

Alternatives to glyphosate for preemergence weed control.

The objective of the study was to evaluate possible alternatives to glyphosate for kochia control. Glyphosate-resistant kochia is known to exist in the state. In this study, we evaluated other herbicides that might be used in place of glyphosate for kochia control. No crop was planted in this field due to wet soil conditions. All treatments were applied June 18 (kochia 1.5-4 inch, lambsquarters 3-5 inch, seepweed 1-4 inch, prickly lettuce 4-6 inch). Authority MTZ and Express did not control kochia 10 days after treatment. Only Gramoxone, Spartan Charge, and Spartan + Sharpen provided excellent kochia control at the Aug 6 evaluation (7 weeks after treatment). Glyphosate, Sharpen, Liberty, and Authority MTZ provided significantly less kochia control on Aug 6. This lower level of control may be due in part to a later flush, but we believe that few new plants emerged after application. Gramoxone has no residual activity, yet provided 92% control on Aug 6. Most treatments provided excellent control of lambsquarters, seepweed, and prickly lettuce. The only exceptions were Authority MTZ and Spartan Charge, which provided poor prickly lettuce control.

Treatment ^a	Rate	Weed Control									
		Kochia			Lambsquarters		Seepweed		Prickly lettuce		
		Jun-28	Jul-16	Aug-6	Jun-28	Jul-16	Jun-28	Jul-16	Jun-28	Jul-16	
		-----%-----			-----%-----		-----%-----		-----%-----		
Untreated		0	0	0	0	0	0	0	0	0	
Glyphosate ^b	22 oz	90	83	57	96	100	89	93	93	94	
Sharpen ^{bc}	1 oz	88	90	75	100	100	100	100	100	100	
Gramoxone ^d	2 pt	99	97	92	100	100	100	100	100	100	
Liberty ^e	29 oz	90	88	67	100	100	100	100	98	100	
Express ^d	0.33 oz	20	17	3	83	99	91	98	89	99	
Authority MTZ	11 oz	60	69	55	98	100	99	100	27	57	
Spartan Charge ^c	5 oz	98	97	97	100	100	100	100	50	65	
Spartan + Sharpen ^{bc}	4 oz + 1 oz	99	99	98	100	100	100	100	100	100	
LSD (0.05)		8.8	9.3	14.0	2.0	0.3	6.1	6.9	7.1	5.4	
CV		8.4	9.1	15.9	1.3	0.2	4.1	4.5	5.6	4.4	
^a All treatments applied June 18 (no crop-prevent plant)											
^b Applied with AMS (2.5%)											
^c Applied with MSO (1%)											
^d Applied with NIS (0.25%)											
^e Applied with AMS (3 lb/A)											