

MSU Weed Science Research Program

Weed control and crop tolerance to F9140-8 in dry beans

Trial ID: DB07-13 Study Dir.: Sprague, Powell
 Conducted: Campus B-8 Investigator: Christy Sprague

Date Planted: Jun/20/2013 **Row Spacing:** 30 IN
Variety: 'Zorro' black bean **No. of Reps:** 4
Population: 106,000 seeds/A **% OM:** 3.5
Soil Type: Sandy loam **pH:** 6.8
Plot Size: 10 X 30 FT **Design:** RANDOMIZED COMPLETE BLOCK

Tillage: Spring soil finish x2
Fertilizer: 125 lbs 19-19-19 banded with planter

Crop and Weed Description

Weed	Code	Common Name	Scientific Name
1.	CHEAL	LAMBSQUARTERS, COMMON	CHENOPODIUM ALBUM L.
2.	AMASS	REDROOT PIGWEED, POWELL AMARANTH	AMARANTHUS SPP.
3.	AMBEL	RAGWEED, COMMON	AMBROSIA ARTEMISIIFOLIA L.
4.	ABUTH	VELVETLEAF	ABUTILON THEOPHRASTI MEDIK.
Crop	Code	Common Name	
1.	PHSVX	BEAN, DRY	

Application Description

	A	B	C
Application Timing:	PRE	POST	LPOS
Date Treated:	Jun/20/2013	Jul/08/2013	Jul/22/2013
Time Treated:	6:00 PM	8:15 AM	12:30 PM
% Cloud Cover:	0	90	60
Air Temp., Unit:	78 F	77 F	80 F
% Relative Humidity:	23	80	66
Wind Speed/Unit/Dir:	4 mph W	4 mph S	5 mph S
Soil Temp., Unit:	78 F	71 F	78 F
Soil/Leaf Surface M:	5 -	5 4	5 3
Soil Moist (1=w 5=d):	3	3	3

Crop Stage at Each Application

	A	B	C
Crop Name:	PHSVX	PHSVX	PHSVX
Height (In.):	-	6"	9"
Stage (L):	-	V1-V2	V7

Weed Stage at Each Application

	A	B	C
Weed 1 Name:	CHEAL	CHEAL	CHEAL
Height (In.):	-	1"	2"
Stage (L):	-	4	4
Weed 2 Name:	AMASS	AMASS	AMASS
Height (In.):	-	1"	-
Stage (L):	-	4	-
Weed 3 Name:	AMBEL	AMBEL	AMBEL
Height (In.):	-	1"	1"
Stage (L):	-	2	4
Weed 4 Name:	ABUTH	ABUTH	ABUTH
Height (In.):	-	1"	-
Stage (L):	-	2	-

Weed Density (plants/sq. ft.)

	1	2	3	4
Date:	Jul/11/2013	Jul/11/2013	Jul/11/2013	Jul/11/2013
Weed Name:	CHEAL	AMASS	AMBEL	ABUTH
Density:	4	<1	2	<1

Application Equipment

Appl	Sprayer	Speed	Nozzle	Nozzle	Nozzle	Nozzle	Boom	GPA	Carrier	PSI
	Type	MPH	Type	Size	Height	Spacing	Width			
A	Cub	3.8	AIXR	11003	24"	20"	100"	19	water	30
B	Cub	3.8	AIXR	11003	24"	20"	100"	19	water	30
C	Cub	3.8	AIXR	11003	27"	20"	100"	19	water	30

Comments: 6/20/13: Dual II Magnum at 1 pt/A was applied preemergence to the study area.

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Weed control and crop tolerance to F9140-8 in dry beans

Trial ID: DB07-13
Conducted: Campus B-8Study Dir.: Sprague, Powell
Investigator: Christy Sprague

Weed Code	CHEAL	AMASS	AMBEL	ABUTH	PHSVX
Crop Code					PHSVX
Rating Data Type	injury	control	control	control	injury
Rating Unit	percent	percent	percent	percent	percent
Rating Date	Jul/11/2013	Jul/11/2013	Jul/11/2013	Jul/11/2013	Jul/15/2013
Trt-Eval Interval	3 DA-B	3 DA-B	3 DA-B	3 DA-B	7 DA-B
# Subsamples, Dec.	0	0	0	0	0

