: 1.8 Texture: SILT LOAM
 pH: 6.7 Soil Name: BETHALTO
 CEC: 12 Fert. Level: P1 54 LB/A, K 286 LB/A

Application Description

	A	B	C	D	E	F
Application Date:	4-11-11	5-4-11	5-12-11	5-18-11	6-16-11	6-21-11
Time of Day:	11:00	11:00	13:00	17:00	8:00	18:30
Application Method:	Spray	Spray	Spray	Spray	Spray	Spray
Application Timing:	14DBP-1	14DBP-2	PRE-1	PRE-2	V3-1	V3-2
Application Placement:	BROFOL	BROFOL	BROFOL	BROFOL	BROFOL	BROFOL
Applied By:	RFK	RFK	RFK	RFK	RFK	LAH
Air Temperature, Unit:	64 F	55 F	83 F	70 F	77 F	75 F
% Relative Humidity:	84	45	49	44	58	69
Wind Velocity, Unit:	0 MPH	0 MPH	0 MPH	0 MPH	0 MPH	0 MPH
Dew Presence (Y/N):	N	N	N	N	N	N
Soil Temperature, Unit:	59 F	58 F	70 F	63 F	74 F	77 F
Soil Moisture:	ABONOR	ABONOR	ABONOR	NORMAL	ABONOR	ABONOR
% Cloud Cover:	18	0	10	20	0	60

	11-4-11	4-5-11	12-5-11	18-5-11	16-6-11	21-6-11
Crop stage at application:	NA	NA	NA	NA	V3	V3
Height Min, Max (inch):					5	6 6 9

Pest Stage At Each Application

	4-11-11	5-4-11	5-12-11	5-18-11	6-16-11	6-21-11
Application Date:	4-11-11	5-4-11	5-12-11	5-18-11	6-16-11	6-21-11
Weed Code:	NA	NA	NA	NA	NA	NA
Stage Majority (leaves):	NA	NA	NA	NA	NA	NA

Application Equipment

	CO2 sprayer	CO2 sprayer	CO2 sprayer	CO2 sprayer	CO2 sprayer	CO2 sprayer
Appl. Equipment:	CO2 sprayer	CO2 sprayer	CO2 sprayer	CO2 sprayer	CO2 sprayer	CO2 sprayer
Operating Pressure:	30 PSI	30 PSI	30 PSI	30 PSI	30 PSI	30 PSI
Nozzle Type:	Flat fan	Flat fan	Flat fan	Flat fan	Flat fan	Flat fan
Nozzle Size:	XR 8003	XR 8003	XR 8003	XR 8003	XR 8003	XR 8003
Boom Length, Unit:	10 FT	10 FT	10 FT	10 FT	10 FT	10 FT
Spray Volume, Unit:	20 GPA	20 GPA	20 GPA	20 GPA	20 GPA	20 GPA

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Pest Code														
Crop Code														
Rating Date														
Rating Data Type														
Rating Unit														
Rating Timing														
Trt-Eval Interval														

