

Annual Morningglory Control in Blackeye Beans

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Preliminary Findings Report

A trial is being run at the UC Shafter Research and Extension Center to screen preplant, preemergence, and post-directed herbicides for annual morningglory control, crop tolerance, and yield in blackeye beans. Planting and treatment information and data collected to date are shown in the following tables.

Table 1. Treatment information

Location: Shafter Field Station, Field 22		Irrigation: Furrow		
Planted: 5/16/06 (cotton planter with soil cap)		Plot Size: 4, 40" beds wide and 45' long with 4 reps		
Variety: CB-46		PPI = preplant incorporated with bed mulcher		
Treated: 5/16 (PPI and PRE) and 6/29 (PD)		PRE = post-plant, preemergence		
Sprayer: Ground boom sprayer		PD = postemergence, directed after 2 nd water (row closure)		
Volume: 14 GPA (PPI and PRE), 30 GPA (PD)		Nozzles: XR8002VS (6) PPI and PRE; 8002EVS (8) PD		
Treatment	Lb ai/Acre	Rate/Acre	Timing	Date
1. Untreated	---	---	---	---
2. Dual Magnum 7.62	2.0	33.5 fl oz	PPI	5/16
Sonalan HFP 3.0	0.47	20 fl oz	PPI	5/16
Chateau 51 WD	0.06375	2 oz	PD	6/29
3. Dual Magnum 7.62	2.0	33.5 fl oz	PPI	5/16
Sonalan HFP 3.0	0.47	20 fl oz	PPI	5/16
Chateau 51 WD	0.1275	4 oz	PD	6/29
4. Dual Magnum 7.62	2.0	33.5 fl oz	PPI	5/16
Sonalan HFP 3.0	0.47	20 fl oz	PPI	5/16
Shark EW 1.9**	0.0155	1 fl oz	PD	6/29
5. Prowl H ₂ O 3.8	1.2	40 fl oz	PRE	5/16
GoalTender 4F	0.125	4 fl oz	PRE	5/16
Shark EW 1.9**	0.031	2 fl oz	PD	6/29
6. Chateau 51 WD	0.06375	2 oz	PRE	5/16
Chateau 51 WD	0.06375	2 oz	PD	6/29
7. Chateau 51 WD	0.06375	2 oz	PRE	5/16
Chateau 51 WD	0.09563	3 oz	PD	6/29
8. Chateau 51 WD	0.06375	2 oz	PRE	5/16
Chateau 51 WD	0.1275	4 oz	PD	6/29
9. Raptor 1.0 SL	0.031	4 fl oz	PRE	5/16
Chateau 51 WD	0.06375	2 oz	PRE	5/16
Chateau 51 WD	0.06375	2 oz	PD	6/29
10. Raptor 1.0 SL	0.031	4 fl oz	PRE	5/16
Chateau 51 WD	0.06375	2 oz	PRE	5/16
Shark EW 1.9**	0.031	2 fl oz	PD	6/29
11. Chateau 51 WD	0.03125	2 oz	PRE	5/16
Prowl H ₂ O 3.8	1.2	40 fl oz	PRE	5/16
Matrix 25%*	0.0315	2 oz	PD	6/29
12. Chateau 51 WD	0.06375	2 oz	PRE	5/16
Prowl H ₂ O 3.8	1.2	40 fl oz	PRE	5/16
Matrix 25%*	0.0625	4 oz	PD	6/29
13. Sandea 75%	0.0234	0.5 oz	PRE	5/16
Chateau 51 WD	0.06375	2 oz	PRE	5/16
14. Sandea 75%	0.0468	1 oz	PRE	5/16
Chateau 51 WD	0.06375	2 oz	PRE	5/16
15. Chateau 51 WD	0.03125	2 oz	PRE	5/16
Prowl H ₂ O 3.8	1.2	40 fl oz	PRE	5/16
Sanda 75%*	0.0234	0.5 oz	PD	6/29

*Non-ionic surfactant added at 0.25% v/v **crop oil concentrate added at 0.1% v/v