Trt No.	Treatment Name	Form Conc	Form Type	Form Rate	Rate Unit	Grow Stg	Appl Code	PHSVX injury percent	CHEAL control percent	AMASS control percent	AMBEL control percent	ABUTH control percent	PHSVX injury percent
1	Untreated							0	0	0	0	0	0
2	Spartan Charge	3.5	L	5	fl oz/a	PRE	A	34	99	99	97	99	35
	F9140-8	1.8	L	0.356	fl oz/a	POST	B						
	Induce		L	0.25	% v/v	POST	B						
3	F9140-8	1.8	L	0.356	fl oz/a	POST	B	26	91	99	97	99	26
	Induce		L	0.25	% v/v	POST	B						
4	F9140-8	1.8	L	0.356	fl oz/a	POST	B	38	85	99	99	99	33
	Agridex		L	1	% v/v	POST	B						
5	F9140-8	1.8	L	0.356	fl oz/a	POST	B	24	91	99	98	99	25
	Induce		L	0.25	% v/v	POST	B						
	F9140-8	1.8	L	0.356	fl oz/a	LPOS	C						
	Induce		L	0.25	% v/v	LPOS	C						
6	F9140-8	1.8	L	0.356	fl oz/a	POST	B	36	97	99	98	99	34
	Agridex		L	1	% v/v	POST	B						
	F9140-8	1.8	L	0.356	fl oz/a	LPOS	C						
	Agridex		L	1	% v/v	LPOS	C						
7	Rezult B	5.45	L	1	pt/a	POST	B	0	0	0	0	3	0
	Agridex		L	1	% v/v	POST	B						
8	Rezult B	5.45	L	0.734	pt/a	POST	B	54	98	99	98	99	45
	F9140-8	1.8	L	0.356	fl oz/a	POST	B						
	Agridex		L	1	% v/v	POST	B						
9	Raptor	1	L	4	fl oz/a	POST	B	7	30	30	10	30	6
	Induce		L	0.25	% v/v	POST	B						
10	Raptor	1	L	4	fl oz/a	POST	B	24	97	99	95	99	28
	F9140-8	1.8	L	0.356	fl oz/a	POST	B						
	Induce		L	0.25	% v/v	POST	B						
11	Marvel	3	L	6	fl oz/a	POST	B	25	99	99	97	99	26
	Induce		L	0.25	% v/v	POST	B						
12	Marvel	3	L	6	fl oz/a	POST	B	38	99	99	99	99	41
	Agridex		L	1	% v/v	POST	B						
13	Reflex	2	L	1	pt/a	POST	B	6	69	99	99	92	3
	Agridex		L	1	% v/v	POST	B						
LSD (P=.05)								7.6	9.0	0.0	2.7	3.2	3.5
CV								22.16	8.63	0.0	2.5	2.82	10.69

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

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Weed Code	CHEAL	AMASS	AMBEL	ABUTH	
Crop Code					PHSVX
Rating Data Type	control	control	control	control	injury
Rating Unit	percent	percent	percent	percent	percent
Rating Date	Jul/15/2013	Jul/15/2013	Jul/15/2013	Jul/15/2013	Jul/22/2013
Trt-Eval Interval	7 DA-B	7 DA-B	7 DA-B	7 DA-B	14 DA-B
# Subsamples, Dec.	0	0	0	0	0

Trt No.	Treatment Name	Form Conc	Form Type	Form Rate	Rate Unit	Grow Stg	Appl Code	CHEAL	AMASS	AMBEL	ABUTH	PHSVX
1	Untreated							0	0	0	0	0
2	Spartan Charge	3.5	L	5	fl oz/a	PRE	A	99	99	92	98	7
	F9140-8	1.8	L	0.356	fl oz/a	POST	B					
	Induce		L	0.25	% v/v	POST	B					
3	F9140-8	1.8	L	0.356	fl oz/a	POST	B	86	99	87	97	7
	Induce		L	0.25	% v/v	POST	B					
4	F9140-8	1.8	L	0.356	fl oz/a	POST	B	93	98	93	99	9
	Agridex		L	1	% v/v	POST	B					
5	F9140-8	1.8	L	0.356	fl oz/a	POST	B	93	99	94	99	6
	Induce		L	0.25	% v/v	POST	B					
	F9140-8	1.8	L	0.356	fl oz/a	LPOS	C					
	Induce		L	0.25	% v/v	LPOS	C					
6	F9140-8	1.8	L	0.356	fl oz/a	POST	B	93	98	89	97	7
	Agridex		L	1	% v/v	POST	B					
	F9140-8	1.8	L	0.356	fl oz/a	LPOS	C					
	Agridex		L	1	% v/v	LPOS	C					
7	Rezult B	5.45	L	1	pt/a	POST	B	0	33	61	65	0
	Agridex		L	1	% v/v	POST	B					
8	Rezult B	5.45	L	0.734	pt/a	POST	B	97	99	90	98	9
	F9140-8	1.8	L	0.356	fl oz/a	POST	B					
	Agridex		L	1	% v/v	POST	B					
9	Raptor	1	L	4	fl oz/a	POST	B	81	99	89	93	4
	Induce		L	0.25	% v/v	POST	B					
10	Raptor	1	L	4	fl oz/a	POST	B	99	99	97	99	8
	F9140-8	1.8	L	0.356	fl oz/a	POST	B					
	Induce		L	0.25	% v/v	POST	B					
11	Marvel	3	L	6	fl oz/a	POST	B	98	99	99	99	7
	Induce		L	0.25	% v/v	POST	B					
12	Marvel	3	L	6	fl oz/a	POST	B	98	99	99	99	10
	Agridex		L	1	% v/v	POST	B					
13	Reflex	2	L	1	pt/a	POST	B	90	99	99	88	6
	Agridex		L	1	% v/v	POST	B					
LSD (P=.05)								4.0	6.1	12.0	12.8	2.0
CV								3.51	4.94	10.07	10.27	23.24