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Other Rate	Other Rate Unit	Growth Stage	Appl Code	Moisture Percent	Yield bu/A	Plants 1 m row	Injury Percent	Injury Percent	Injury Percent
1	EARLY PLANTING WARRANT	3	CS	1.13	lb ai/a	1.5	qt/a	14DBP-1	A	12.7 a	68 abc	27.4 abc	0 c	0 b	0 a
2	EARLY PLANTING WARRANT	3	CS	2.25	lb ai/a	3	qt/a	14DBP-1	A	12.4 ab	67 bc	24.1 c	0 c	0 b	0 a
3	EARLY PLANTING WARRANT	3	CS	1.13	lb ai/a	1.5	qt/a	PRE-1	C	12.5 ab	66 c	24.4 bc	0 c	0 b	0 a
4	EARLY PLANTING WARRANT	3	CS	2.25	lb ai/a	3	qt/a	PRE-1	C	12.5 ab	69 abc	27.0 abc	0 c	0 b	0 a
5	EARLY PLANTING WARRANT	3	CS	1.13	lb ai/a	1.5	qt/a	V3-1	E	12.6 ab	70 abc	27.6 ab	0 c	0 b	0 a
6	EARLY PLANTING WARRANT	3	CS	2.25	lb ai/a	3	qt/a	V3-1	E	12.3 bcd	68 abc	28.9 a	0 c	0 b	0 a
7	EARLY PLANTING VALOR SX	51	WG	0.064	lb ai/a	2	oz/a	PRE-1	C	12.4 abc	67 bc	25.5 abc	0 c	0 b	0 a
8	EARLY PLANTING ROUNDUP WEATHERMAX N-PAK AMS	4.5 100	SL SL	0.75 5	lb ae/a % v/v	21.3 5	fl oz/a % v/v	V3-1 V3-1	E E	12.5 ab	71 abc	28.3 a	0 c	0 b	0 a
9	NORMAL PLANTING WARRANT	3	CS	1.13	lb ai/a	1.5	qt/a	14DBP-2	B	12.0 cde	73 ab	26.0 abc	0 c	0 b	0 a
10	NORMAL PLANTING WARRANT	3	CS	2.25	lb ai/a	3	qt/a	14DBP-2	B	12.0 de	72 abc	26.5 abc	0 c	0 b	0 a
11	NORMAL PLANTING WARRANT	3	CS	1.13	lb ai/a	1.5	qt/a	PRE-2	D	12.1 cde	74 a	27.9 a	0 c	0 b	0 a
12	NORMAL PLANTING WARRANT	3	CS	2.25	lb ai/a	3	qt/a	PRE-2	D	12.1 cde	73 abc	27.3 abc	2 b	0 b	0 a
13	NORMAL PLANTING WARRANT	3	CS	1.13	lb ai/a	1.5	qt/a	V3-2	F	12.0 cde	73 ab	28.8 a	0 c	0 b	0 a
14	NORMAL PLANTING WARRANT	3	CS	2.25	lb ai/a	3	qt/a	V3-2	F	11.9 de	71 abc	28.1 a	3 a	1 a	0 a
15	NORMAL PLANTING VALOR SX	51	WG	0.064	lb ai/a	2	oz/a	PRE-2	D	12.0 de	73 ab	27.0 abc	0 c	0 b	0 a
16	NORMAL PLANTING ROUNDUP WEATHERMAX N-PAK AMS	4.5 100	SL SL	0.75 5	lb ae/a % v/v	21.3 5	fl oz/a % v/v	V3-2 V3-2	F F	11.8 e	74 a	26.8 abc	0 c	0 b	0 a
LSD (P=.05)										0.36	6.6	3.46	0.6	0.4	0.0
Replicate F										1.736	2.079	0.152	1.000	1.000	0.000
Replicate Prob(F)										0.1739	0.1170	0.9282	0.4016	0.4016	1.0000
Treatment F										4.756	1.360	1.338	14.200	1.000	0.000
Treatment Prob(F)										0.0001	0.2107	0.2203	0.0001	0.4718	1.0000

Means followed by same letter do not significantly differ (P=.05, LSD)

Trial Comments

1. Protocol: Monsanto (24-19).
2. Ratings: CI (by individual type of response) at 7, 14, and 28 DA V3.
Soybean stand counts as (2) 1.0 meter of row per plot at V3.
3. Weed-free:
Remove all weeds from entire plot area with a blanket application of Roundup Powermax (22 fl oz/A) plus 2,4-D (1.0 pt/A) plus N-PAK AMS (5%v/v) at 7 days prior to application A (applied 4-5-11).

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Blanket postemergence application of Roundup Powermax (22 fl oz/A) plus N-PAK AMS (5% v/v) to entire plot area (10 ft wide) as needed (applied 5-31-11 and 7-1-11).

4. Early planting should be 3 to 4 weeks prior to normal planting.

Early planting date was 5-12-11 and normal planting date was 5-18-11.

5. GLXMA Plants 1 m row = Soybean stand counts per 1.0 meter of row (average of 2 subsamples per plot).

Injury was slight malformation.

DA V3 = Days after the the V3 application for planting dates 1 and 2.

For planting date 1, evaluations at 0, 7, 14, and 28 days after the V3 application were on 6-17-11, 6-23-11, 6-30-11, and 7-14-11, respectively.

For planting date 2, evaluations at 0, 7, 14, and 28 days after the V3 application were on 6-22-11, 6-28-11, 7-5-11, and 7-29-11, respectively.

6. Yield.

7. Missing yield data due to standing water in some plots.

8. Harvested 10-11-11, (2) 30 inch rows by 25 ft.