Table 2. Annual morningglory control

Treatment	Rate/Acre	Timing	Monningglory Control on 7/19				Growth ²		
			Total MG Per plot ¹	% MG Killed	% MG Injured	% MG Unaffected	7/19	8/7	
1. Untreated	---	---	24.0 abc	0.0 d	0.0 c	100.0 a	3.3 a	4.0 a	
2. Dual Magnum 7.62 Sonalan HFP 3.0 Chateau 51 WD	33.5 fl oz 20 fl oz 2 oz	PPI PPI PD	25.5 ab	25.5 abc	58.3 ab	16.2 cd	0.8 cde	2.0 bc	
3. Dual Magnum 7.62 Sonalan HFP 3.0 Chateau 51 WD	33.5 fl oz 20 fl oz 4 oz	PPI PPI PD	24.0 abc	19.4 abc	60.1 ab	20.5 cc	1.5 b	1.6 cde	
4. Dual Magnum 7.62 Sonalan HFP 3.0 Shark EW 1.9**	33.5 fl oz 20 fl oz 1 fl oz	PPI PPI PD	27.3 a	21.7 abc	66.3 ab	12.0 d	0.9 bcd	0.8 ef	
5. Prowl H ₂ O 3.8 GoalTender 4F Shark EW 1.9**	40 fl oz 4 fl oz 2 fl oz	PRE PRE PD	22.3 abcd	25.5 abc	59.2 ab	15.3 cd	1.3 bc	1.8 bcd	
6. Chateau 51 WD Chateau 51 WD	2 oz 2 oz	PRE PD	17.0 bcd	24.7 abc	58.9 ab	16.4 cd	0.5 def	1.0 def	
7. Chateau 51 WD Chateau 51 WD	2 oz 3 oz	PRE PD	12.8 de	16.9 bc	59.2 ab	21.9 cd	0.3 ef	0.6 f	
8. Chateau 51 WD Chateau 51 WD	2 oz 4 oz	PRE PD	18.5 abcd	31.0 a	52.4 ab	16.6 cd	1.0 bcd	2.5 b	
9. Raptor 1.0 SL Chateau 51 WD Chateau 51 WD	4 fl oz 2 oz 2 oz	PRE PRE PD	14.0 de	15.9 bc	71.2 a	12.9 cd	0.3 ef	1.1 def	
10. Raptor 1.0 SL Chateau 51 WD Shark EW 1.9**	4 fl oz 2 oz 2 fl oz	PRE PRE PD	14.3 de	27.1 ab	54.1 ab	18.8 cd	0.0 f	0.4 f	
11. Chateau 51 WD Prowl H ₂ O 3.8 Matrix 25%*	2 oz 40 fl oz 2 oz	PRE PRE PD	14.3 de	2.2 d	51.3 b	46.5 b	0.3 ef	1.5 cde	
12. Chateau 51 WD Prowl H ₂ O 3.8 Matrix 25%*	2 oz 40 fl oz 4 oz	PRE PRE PD	15.8 cde	13.6 c	55.6 ab	30.8 bcd	0.3 ef	2.0 bc	
13. Sandea 75% Chateau 51 WD	0.5 oz 2 oz	PRE PRE	17.5 bcde	16.1 bc	65.2 ab	18.7 cd	1.5 b	1.8 bcd	
14. Sandea 75% Chateau 51 WD	1 oz 2 oz	PRE PRE	19.3 abcd	15.5 bc	69.1 ab	13.4 cd	1.0 bcd	2.0 bc	
15. Chateau 51 WD Prowl H ₂ O 3.8 Sanda 75%*	2 oz 40 fl oz 0.5 oz	PRE PRE PD	8.8 e	14.3 c	53.4 ab	32.3 bc	0.3 ef	1.6 cde	
Statistical notation at p=0.05			CV:	30.92%	40.77%	20.14%	43.92%	45.63%	32.39%
			LSD:	8.09	10.44	15.98	16.38	0.56	0.76

MG = annual morningglory

¹Morningglory plants counted per plot in center 2 rows (5') from furrow to furrow