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

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Weed Code	CHEAL	AMASS	AMBEL	ABUTH	PHSVX
Crop Code					
Rating Data Type	control	control	control	control	injury
Rating Unit	percent	percent	percent	percent	percent
Rating Date	Jul/22/2013	Jul/22/2013	Jul/22/2013	Jul/22/2013	Jul/29/2013
Trt-Eval Interval	14 DA-B	14 DA-B	14 DA-B	14 DA-B	21 DA-B
# Subsamples, Dec.	0	0	0	0	0

Trt No.	Treatment Name	Form Conc	Form Type	Form Rate	Rate Unit	Grow Stg	Appl Code	CHEAL	AMASS	AMBEL	ABUTH	PHSVX
1	Untreated							0	0	0	0	0
2	Spartan Charge	3.5	L	5	fl oz/a	PRE	A	99	99	90	98	18
	F9140-8	1.8	L	0.356	fl oz/a	POST	B					
	Induce		L	0.25	% v/v	POST	B					
3	F9140-8	1.8	L	0.356	fl oz/a	POST	B	92	98	89	98	9
	Induce		L	0.25	% v/v	POST	B					
4	F9140-8	1.8	L	0.356	fl oz/a	POST	B	90	95	93	99	14
	Agridex		L	1	% v/v	POST	B					
5	F9140-8	1.8	L	0.356	fl oz/a	POST	B	93	94	95	99	18
	Induce		L	0.25	% v/v	POST	B					
	F9140-8	1.8	L	0.356	fl oz/a	LPOS	C					
	Induce		L	0.25	% v/v	LPOS	C					
6	F9140-8	1.8	L	0.356	fl oz/a	POST	B	94	96	88	95	30
	Agridex		L	1	% v/v	POST	B					
	F9140-8	1.8	L	0.356	fl oz/a	LPOS	C					
	Agridex		L	1	% v/v	LPOS	C					
7	Rezult B	5.45	L	1	pt/a	POST	B	33	49	54	40	0
	Agridex		L	1	% v/v	POST	B					
8	Rezult B	5.45	L	0.734	pt/a	POST	B	93	98	90	99	20
	F9140-8	1.8	L	0.356	fl oz/a	POST	B					
	Agridex		L	1	% v/v	POST	B					
9	Raptor	1	L	4	fl oz/a	POST	B	88	99	94	95	0
	Induce		L	0.25	% v/v	POST	B					
10	Raptor	1	L	4	fl oz/a	POST	B	96	99	94	99	11
	F9140-8	1.8	L	0.356	fl oz/a	POST	B					
	Induce		L	0.25	% v/v	POST	B					
11	Marvel	3	L	6	fl oz/a	POST	B	95	99	99	99	11
	Induce		L	0.25	% v/v	POST	B					
12	Marvel	3	L	6	fl oz/a	POST	B	95	99	97	98	21
	Agridex		L	1	% v/v	POST	B					
13	Reflex	2	L	1	pt/a	POST	B	92	99	99	88	0
	Agridex		L	1	% v/v	POST	B					
LSD (P=.05)								4.6	10.9	11.6	9.1	4.2
CV								3.96	8.8	9.75	7.46	25.44

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

MSU Weed Science Research Program

Weed Code	CHEAL	AMASS	AMBEL	ABUTH	
Crop Code					PHSVX
Rating Data Type	control	control	control	control	moisture
Rating Unit	percent	percent	percent	percent	percent
Rating Date	Jul/29/2013	Jul/29/2013	Jul/29/2013	Jul/29/2013	Nov/13/2013
Trt-Eval Interval	21 DA-B	21 DA-B	21 DA-B	21 DA-B	146 DA-A
# Subsamples, Dec.	0	0	0	0	1

