

MSU Soil Fertility Research Program
SOYBEAN TIME, SOURCE AND RATE INTERACTIONS
 Trial ID: SOYEL07-17 Location: Campus Trial Year: 2017
 Investigator: Kurt Steinke
 Project ID: MOINTRXNSOYS

Crop Code	GLXMA	GLXMA	GLXMA
Crop Name	Soybean	Soybean	Soybean
Crop Variety	P24T05R	P24T05R	P24T05R
Description	1 meter of row		bu/ac@13.5%
Rating Date	Oct-3-2017	Oct-3-2017	Oct-2-2017
Rating Type	Stand Count	LODGIN	YIELD
Rating Unit	NUMBER	% Failed	BU
Crop Stage Scale			HARVEST
ARM Action Codes			TY1
Number of Decimals	0	0	0
Trt Treatment No. Name	Form Type	Rate Unit	Growth Stage
TABLE OF R MEANS			
Replicate 1	22	0	47
Replicate 2	22	0	52
Replicate 3	21	0	55
Replicate 4	22	0	53
TABLE OF A (Cultural) MEANS			
1 PREPLANT	22 a	0 a	51 a
2 SideDressV4-V6	22 a	0 a	52 a
LSD P=.05	1.3	.	3.1
Standard Deviation	1.8	0.0	4.2
CV	8.4	0.0	8.1
TABLE OF B (Fertilizer) MEANS			
1 MOP 0-0-62 GR	22 a	0 a	52 a
2 Aspire GR	22 a	0 a	52 a
LSD P=.05	1.3	.	3.1
Standard Deviation	1.8	0.0	4.2
CV	8.4	0.0	8.1
TABLE OF C (Rate) MEANS			
1 RATE 30	22 a	0 a	52 a
2 RATE 60	21 a	0 a	52 a
LSD P=.05	1.3	.	3.1
Standard Deviation	1.8	0.0	4.2
CV	8.4	0.0	8.1
TABLE OF A (Cultural) B (Fertilizer) MEANS			
1 PREPLANT	22 a	0 a	52 a
1 MOP 0-0-62 GR			
2 SideDressV4-V6	22 a	0 a	52 a
1 MOP 0-0-62 GR			
1 PREPLANT	21 a	0 a	51 a
2 Aspire GR			
2 SideDressV4-V6	22 a	0 a	53 a
2 Aspire GR			
LSD P=.05	1.9	.	4.4

Means followed by same letter or symbol do not significantly differ (P=.05, LSD)
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Rating Unit	NUMBER	% Failed	BU
Crop Stage Scale			HARVEST
ARM Action Codes			TY1
Number of Decimals	0	0	0
Trt Treatment No. Name	Form Type	Rate Unit	Growth Stage
	1	2	6
Standard Deviation	1.8	0.0	4.2
CV	8.4	0.0	8.1
TABLE OF A (Cultural) C (Rate) MEANS			
1 PREPLANT	22 a	0 a	49 b
1 RATE 30			
2 SideDressV4-V6	23 a	0 a	55 a
1 RATE 30			
1 PREPLANT	21 a	0 a	53 ab
2 RATE 60			
2 SideDressV4-V6	21 a	0 a	50 ab
2 RATE 60			
LSD P=.05	1.9	.	4.4
Standard Deviation	1.8	0.0	4.2
CV	8.4	0.0	8.1
TABLE OF B (Fertilizer) C (Rate) MEANS			
1 MOP 0-0-62 GR	23 a	0 a	52 a
1 RATE 30			
2 Aspire GR	22 a	0 a	52 a
1 RATE 30			
1 MOP 0-0-62 GR	21 a	0 a	52 a
2 RATE 60			
2 Aspire GR	22 a	0 a	52 a
2 RATE 60			
LSD P=.05	1.9	.	4.4
Standard Deviation	1.8	0.0	4.2
CV	8.4	0.0	8.1
TABLE OF A (Cultural) B (Fertilizer) C (Rate) MEANS			
1 PREPLANT	23 a	0 a	50 a
1 MOP 0-0-62 GR			
1 RATE 30			
2 SideDressV4-V6	23 a	0 a	54 a
1 MOP 0-0-62 GR			
1 RATE 30			

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Rating Unit	NUMBER	% Failed	BU
Crop Stage Scale			HARVEST
ARM Action Codes			TY1
Number of Decimals	0	0	0
Trt No.	Treatment Name	Form Type	Rate Growth Unit Stage
			1 2 6
1	PREPLANT		22 a
2	Aspire	GR	0 a
1	RATE 30		48 a
2	SideDressV4-V6		22 a
2	Aspire	GR	0 a
1	RATE 30		55 a
1	PREPLANT		21 a
1	MOP 0-0-62	GR	0 a
2	RATE 60		53 a
2	SideDressV4-V6		20 a
1	MOP 0-0-62	GR	0 a
2	RATE 60		50 a
1	PREPLANT		21 a
2	Aspire	GR	0 a
2	RATE 60		53 a
2	SideDressV4-V6		22 a
2	Aspire	GR	0 a
2	RATE 60		50 a
LSD P=.05	2.7	.	6.2
Standard Deviation	1.8	0.0	4.2
CV	8.4	0.0	8.1

