

Purdue Weed Science

Evaluate Shutdown with tank mix partners versus standard pre-mix options

Trial ID: 17S-SEPAC-Soy-04 Location: SEPAC Trial Year: 2017
 Protocol ID: 17S-SEPAC-Soy-04 Investigator: Dr. Bill Johnson
 Project ID: SHDN-06-US-IN-17-12TLE Study Director: Taylor Campbell
 Sponsor Contact: UPI - Tony Estes

General Trial Information

Study Director: Taylor Campbell **Title:** Research Associate
Investigator: Dr. Bill Johnson **Title:** Professor

Discipline: H herbicide
Trial Status: E established
Initiation Date: 4/17/2017

Trial Location

City: Butlerville **Country:** USA United States
State/Prov.: Indiana
Postal Code: 47723

Conducted Under GLP: No
Conducted Under GEP: No

Contacts

Study Director: Taylor Campbell **Title:** Research Associate
Organization: Purdue University
Address: 915 W State Street
City+State/Prov: West Lafayette, IN
Postal Code: 47907 **E-mail:** campbe59@purdue.edu
Country: USA United States

Investigator: Dr. Bill Johnson **Title:** Professor
Organization: Purdue University
Address: 915 W State Street
City+State/Prov: West Lafayette, IN
Postal Code: 47907 **E-mail:** wjg@purdue.edu
Country: USA United States

Crop Description

Crop 1: GLXMA Glycine max Soybean
Variety: AG30X6

Planting Date: 6/2/2017
Planting Rate, Unit: 140000 S/A **Planting Method:** PLANTD planted
Depth, Unit: 1 IN **Planting Equipment:** PP Plot Planter
Row Spacing, Unit: 30 IN
Planting Density, Unit: 140000 S/A
Soil Temperature, Unit: 79 F
Soil Moisture: WET wet

Site and Design

Treated Plot Width: 6.67 FT **Site Type:** FIELD field
Treated Plot Length: 30 FT **Experimental Unit:** 1 PLOT plot
Treated Plot Area: 200.1 FT² **Treatments:** 7 **Tillage Type:** NOTILL no-till
Replications: 4 **Study Design:** RACOB Randomized Complete Block (RCB)

Comment: Blanket of Paraquat applied on May 17 @ 3 pt per acre with 1% COC
 Another Blanket of Paraquat applied on June 2 @ 3 pt per acre with 1% COC

Soil Description

Description Name: SEPAC-Field U4
% Sand: 20 **% OM:** 1.8 **Texture:** SIL silt loam
% Silt: 65 **pH:** 5.6 **Soil Name:** Avonburg
% Clay: 15 **CEC:** 6.7 **Fert. Level:** G good
Soil Drainage: P poor

Application Description

	A
Application Date:	6/2/2017
Appl. Start Time:	11:30 AM
Appl. Stop Time:	12:00 PM
Application Method:	SPRAY
Application Timing:	PREPLA
Application Placement:	BROADC
Applied By:	B Mansfield
Air Temperature, Unit:	80 F
% Relative Humidity:	27
Wind Velocity, Unit:	3 MPH
Wind Direction:	E
Dew Presence (Y/N):	N no
Soil Temperature, Unit:	79 F
Soil Moisture:	WET
% Cloud Cover:	0

Crop Stage At Each Application

	A
Crop 1 Code, BBCH Scale:	GLXMA BSOY

Application Equipment

	A
Appl. Equipment:	CO2 BACKPACK
Equipment Type:	BACCAI
Operation Pressure, Unit:	32 PSI
Nozzle Type:	XR
Nozzle Size:	11002
Nozzle Spacing, Unit:	20 IN
Nozzles/Row:	4
Boom Length, Unit:	6.7 FT
Boom Height, Unit:	18 IN
Ground Speed, Unit:	3 MPH
Spray Volume, Unit:	15 GAL/AC
Mix Size, Unit:	1119 mL
Propellant:	COMCO2

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Reps: 4 Plots: 6.67 by 30 feet
 Spray vol: 15 GAL/AC Mix Size: 1119 mL (1043.3 mL calculated mix size)

Trt No.	Treatment Name	Form Conc	Form Unit	Form Type	Rate	Unit	Appl Code	Amt Product to Measure	Rep 1	2	3	4
1	Untreated Check								101	402	501	702
2	SHUTDOWN CLASSIC	4.16 LBA/GAL	25 %	SC	0.31 lb ai/a	A	A	5.559 ml/mx	102	303	404	604
3	AUTHORITY XL	70 %		DF	0.35 lb ai/a	A	A	4.47 g/mx	103	302	504	701
4	SHUTDOWN DUAL MAGNUM	4.16 LBA/GAL	7.62 LBA/GAL	SC	0.14 lb ai/a	A	A	2.51 ml/mx	104	304	601	603
5	AUTHORITY ELITE	7 LB/GAL		EC	1.42 lb ai/a	A	A	15.13 ml/mx	201	204	403	703
6	SHUTDOWN PURSUIT	4.16 LBA/GAL	2 LBAE/GAL	SC	0.26 lb ai/a	A	A	4.662 ml/mx	202	301	502	704
7	AUTHORITY ASSIST	4 LB/GAL		SC	0.313 lb ai/a	A	A	1.951 ml/mx	203	401	503	602