Trt No.	Treatment Name	Form Conc	Form Type	Form Rate	Rate Unit	Grow Stg	Appl Code	CHEAL	AMASS	AMBEL	ABUTH	PHSVX
1	Untreated							0	0	0	0	21.1
2	Spartan Charge	3.5	L	5	fl oz/a	PRE	A	99	99	76	98	21.1
	F9140-8	1.8	L	0.356	fl oz/a	POST	B					
	Induce		L	0.25	% v/v	POST	B					
3	F9140-8	1.8	L	0.356	fl oz/a	POST	B	70	86	76	95	21.3
	Induce		L	0.25	% v/v	POST	B					
4	F9140-8	1.8	L	0.356	fl oz/a	POST	B	70	78	83	97	20.8
	Agridex		L	1	% v/v	POST	B					
5	F9140-8	1.8	L	0.356	fl oz/a	POST	B	90	97	92	99	20.2
	Induce		L	0.25	% v/v	POST	B					
	F9140-8	1.8	L	0.356	fl oz/a	LPOS	C					
	Induce		L	0.25	% v/v	LPOS	C					
6	F9140-8	1.8	L	0.356	fl oz/a	POST	B	88	99	84	95	21.1
	Agridex		L	1	% v/v	POST	B					
	F9140-8	1.8	L	0.356	fl oz/a	LPOS	C					
	Agridex		L	1	% v/v	LPOS	C					
7	Rezult B	5.45	L	1	pt/a	POST	B	0	45	46	59	20.8
	Agridex		L	1	% v/v	POST	B					
8	Rezult B	5.45	L	0.734	pt/a	POST	B	72	87	74	98	20.7
	F9140-8	1.8	L	0.356	fl oz/a	POST	B					
	Agridex		L	1	% v/v	POST	B					
9	Raptor	1	L	4	fl oz/a	POST	B	68	99	81	90	20.1
	Induce		L	0.25	% v/v	POST	B					
10	Raptor	1	L	4	fl oz/a	POST	B	89	99	85	99	20.3
	F9140-8	1.8	L	0.356	fl oz/a	POST	B					
	Induce		L	0.25	% v/v	POST	B					
11	Marvel	3	L	6	fl oz/a	POST	B	83	99	98	98	20.4
	Induce		L	0.25	% v/v	POST	B					
12	Marvel	3	L	6	fl oz/a	POST	B	81	99	96	96	20.6
	Agridex		L	1	% v/v	POST	B					
13	Reflex	2	L	1	pt/a	POST	B	74	99	99	84	20.2
	Agridex		L	1	% v/v	POST	B					
LSD (P=.05)								7.6	9.1	12.4	12.3	0.75
CV								7.83	7.63	11.39	10.14	2.53

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

MSU Weed Science Research Program

Weed Code
 Crop Code PHSVX
 Rating Data Type yield
 Rating Unit cwt/acre
 Rating Date Nov/13/2013
 Trt-Eval Interval at 13% M
 # Subsamples, Dec. 1

Trt No.	Treatment Name	Form Conc	Form Type	Form Rate	Rate Unit	Grow Stg	Appl Code	
1	Untreated							13.8
2	Spartan Charge	3.5	L	5	fl oz/a	PRE	A	22.1
	F9140-8	1.8	L	0.356	fl oz/a	POST	B	
	Induce		L	0.25	% v/v	POST	B	
3	F9140-8	1.8	L	0.356	fl oz/a	POST	B	20.9
	Induce		L	0.25	% v/v	POST	B	
4	F9140-8	1.8	L	0.356	fl oz/a	POST	B	19.1
	Agridex		L	1	% v/v	POST	B	
5	F9140-8	1.8	L	0.356	fl oz/a	POST	B	23.5
	Induce		L	0.25	% v/v	POST	B	
	F9140-8	1.8	L	0.356	fl oz/a	LPOS	C	
	Induce		L	0.25	% v/v	LPOS	C	
6	F9140-8	1.8	L	0.356	fl oz/a	POST	B	23.5
	Agridex		L	1	% v/v	POST	B	
	F9140-8	1.8	L	0.356	fl oz/a	LPOS	C	
	Agridex		L	1	% v/v	LPOS	C	
7	Rezult B	5.45	L	1	pt/a	POST	B	12.5
	Agridex		L	1	% v/v	POST	B	
8	Rezult B	5.45	L	0.734	pt/a	POST	B	19.5
	F9140-8	1.8	L	0.356	fl oz/a	POST	B	
	Agridex		L	1	% v/v	POST	B	
9	Raptor	1	L	4	fl oz/a	POST	B	21.8
	Induce		L	0.25	% v/v	POST	B	
10	Raptor	1	L	4	fl oz/a	POST	B	24.6
	F9140-8	1.8	L	0.356	fl oz/a	POST	B	
	Induce		L	0.25	% v/v	POST	B	
11	Marvel	3	L	6	fl oz/a	POST	B	23.5
	Induce		L	0.25	% v/v	POST	B	
12	Marvel	3	L	6	fl oz/a	POST	B	23.9
	Agridex		L	1	% v/v	POST	B	
13	Reflex	2	L	1	pt/a	POST	B	24.3
	Agridex		L	1	% v/v	POST	B	
LSD (P=.05)								5.66
CV								18.86

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