

Response of cotton and weeds to directed, postemergence herbicides following preplant Caparol.

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A test was conducted in 1981 at the Cotton Research Center, Phoenix to evaluate the response of cotton and weeds to directed, postemergence herbicides following preplant Caparol. This type of herbicide application may fit into a program designed to control weeds which emerge after the first and second postemergence irrigations.

The test was in an area where no cotton was grown the previous year and Palmer amaranth, Wright groundcherry, barnyardgrass and junglerice were allowed to produce seed. Caparol, 1.6 lb/A, was applied February 27 and incorporated by discing March 11. The field was preirrigated March 18 and planted with Deltapine 70 seed on April 2. Postemergence herbicide treatments were applied as a 6-inch band of spray directed to the base of cotton plants on each side of the row. Herbicides were applied in 20 GPA water using a hand-held sprayer and low-pressure nozzles. The first application was made May 13 when the cotton was 4 to 8 inches tall. The spray contacted the lower 2 inches of cotton plants. The second application was made June 18 when the cotton was 20-24 inches tall. The spray contacted the lower 4 inches of cotton plants. There was some seedling grass present at both application dates. Karmex, 1.0 lb/A, was applied to the furrow and lower 4 inches of cotton on June 4. The field was cultivated three times and irrigated eight times. Treated plots were four, 40-inch beds, 42 feet long and treatments were replicated four times. The plots were harvested by machine in November. The soil was a clay loam.

Caparol applied preplant caused chlorosis on cotyledon leaves of cotton. MSMA combined with Caparol, Karmex, or Bladex caused chlorosis on cotton leaves contacted by the spray. Karmex caused less chlorosis than did Caparol or Bladex. Application of these treatments in June caused necrosis, in addition to chlorosis, on sprayed leaves. Goal caused purple-colored speckling of cotton leaves contacted by spray. Application of Goal in June caused necrosis, distortion, and abscission of lower leaves. PPG-884 caused purple-colored speckling on all leaves of cotton plants. It also caused severe necrosis and stunting on small cotton plants and necrosis on the lower leaves of large plants contacted by the spray. Stunting was observed until July.

In mid-July cotton in all plots was growing vigorously and only slight symptoms on lower leaves could be observed. The yield of seed cotton was not reduced by any herbicide treatment. Weed control was very good in all plots throughout the growing season.

Yield of cotton after application of directed, postemergence herbicides on two dates.

Treatment in May and June				Weed control in Oct.				Yield of seed cotton ^{1/} lb/A
Herbicide	lb/A	Herbicide	lb/A	% X-77		percent est'd.		
				May	June	Broadleaf	Grass	
Caparol	0.5	MSMA	2.0	0.125	0.5	100	100	4470 a
Karmex	0.5	MSMA	2.0	0.125	0.5	100	98	4570 a
Bladex	1.0	MSMA	2.0	0.125	0.5	100	100	4560 a
Cotoran	1.0	MSMA	2.0	0.125	0.5	100	99	4360 a
MSMA	2.0			0.125	0.5	97	95	4330 a
S-734	1.0				None	98	100	4310 a
Goal	0.5				None	100	96	4540 a
PPG-884	0.25			0.125	0.5	99	91	4250 a

^{1/} Values followed by the same letter are not significantly different.