Sort Order: Replicate 1

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Pest Type				W Weed		W Weed	
Pest Code				XANST		XANST	
Pest Name				Common cockleb>		Common cockleb>	
Crop Code					GLXMA		GLXMA
Crop Name					Soybean		Soybean
Rating Date				6/16/2017	6/16/2017	6/30/2017	6/30/2017
Rating Type				CONTRO	PHYGEN	CONTRO	PHYGEN
Rating Unit				%	%	%	%
Number of Subsamples				1	1	1	1
Assessed By				T. Campbell	T. Campbell	T. Campbell	T. Campbell
Days After First/Last Applic.				14 14	14 14	28 28	28 28
Trt-Eval Interval				14 DA-A	14 DA-A	28 DA-A	28 DA-A
ARM Action Codes				P	P	P	P
Number of Decimals				0	0	0	0
Trt	Treatment	Rate	Appl				
No.	Name	Rate	Unit Code	Plot	1	2	3
1	Untreated Check			101	0	0	0
				402	0	0	0
				501	0	0	0
				702	0	0	0
			Mean =		0	0	0
2	SHUTDOWN	0.31 lb ai/a	A	102	100	0	95
	CLASSIC	0.04 lb ai/a	A	303	98	0	95
				404	100	0	98
				604	98	0	95
			Mean =		99	0	96
3	AUTHORITY XL	0.35 lb ai/a	A	103	100	0	100
				302	100	0	100
				504	100	0	100
				701	100	0	100
			Mean =		100	0	100
4	SHUTDOWN	0.14 lb ai/a	A	104	95	0	65
	DUAL MAGNUM	1.28 lb ai/a	A	304	75	0	40
				601	90	0	65
				603	80	0	60
			Mean =		85	0	58
5	AUTHORITY ELITE	1.42 lb ai/a	A	201	85	0	75
				204	70	0	40
				403	90	0	50
				703	85	0	65
			Mean =		83	0	58
6	SHUTDOWN	0.26 lb ai/a	A	202	95	0	90
	PURSUIT	0.0523 lb ai/a	A	301	98	0	80
				502	95	0	90
				704	90	0	70
			Mean =		95	0	83
7	AUTHORITY ASSIST	0.313 lb ai/a	A	203	90	0	50
				401	80	0	70
				503	90	0	65
				602	98	0	70
			Mean =		90	0	64

Pest Type				W Weed			W Weed
Pest Code				XANST			XANST
Pest Name				Common cockleb>			Common cockleb>
Crop Code					GLXMA		
Crop Name					Soybean		
Rating Date				7/7/2017	7/7/2017		7/20/2017
Rating Type				CONTRO	PHYGEN		CONTRO
Rating Unit				%	%		%
Number of Subsamples				1	1		1
Assessed By				T. Campbell	T. Campbell		T. Campbell
Days After First/Last Applic.				35 35	35 35		48 48
Trt-Eval Interval				28 DA-A	28 DA-A		28 DA-A
ARM Action Codes				P	P		P
Number of Decimals				0	0		0
Trt Treatment		Rate	Appl				
No. Name		Rate	Unit Code Plot	5	6		7
1 Untreated Check			101	0	0		0
			402	0	0		0
			501	0	0		0
			702	0	0		0
			Mean =	0	0		0
2 SHUTDOWN	0.31 lb ai/a A		102	95	0		95
CLASSIC	0.04 lb ai/a A		303	95	0		85
			404	95	0		95
			604	95	0		90
			Mean =	95	0		91
3 AUTHORITY XL	0.35 lb ai/a A		103	100	0		95
			302	100	0		100
			504	98	0		90
			701	100	0		90
			Mean =	100	0		94
4 SHUTDOWN	0.14 lb ai/a A		104	65	0		40
DUAL MAGNUM	1.28 lb ai/a A		304	20	0		10
			601	65	0		55
			603	60	0		40
			Mean =	53	0		36
5 AUTHORITY ELITE	1.42 lb ai/a A		201	75	0		40
			204	20	0		20
			403	50	0		40
			703	65	0		40
			Mean =	53	0		35
6 SHUTDOWN	0.26 lb ai/a A		202	90	0		70
PURSUIT	0.0523 lb ai/a A		301	80	0		65
			502	90	0		75
			704	70	0		70
			Mean =	83	0		70
7 AUTHORITY ASSIST	0.313 lb ai/a A		203	50	0		40
			401	65	0		40
			503	65	0		40
			602	75	0		60
			Mean =	64	0		45

