

MSU Weed Science Research Program

Effect of preharvest applications on black bean color retention - Late Planting

Trial ID: DB02-13 Study Dir.: Goffnett, Sprague, Powell
 Conducted: SVREC Investigator: Christy Sprague

Date Planted: Jun/26/2013 **Row Spacing:** 30 IN
Variety: See Comments **No. of Reps:** 4
Population: 106,000 seeds/A **% OM:** 4.1
Soil Type: Clay loam **pH:** 7.7
Plot Size: 10 X 35 FT **Design:** SPLIT-BLOCK

Tillage: Previous crop corn. Fall moldboard plow. Spring field cultivate, spring soil finish.

Crop	Code	Common Name
1.	PHSVX	BEAN, DRY
2.	PHSVX	BEAN, DRY
3.	PHSVX	BEAN, DRY

Application Description

	A	B
Application Timing:	PREHAR	PREHAR
Date Treated:	Sep/18/2013	Sep/25/2013
Time Treated:	10:45 am	2:15 pm
% Cloud Cover:	30	30
Air Temp., Unit:	65 F	71 F
% Relative Humidity:	66	34
Wind Speed/Unit/Dir:	7 mph S	3 mph NE
Soil Temp., Unit:	57 F	60 F
Soil/Leaf Surface M:	5 5	5 5
Soil Moist (1=w 5=d):	5	5

Crop Stage at Each Application

	A	B
Crop Name:	PHSVX	PHSVX
Height (In.):	20 Eclip	20 Eclip
Stage (L):	70L 50Pod	90L 90Pod
Crop Name:	PHSVX	PHSVX
Height (In.):	22 Zorro	22 Zorro
Stage (L):	45L 40Pod	80L 80Pod
Crop Name:	PHSVX	PHSVX
Height (In.):	21 B10244	21 B10244
Stage (L):	50L 40Pod	85L 75Pod

Application Equipment

Appl	Sprayer	Speed	Nozzle	Nozzle	Nozzle	Nozzle	Boom			
A	Type	MPH	Type	Size	Height	Spacing	Width	GPA	Carrier	PSI
A	Cub	3.8	AirMix	11003	29"	20"	100"	19	water	30
B	Cub	3.8	AirMix	11003	29"	20"	100"	19	water	30

Comments: Black bean varieties: 'Eclipse', 'Zorro', and 'B10244'

MSU Weed Science Research Program

Effect of preharvest applications on black bean color retention - Late Planting

Trial ID: DB02-13
 Conducted: SVREC

Study Dir.: Goffnett, Sprague, Powell
 Investigator: Christy Sprague

Weed Code				
Crop Code		PHSVX	PHSVX	PHSVX
Rating Data Type		DESICC	DESICC	DESICC
Rating Unit		percent	percent	percent
Rating Date		Sep/21/2013	Sep/25/2013	Oct/02/2013
Trt-Eval Interval		3 DA-A	7 DA-A	3 DA-B
# Subsamples, Dec.				7 DA-B

Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Rate Unit	Grow Stg	Appl Code				
1	'Eclipse' - black bean Gramoxone SL	2	L	2	pt/a	50%	A	84.5	95.5		98.8
	Surfactant		L	0.25	% v/v	50%	A				
2	'Eclipse' - black bean Roundup PowerMax	4.5	L	22	fl oz/a	50%	A	90.8	96.0		99.0
	AMS		WG	17	lb/100 gal	50%	A				
3	'Eclipse' - black bean Sharpen	2.85	L	2	fl oz/a	50%	A	98.5	99.0		99.0
	MSO		L	1	% v/v	50%	A				
	AMS		WG	17	lb/100 gal	50%	A				
4	'Eclipse' - black bean Untreated							77.0	86.5		97.8
5	'Eclipse' - black bean Gramoxone SL	2	L	2	pt/a	80%	B			94.3	98.5
	Surfactant		L	0.25	% v/v	80%	B				
6	'Eclipse' - black bean Roundup PowerMax	4.5	L	22	fl oz/a	80%	B			96.3	98.8
	AMS		WG	17	lb/100 gal	80%	B				
7	'Eclipse' - black bean Sharpen	2.85	L	2	fl oz/a	80%	B			98.0	99.0
	MSO		L	1	% v/v	80%	B				
	AMS		WG	17	lb/100 gal	80%	B				
8	'Eclipse' - black bean Untreated									94.0	98.3
9	'Zorro' - black bean Gramoxone SL	2	L	2	pt/a	50%	A	68.8	82.0		95.5
	Surfactant		L	0.25	% v/v	50%	A				
10	'Zorro' - black bean Roundup PowerMax	4.5	L	22	fl oz/a	50%	A	63.8	72.5		98.3
	AMS		WG	17	lb/100 gal	50%	A				
11	'Zorro' - black bean Sharpen	2.85	L	2	fl oz/a	50%	A	91.3	98.3		99.0
	MSO		L	1	% v/v	50%	A				
	AMS		WG	17	lb/100 gal	50%	A				
12	'Zorro' - black bean Untreated							56.3	65.0		91.3
13	'Zorro' - black bean Gramoxone SL	2	L	2	pt/a	80%	B			85.0	98.0
	Surfactant		L	0.25	% v/v	80%	B				
14	'Zorro' - black bean Roundup PowerMax	4.5	L	22	fl oz/a	80%	B			81.3	96.0
	AMS		WG	17	lb/100 gal	80%	B				
15	'Zorro' - black bean Sharpen	2.85	L	2	fl oz/a	80%	B			94.8	99.0
	MSO		L	1	% v/v	80%	B				
	AMS		WG	17	lb/100 gal	80%	B				
16	'Zorro' - black bean Untreated									74.5	91.8
17	'B10244' - black bean Gramoxone SL	2	L	2	pt/a	50%	A	82.7	93.0		99.0
	Surfactant		L	0.25	% v/v	50%	A				

MSU Weed Science Research Program

Weed Code
 Crop Code
 Rating Data Type PHSVX DESICC PHSVX DESICC PHSVX DESICC PHSVX DESICC
 Rating Unit percent percent percent percent
 Rating Date Sep/21/2013 Sep/25/2013 Sep/28/2013 Oct/02/2013
 Trt-Eval Interval 3 DA-A 7 DA-A 3 DA-B 7 DA-B
 # Subsamples, Dec.

Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Rate Unit	Grow Stg	Appl Code				
18	'B10244' - black bean Roundup PowerMax AMS	4.5	L	22	fl oz/a	50%	A	76.7	87.7		98.7
			WG	17	lb/100 gal	50%	A				
19	'B10244' - black bean Sharpen MSO AMS	2.85	L	2	fl oz/a	50%	A	96.3	99.0		99.0
			L	1	% v/v	50%	A				
			WG	17	lb/100 gal	50%	A				
20	'B10244' - black bean Untreated							73.3	85.3		97.7
21	'B10244' - black bean Gramoxone SL Surfactant	2	L	2	pt/a	80%	B			94.0	98.7
			L	0.25	% v/v	80%	B				
22	'B10244' - black bean Roundup PowerMax AMS	4.5	L	22	fl oz/a	80%	B			91.7	98.3
			WG	17	lb/100 gal	80%	B				
23	'B10244' - black bean Sharpen MSO AMS	2.85	L	2	fl oz/a	80%	B			97.3	99.0
			L	1	% v/v	80%	B				
			WG	17	lb/100 gal	80%	B				
24	'B10244' - black bean Untreated									88.3	97.3
LSD (P=.05)								10.79	7.82	5.98	1.90
CV								9.33	6.12	4.56	1.38