²Morningglory growth – visual rating of bean canopy covered by annual morningglory plants; 0 = no cover, 5 = 100% cover

Table 3. Blackeye bean growth, injury, and pod set

Treatment	Rate/Acre	Timing	Crop Growth ¹		Crop Injury ²		Pod Set ³		
			7/19	8/7	7/19	8/7	7/19	8/7	
1. Untreated	---	---	5.0 a	4.0	0.0 d	0	4.8 a	3.1 c	
2. Dual Magnum 7.62 Sonalan HFP 3.0 Chateau 51 WD	33.5 fl oz 20 fl oz 2 oz	PPI PPI PD	4.8 a	4.3	1.8 abc	0	4.3 ab	4.3 ab	
3. Dual Magnum 7.62 Sonalan HFP 3.0 Chateau 51 WD	33.5 fl oz 20 fl oz 4 oz	PPI PPI PD	5.0 a	4.5	1.5 abc	0	3.8 ab	4.5 ab	
4. Dual Magnum 7.62 Sonalan HFP 3.0 Shark EW 1.9**	33.5 fl oz 20 fl oz 1 fl oz	PPI PPI PD	4.8 a	4.8	1.3 bc	0	4.0 ab	4.4 ab	
5. Prowl H ₂ O 3.8 GoalTender 4F Shark EW 1.9**	40 fl oz 4 fl oz 2 fl oz	PRE PRE PD	4.3 a	4.0	1.0 bcd	0	4.5 ab	3.9 b	
6. Chateau 51 WD Chateau 51 WD	2 oz 2 oz	PRE PD	4.8 a	4.6	1.0 bcd	0	3.5 b	4.8 a	
7. Chateau 51 WD Chateau 51 WD	2 oz 3 oz	PRE PD	4.5 a	4.6	1.8 abc	0	4.3 ab	4.5 ab	
8. Chateau 51 WD Chateau 51 WD	2 oz 4 oz	PRE PD	4.5 a	4.3	2.0 ab	0	3.5 b	4.3 ab	
9. Raptor 1.0 SL Chateau 51 WD Chateau 51 WD	4 fl oz 2 oz 2 oz	PRE PRE PD	5.0 a	4.6	1.8 abc	0	4.5 ab	4.6 ab	
10. Raptor 1.0 SL Chateau 51 WD Shark EW 1.9**	4 fl oz 2 oz 2 fl oz	PRE PRE PD	4.8 a	4.5	0.8 cd	0	4.8 a	4.8 a	
11. Chateau 51 WD Prowl H ₂ O 3.8 Matrix 25%*	2 oz 40 fl oz 2 oz	PRE PRE PD	3.5 b	4.6	2.0 ab	0	1.5 c	2.3 de	
12. Chateau 51 WD Prowl H ₂ O 3.8 Matrix 25%*	2 oz 40 fl oz 4 oz	PRE PRE PD	2.5 c	4.5	2.5 a	0	0.5 d	2.1 e	
13. Sandea 75% Chateau 51 WD	0.5 oz 2 oz	PRE PRE	5.0 a	4.5	1.0 bcd	0	4.5 ab	4.4 ab	
14. Sandea 75% Chateau 51 WD	1 oz 2 oz	PRE PRE	5.0 a	4.5	1.0 bcd	0	4.3 ab	4.4 ab	
15. Chateau 51 WD Prowl H ₂ O 3.8 Sandea 75%*	2 oz 40 fl oz 0.5 oz	PRE PRE PD	5.0 a	4.6	1.5 abc	0	2.0 c	3.0 cd	
Statistical notation at p=0.05			CV:	10.27%	11.67%	50.42%	0.00%	16.68%	12.93%
			LSD:	0.67	n.s.	0.10	n.s.	0.86	0.73
¹ Crop growth based on a visual rating of 0 to 5; 0 = no growth and 5 = vigorously growing plants									
² Crop injury based on a visual scale of 0 to 5; 0 = no injury and 5 = all plants are killed									
³ Pod set based on a visual rating of 0 to 5; 0 = no pods formed and 5 = all plants having a large number of pods									