

Effect of RESPOND and PIX on Short Staple Cotton, 1986.

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INTRODUCTION

The effects of RESPOND and PIX were tested on irrigated short staple cotton at the Marana and Maricopa Agricultural Centers during 1986. RESPOND is labeled as a crop and soil supplement to improve plant growth and yield. PIX is a commercially available plant regulator that modifies plant architecture and may or may not have a response on yield. The objective of this research was to determine the effects of these chemicals on plant height and seed cotton yield at two locations.

METHODS AND MATERIALS

Varieties used were Deltapine 50 at Marana, and Deltapine 90 at Maricopa. A randomized complete block design with five replications was used at Maricopa. The experimental design at Marana consisted of a Latin square with six replications. A total of six treatments were used at both locations consisting of the chemicals applied alone, and in combination (Table 1). Plots consisted of four rows 30 feet long, with the middle two rows harvested for yield. Plant heights were obtained on 25 July, and 14 August at Marana. At Maricopa, plant heights were obtained on 18, 25 July, and 6 August.

Table 1. Rates, and application dates of RESPOND and PIX applied at Marana and Maricopa Agricultural Centers, 1986.

Treatment	Chemical & Date (Marana) ¹	Chemical & Date (Maricopa) ¹
1	RESPOND, 20 Jun	RESPOND, 20 Jun
2	RESPOND, 20 Jun + PIX, 10 Jul	RESPOND, 20 Jun + PIX, 7 Jul
3	RESPOND, 7 Jul	RESPOND, 7 Jul
4	RESPOND, 7 Jul + PIX, 10 Jul	RESPOND, 7 Jul + PIX, 14 Jul
5	PIX, 10 Jul	PIX, 14 Jul
6	Check	Check

¹Tank mix to deliver 40 g.p.a. for both products; RESPOND at 12 oz. product/acre; PIX at 1 pt. product/acre.

DISCUSSION

Significant differences in plant height were obtained at Marana on both 25 July, and 14 August (Table 2). On 25 July, treatment 3 was significantly taller than either treatments 2 or 4. By 14 August, treatments 3, 1, and 6 were all significantly taller than treatment 2.

At Maricopa, no significant differences in plant height were observed (Table 3). There was greater field variation in the test at Maricopa compared to Marana.

Table 2. Plant heights of RESPOND and PIX treatments at Marana, 1986.

25 July		14 August	
Treatment	Height (cm)	Treatment	Height (cm)
3	114.8 a*	3	120.3 a
6	112.0 ab	1	120.3 a
1	111.0 ab	6	118.0 a
5	108.2 ab	4	107.5 ab
2	107.0 b	5	105.5 ab
4	106.0 b	2	102.5 b

**Means followed by the same letter are not statistically different at the 0.05 level according to the Student-Newman-Keuls' Test.*

Table 3. Plant height of RESPOND and PIX treatments at Maricopa, 1986

18 July		25 July		6 August	
Treatment	Height(cm)	Treatment	Height(cm)	Treatment	Height(cm)
4	102.8 n.s.*	1	111.3 n.s.	3	115.5 n.s.
3	102.0	3	110.8	1	114.0
6	101.8	4	109.8	4	113.0
1	101.8	6	107.5	6	112.0
5	94.5	5	99.8	5	97.5
2	89.5	2	95.3	2	92.5

**No significant differences at the 0.05 level.*

The cotton was machine harvested at Marana on 18 November and 2 December. No significant differences in seed cotton yield were obtained on either the first, second, or cumulative harvest at Marana (Table 4). At Maricopa, only one machine harvest (20 November) was required. Seed cotton yields ranged from 22.4 to 23.6 lb/plot with no significant differences observed (Table 5).

Table 4. Seed cotton yield from RESPOND and PIX treatments at Marana, 1986.

Treatment	lb seed cotton/plot		
	First Pick	Second Pick	Final Yield
4	19.0 n.s.*	2.4 n.s.	21.4 n.s.
3	19.4	1.9	21.3
2	18.4	2.5	20.9
5	18.3	2.3	20.6
1	18.5	2.0	20.5
6	18.3	1.9	20.2

**No significant differences at the 0.05 level.*

Table 5. Seed cotton yield from RESPOND and PIX treatments at Maricopa, 1986.

Treatment	Seed cotton yield (lb/plot)
6	23.5 n.s.*
2	23.5
5	23.4
4	23.1
3	22.7
1	22.4

**No significant differences at the 0.05 level.*

Results of these experiments indicated no significant yield response from either chemical under the conditions of these tests. Since only final yield was obtained, there is no way to know if these chemicals had any effect on crop earliness.

Plant height was significantly reduced only by treatments which included PIX at Marana. There were large arithmetic differences in plant height at Maricopa with use of PIX but not statistical