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Pest Type

W, Weed, G-BYRW7, G-WedStg = Weed or volunteer crop

Pest Code

XANST, Xanthium strumarium, Common cocklebur = US

Crop Code

GLXMA, BSOY, Glycine max, Soybean = US

Rating Type

CONTRO = control / burndown or knockdown

PHYGEN = phytotoxicity - general / injury

Rating Unit

% = percent

ARM Action Codes

P = Rating scale of 0 to 100 (e.g. % control or injury)

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W Weed XANST Common cockleb>	GLXMA Soybean 6/16/2017 6/16/2017 CONTRO PHYGEN % %	W Weed XANST Common cockleb>	GLXMA Soybean 6/30/2017 6/30/2017 CONTRO PHYGEN % %
Pest Type			
Pest Code			
Pest Name			
Crop Code			
Crop Name			
Rating Date			
Rating Type			
Rating Unit			
Number of Subsamples			
Assessed By			
Days After First/Last Applic.			
Trt-Eval Interval			
ARM Action Codes			
Number of Decimals			
Trt Treatment			
No. Name			
Rate			
Unit			
Appl Code			
1 Untreated Check	0 d	0 a	0 d
2 SHUTDOWN	99 a	0 a	96 ab
CLASSIC			
3 AUTHORITY XL	100 a	0 a	100 a
4 SHUTDOWN	85 c	0 a	58 c
DUAL MAGNUM			
5 AUTHORITY ELITE	83 c	0 a	58 c
6 SHUTDOWN	95 ab	0 a	83 b
PURSUIT			
7 AUTHORITY ASSIST	90 bc	0 a	64 c
LSD P=.05	7.8	.	13.5
Standard Deviation	5.2	0.0	9.1
CV	6.64	0.0	13.93
Bartlett's X2	10.07	0.0	9.444
P(Bartlett's X2)	0.039*	.	0.051
Skewness	-1.9218*	.	-0.9503*
Kurtosis	2.2251*	.	0.0008
Replicate F	2.256	0.000	0.851
Replicate Prob(F)	0.1168	1.0000	0.4843
Treatment F	182.967	0.000	54.912
Treatment Prob(F)	0.0001	1.0000	0.0001

Means followed by same letter or symbol do not significantly differ (P=.05, Student-Newman-Keuls)
 Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.
 Could not calculate LSD (% mean diff) for columns 2,4,6 because error mean square = 0.

Pest Type		W Weed		W Weed
Pest Code		XANST		XANST
Pest Name		Common cockleb>		Common cockleb>
Crop Code			GLXMA	
Crop Name			Soybean	
Rating Date		7/7/2017	7/7/2017	7/20/2017
Rating Type		CONTRO	PHYGEN	CONTRO
Rating Unit		%	%	%
Number of Subsamples		1	1	1
Assessed By		T. Campbell	T. Campbell	T. Campbell
Days After First/Last Applic.		35 35	35 35	48 48
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ARM Action Codes		P	P	P
Number of Decimals		0	0	0
Trt Treatment	Rate	Rate	Appl	
No. Name	Rate	Unit	Code	
				5 6 7
1 Untreated Check				0 d 0 a 0 d
2 SHUTDOWN	0.31 lb ai/a	A		95 a 0 a 91 a
CLASSIC	0.04 lb ai/a	A		
3 AUTHORITY XL	0.35 lb ai/a	A		100 a 0 a 94 a
4 SHUTDOWN	0.14 lb ai/a	A		53 c 0 a 36 c
DUAL MAGNUM	1.28 lb ai/a	A		
5 AUTHORITY ELITE	1.42 lb ai/a	A		53 c 0 a 35 c
6 SHUTDOWN	0.26 lb ai/a	A		83 ab 0 a 70 b
PURSUIT	0.0523 lb ai/a	A		
7 AUTHORITY ASSIST	0.313 lb ai/a	A		64 bc 0 a 45 c
LSD P=.05		18.9	.	12.8
Standard Deviation		12.7	0.0	8.6
CV		19.97	0.0	16.26
Bartlett's X2		16.451	0.0	10.029
P(Bartlett's X2)		0.002*	.	0.074
Skewness		-0.8568	.	-0.2199
Kurtosis		-0.4763	.	-1.1143
Replicate F		1.721	0.000	2.316
Replicate Prob(F)		0.1984	1.0000	0.1101
Treatment F		28.535	0.000	61.736
Treatment Prob(F)		0.0001	1.0000	0.0001

Means followed by same letter or symbol do not significantly differ (P=.05, Student-Newman-Keuls)
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