

WEED CONTROL IN BLACKEYE BEANS

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A Pesticide Research Authorization from the State of California for weed control trials in blackeye beans allowed the use of non-registered and experimental herbicides such as Frontier, Authority, Pursuit and Raptor to be evaluated alone and in combination with currently registered herbicides for weed control. The Shafter Research and Extension Center site is of major importance because it is located in the major blackeye bean growing area.

The field was divided into four 40-inch rows by 25 feet long plots and replicated 3 times in a randomized complete block. Preplant incorporated treatments were applied May 22, 2000 using a hand held CO₂ backpack sprayer. Herbicides were applied, to the entire plot, in 20 gallons of spray solution per acre using 80015 nozzles at 30 psi. Immediately after the last herbicide application all beds were reshaped using a power incorporator bed shaper. Two rows of California Blackeye 27 were then planted per 40 inch bed. The post plant surface treatments of Authority or Aim were then applied.

Prior to the post emergence treatments on June 22, 2000 all plots were evaluated for morningglory control. Post emergence treatments were also made in 20 gallons of spray solution per acre. Herbicides were applied over the top of the blackeye beans to evaluate both morningglory control and injury to the beans. A second evaluation was made August 2, 2000. Attempt at a third evaluation on August 24, 2000 showed that our individual plot size was too small and that morningglory from one plot had spread throughout surrounding plots.

The preplant treatments of Sonalan and Dual Magnum + Prowl gave satisfactory early control of the morningglory. The addition of Pursuit + Crop Oil Concentrate to Dual Magnum, Dual Magnum + Prowl or Frontier gave added morningglory control. Only Raptor at the .047 lb ai + 1 quart of COC per acre caused any visual damage to the blackeye beans. This injury was noted as a loss of early flowers, which delayed the blackeye pod set. The soil active herbicides such as Authority and Pursuit were tested at reduced rates for weed control and to reduce herbicide residuals.

The Hairy and Black Nightshade trial that was also established on May 20, 2000 at the Shafter Research and Extension Center was terminated due to the lack of any weed pressure. The original site for the nightshade trial area was accidentally over sprayed with cotton herbicides.

TABLE 1: Treatment List, Rate and Timing of Herbicides for Annual Morningglory Control in Blackeye Beans. May 22, 2000. Shafter Research and Extension Center

HERBICIDE	RATE (LB AI/A)	TIMING
A. Dual Magnum	1.6	PPI
B. Dual Magnum + Pursuit + COC	1.6 + .032 + 1qt	PPI Post Emergent
C. Dual Magnum + Prowl	1.6 + 1.2	PPI
D. Dual Magnum + Prowl + Pursuit + COC	1.6 + 1.2 + .032 + 1qt	PPI Post Emergence
E. Frontier	1.0	PPI
F. Frontier + Pursuit + COC	1.0 + .032 + 1qt	PPI Post Emergence
G. Sonalan	.75	PPI
H. Authority	.25	PPI
I. Authority	.25	Post Plant Surface
J. Aim	0.625	Post Plant Surface
K. Pursuit + COC	.047 + 1qt	Post Emergence
L. Pursuit + COC	.032 + 1qt	Post Emergence
M. Pursuit + COC	.0235 + 1qt	Post Emergence
N. Raptor + COC	.047 + 1qt	Post Emergence
O. Raptor + COC	.032 + 1qt	Post Emergence
P. Raptor + COC	.0235 + 1qt	Post Emergence
Q. Frontier	1.0	Post Emergence
R. Untreated Control	-----	

TABLE 2: % Annual Morningglory Control, % Blackeye Bean Injury and Yield Shafter Research and Extension Center, Kern County

TREATMENT	RATE LB AI/A	% MORNING GLORY CONTROL		% BLACKEYE CONTROL	YIELD (LB/A)
		06/22/00	08/2/00	08/02/00	10/16/00
A. Dual Magnum	1.6	60	60	0	1854
B. Dual Magnum + Pursuit + COC	1.6 + .032 + 1 qt	48	70	0	1837
C. Dual Magnum + Prowl	1.6 + 1.2	68	63	0	2550
D. Dual Magnum + Prowl + Pursuit + COC	1.6 + 1.2 + .032 + 1 qt	70	80	0	2550
E. Frontier	1	57	55	0	2256
F. Frontier + Pursuit + COC	1 + .032 + 1 qt	54	75	0	2247
G. Sonalan	0.75	90	50	0	2408
H. Authority	0.25	75	57	0	2042
I. Authority	0.25	66		0	2483
J. Aim	0.625	28		0	2190
K. Pursuit + COC	.047 + 1 qt	0		0	2705
L. Pursuit + COC	.032 + 1 qt	13		0	2308
M. Pursuit + COC	.0235 + 1 qt	0		0	2378
N. Raptor + COC	.047 + 1 qt	23		40 ¹	1933
O. Raptor + COC	.032 + 1 qt	16		10	2125
P. Raptor + COC	.0235 + 1 qt	12		0	2195
Q. Frontier	1	0		0	2146
R. Untreated Control	-	0		0	2183

¹ = Delay in Blackeye Bean Set