

TITLE: Rotational Cotton Response to Pursuit and Cadre

AUTHORS:

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MATERIALS AND METHODS:

Plot Size:	4 rows by 30 feet
Soil Type:	Loamy fine sand
Planting Date:	May 18, 2001
Variety:	PM 2326 BG/RR
Irrigation/rainfall:	Preplant = 5.3 inches In-season = 16.3 inches
Application Date:	April 26, 2001
Harvest Date:	November 26

RESULTS AND DISCUSSION:

Peanut growers have a variety of selective herbicides to choose from, but must be aware of their rotational restrictions. Imazapic (Cadre) and imazethapyr (Pursuit) control a broad spectrum of broadleaf weeds and have activity on yellow and purple nutsedge. These imidazolinone herbicides have significant soil residual activity to injure rotational crops. Cotton, which is susceptible to residues of imazapic and imazethapyr, is commonly rotated with peanut in Texas and across other peanut production regions. The objective of this experiment was to correlate cotton response (stand, visual injury, yield) to soil residual concentrations of imazapic and imazethapyr.

No reduction in cotton stand was observed on Jun 1 (2 weeks after planting (WAP)) at Denver City; however, on Nov 1 (24 WAP) cotton stand was reduced when rates were averaged across herbicides (data not shown)

Cotton injury by imazapic and imazethapyr at 0.008 to 0.032 lb ai/A was greater than 50% Jun 1 (2 WAP). Imazapic was more injurious than imazethapyr at the 0.002 to 0.016 lb/A rates. On Jun 29 (6 WAP), imazapic and imazethapyr at 0.004 to 0.032 lb/A injured cotton at least 60%. Imazapic was more injurious than imazethapyr at the 0.001 to 0.016 lb/A rates. On Aug 9 (12 WAP) and Sep 28 (19 WAP), imazapic injured cotton greater than imazethapyr when averaged across rates.

Lint yield at Denver City was reduced in plots treated with the 0.008 to 0.032 lb/A rates when averaged across herbicides. Lint yield from imazapic-treated plots was less than imazethapyr-treated plots when averaged across rates. These results suggest there is a significant risk of cotton injury from high residues of imazapic and imazethapyr. Imazapic was always at least as injurious as imazethapyr at all locations and rates

Table 1.

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Treatment	Rate	Cotton Injury (%)				Cotton Lint Yield lb/A
		6/1	6/29	10/28	8/9	
Non-treated	0	0	0	0	0	964
Cadre	0.032	78	100	99	100	0
Cadre	0.016	76	98	85	94	175
Cadre	0.008	62	85	55	63	699
Cadre	0.004	45	81	43	43	713
Cadre	0.002	42	48	30	20	937
Cadre	0.001	13	16	7	7	1075
Pursuit	0.032	77	100	92	97	88
Pursuit	0.016	63	89	63	79	434
Pursuit	0.008	53	70	37	50	741
Pursuit	0.004	28	60	20	23	958
Pursuit	0.002	9	17	10	8	1035
Pursuit	0.001	3	7	0	3	1065
LSD(0.05)			10	15	14	272