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

MSU Weed Science Research Program

Weed Code	Crop Code	Rating Data Type	Rating Unit	Rating Date	Trt-Eval Interval	# Subsamples, Dec.	PHSVX moisture percent	PHSVX YIELD CWT
							Oct/03/2013	Oct/03/2013
							8 DA-B	8 DA-B
							1	1
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Rate Unit	Grow Stg	Appl Code	
1	'Eclipse' - black bean							17.2
	Gramoxone SL	2	L	2	pt/a	50%	A	15.5
	Surfactant		L	0.25	% v/v	50%	A	
2	'Eclipse' - black bean							16.9
	Roundup PowerMax	4.5	L	22	fl oz/a	50%	A	17.3
	AMS		WG	17	lb/100 gal	50%	A	
3	'Eclipse' - black bean							16.9
	Sharpen	2.85	L	2	fl oz/a	50%	A	16.9
	MSO		L	1	% v/v	50%	A	
	AMS		WG	17	lb/100 gal	50%	A	
4	'Eclipse' - black bean							17.0
	Untreated							16.1
5	'Eclipse' - black bean							17.3
	Gramoxone SL	2	L	2	pt/a	80%	B	14.5
	Surfactant		L	0.25	% v/v	80%	B	
6	'Eclipse' - black bean							17.2
	Roundup PowerMax	4.5	L	22	fl oz/a	80%	B	17.0
	AMS		WG	17	lb/100 gal	80%	B	
7	'Eclipse' - black bean							17.1
	Sharpen	2.85	L	2	fl oz/a	80%	B	17.7
	MSO		L	1	% v/v	80%	B	
	AMS		WG	17	lb/100 gal	80%	B	
8	'Eclipse' - black bean							17.1
	Untreated							16.5
9	'Zorro' - black bean							19.0
	Gramoxone SL	2	L	2	pt/a	50%	A	14.0
	Surfactant		L	0.25	% v/v	50%	A	
10	'Zorro' - black bean							18.5
	Roundup PowerMax	4.5	L	22	fl oz/a	50%	A	17.0
	AMS		WG	17	lb/100 gal	50%	A	
11	'Zorro' - black bean							17.6
	Sharpen	2.85	L	2	fl oz/a	50%	A	13.7
	MSO		L	1	% v/v	50%	A	
	AMS		WG	17	lb/100 gal	50%	A	
12	'Zorro' - black bean							19.6
	Untreated							15.2
13	'Zorro' - black bean							19.0
	Gramoxone SL	2	L	2	pt/a	80%	B	16.3
	Surfactant		L	0.25	% v/v	80%	B	
14	'Zorro' - black bean							19.1
	Roundup PowerMax	4.5	L	22	fl oz/a	80%	B	15.9
	AMS		WG	17	lb/100 gal	80%	B	
15	'Zorro' - black bean							18.2
	Sharpen	2.85	L	2	fl oz/a	80%	B	17.0
	MSO		L	1	% v/v	80%	B	
	AMS		WG	17	lb/100 gal	80%	B	
16	'Zorro' - black bean							19.2
	Untreated							16.1
17	'B10244' - black bean							17.9
	Gramoxone SL	2	L	2	pt/a	50%	A	17.6
	Surfactant		L	0.25	% v/v	50%	A	
18	'B10244' - black bean							18.5
	Roundup PowerMax	4.5	L	22	fl oz/a	50%	A	18.1
	AMS		WG	17	lb/100 gal	50%	A	

MSU Weed Science Research Program

Weed Code
 Crop Code PHSVX PHSVX
 Rating Data Type moisture YIELD
 Rating Unit percent CWT
 Rating Date Oct/03/2013 Oct/03/2013
 Trt-Eval Interval 8 DA-B 8 DA-B
 # Subsamples, Dec. 1 1

Trt No.	Treatment Name	Form Conc	Form Type	Form Rate	Form Unit	Grow Stg	Appl Code		
19	'B10244' - black bean							17.7	16.1
	Sharpen	2.85	L	2	fl oz/a	50%	A		
	MSO		L	1	% v/v	50%	A		
	AMS		WG	17	lb/100 gal	50%	A		
20	'B10244' - black bean							19.0	18.2
	Untreated								
21	'B10244' - black bean							19.6	17.0
	Gramoxone SL	2	L	2	pt/a	80%	B		
	Surfactant		L	0.25	% v/v	80%	B		
22	'B10244' - black bean							19.6	15.9
	Roundup PowerMax	4.5	L	22	fl oz/a	80%	B		
	AMS		WG	17	lb/100 gal	80%	B		
23	'B10244' - black bean							18.3	18.6
	Sharpen	2.85	L	2	fl oz/a	80%	B		
	MSO		L	1	% v/v	80%	B		
	AMS		WG	17	lb/100 gal	80%	B		
24	'B10244' - black bean							18.9	17.6
	Untreated								
LSD (P=.05)								0.95	2.27
CV								3.69	9.72

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