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COMPLETE FACTORIAL AOV For GLXMA Soybean P24T05R 1 meter of row Oct-3-2017 Stand Count NUMBER 0 (Data Column 1)							
Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)	
Total	31	106.875000					
R	3	7.375000	2.458333	1.054	0.4834		
A	1	0.500000	0.500000	0.333	0.6042		1
RA	3	4.500000	1.500000				
B	1	0.000000	0.000000	0.000	1.0000		2
RB	3	9.000000	3.000000				
AB	1	3.125000	3.125000	0.573	0.5043		4
RAB	3	16.375000	5.458333				
C	1	12.500000	12.500000	2.778	0.1942		2
RC	3	13.500000	4.500000				
AC	1	1.125000	1.125000	0.771	0.4444		2
RAC	3	4.375000	1.458333				
BC	1	10.125000	10.125000	1.976	0.2545		4
RBC	3	15.375000	5.125000				
ABC	1	2.000000	2.000000	0.857	0.4228		3
RABC	3	7.000000	2.333333				
FACTORIAL/POOLED ERROR AOV For GLXMA Soybean P24T05R 1 meter of row Oct-3-2017 Stand Count NUMBER 0 (Data Column 1)							
Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)	
Total	31	106.875000					
R	3	7.375000	2.458333	0.736	0.5421		
A	1	0.500000	0.500000	0.150	0.7027		1
B	1	0.000000	0.000000	0.000	1.0000		1
AB	1	3.125000	3.125000	0.936	0.3444		2
C	1	12.500000	12.500000	3.743	0.0666		1
AC	1	1.125000	1.125000	0.337	0.5678		2
BC	1	10.125000	10.125000	3.032	0.0963		2
ABC	1	2.000000	2.000000	0.599	0.4476		3
ERROR	21	70.125000	3.339286				

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COMPLETE FACTORIAL AOV For GLXMA Soybean P24T05R Oct-3-2017 LODGIN % Failed 0 (Data Column 2)						
Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	31	0.000000				
R	3	0.000000	0.000000	0.000	1.0000	
A	1	0.000000	0.000000	0.000	1.0000	.
RA	3	0.000000	0.000000			
B	1	0.000000	0.000000	0.000	1.0000	.
RB	3	0.000000	0.000000			
AB	1	0.000000	0.000000	0.000	1.0000	.
RAB	3	0.000000	0.000000			
C	1	0.000000	0.000000	0.000	1.0000	.
RC	3	0.000000	0.000000			
AC	1	0.000000	0.000000	0.000	1.0000	.
RAC	3	0.000000	0.000000			
BC	1	0.000000	0.000000	0.000	1.0000	.
RBC	3	0.000000	0.000000			
ABC	1	0.000000	0.000000	0.000	1.0000	.
RABC	3	0.000000	0.000000			
FACTORIAL/POOLED ERROR AOV For GLXMA Soybean P24T05R Oct-3-2017 LODGIN % Failed 0 (Data Column 2)						
Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	31	0.000000				
R	3	0.000000	0.000000	0.000	1.0000	
A	1	0.000000	0.000000	0.000	1.0000	.
B	1	0.000000	0.000000	0.000	1.0000	.
AB	1	0.000000	0.000000	0.000	1.0000	.
C	1	0.000000	0.000000	0.000	1.0000	.
AC	1	0.000000	0.000000	0.000	1.0000	.
BC	1	0.000000	0.000000	0.000	1.0000	.
ABC	1	0.000000	0.000000	0.000	1.0000	.
ERROR	21	0.000000	0.000000			

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COMPLETE FACTORIAL AOV For GLXMA Soybean P24T05R bu/ac@13.5% Oct-2-2017 YIELD BU HARVEST TY1 0 (Data Column 6)						
Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	31	818.646549				
R	3	283.052194	94.350731	4.950	0.1109	
A	1	9.627441	9.627441	2.665	0.2011	2
RA	3	10.836012	3.612004			
B	1	0.001104	0.001104	0.000	0.9929	4
RB	3	35.846824	11.948941			
AB	1	3.826415	3.826415	0.270	0.6395	6
RAB	3	42.582427	14.194142			
C	1	0.008469	0.008469	0.003	0.9603	2
RC	3	8.690439	2.896813			
AC	1	147.348265	147.348265	2.375	0.2209	13
RAC	3	186.124665	62.041555			
BC	1	0.057872	0.057872	0.006	0.9436	5
RBC	3	29.464950	9.821650			
ABC	1	4.002468	4.002468	0.210	0.6779	10
RABC	3	57.177005	19.059002			
FACTORIAL/POOLED ERROR AOV For GLXMA Soybean P24T05R bu/ac@13.5% Oct-2-2017 YIELD BU HARVEST TY1 0 (Data Column 6)						
Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	31	818.646549				
R	3	283.052194	94.350731	5.345	0.0068	
A	1	9.627441	9.627441	0.545	0.4684	3
B	1	0.001104	0.001104	0.000	0.9938	3
AB	1	3.826415	3.826415	0.217	0.6463	4
C	1	0.008469	0.008469	0.000	0.9827	3
AC	1	147.348265	147.348265	8.347	0.0088	4
BC	1	0.057872	0.057872	0.003	0.9549	4
ABC	1	4.002468	4.002468	0.227	0.6389	6
ERROR	21	370.722322	17.653444			

Crop Code
 GLXMA, BSOY, Glycine max, Soybean = US
Rating Type
 LODGIN = lodging
 YIELD = yield
Rating Unit
 NUMBER = number
 BU = bushel
ARM Action Codes
 TY1 = 3.63*[3]*(100-[4])/86.5

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