

LARGE BOLLS/100 FT OF ROW\*

	<u>6/24</u>	<u>7/2</u>	<u>7/15</u>	<u>7/29</u>	<u>8/12</u>
25/25 ft PIX	193	420	1653	2333	3807
25/25 ft Check	193	553	1620	2407	3480
5/25 ft PIX	---	60	980	2840	3360
5/25 ft Check	---	27	927	1940	2983

\* Fruiting data was recorded by Ezra Yejeskel

YIELD PER ACRE

**COOPERATOR JACOB TAHAN A-TUMBLING T RANCHES**

Flowering Rate at <u>Treatment Date</u>	Lbs Lint <u>Per Acre</u>
25/25 ft - PIX	1793
25/25 ft - Check	1684
5/25 ft - PIX	1594
5/25 ft - Check	1476

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**Effects of PIX and PREP on Long and Short Staple Cotton  
Safford Agricultural Center**

Lee J. Clark, Research Specialist; L. Max Thatcher, Farm Manager

Summary

Effects of 5 rates of PREP and 2 application dates of PIX were evaluated on long staple (S-6) and short staple (DP 90) cotton. Generally, crop maturity increased linearly with increasing rates of PREP. Some yield trends were seen with PREP applications. Timing of PIX application is important. Too early applications shorten plants but may slightly decrease yields; too late applications have very little effect.

Introduction

Preliminary studies carried out in Graham and Greenlee counties in 1984(1), showed that PREP caused increased yields in the first pick on both long and short staple cotton but caused a decrease in overall yield on the long staple. Second pick data was not available on the short staple trials so the effect on overall yield could not be evaluated.

The PREP portion of this trial was designed to explore a lower range of rates of PREP on long staple cotton to see if the beneficial effects of earlier boll opening could be retained without the detrimental losses in overall yields, and to evaluate the effects of PREP on the overall yield of short staple cotton.

The effects of PIX applied in a split application on several varieties of short staple cotton in 1984(2) caused decreases in yields whereas a single application caused an increase in yield for the first pick on one short staple variety. The PIX part of this study was designed to determine the effects of PIX on long and short staple cotton in a single application but at two application dates.

Methods and Materials

SOIL TYPE: Guest clay loam  
PREVIOUS CROP: Alfalfa  
TILLAGE: Plowed, disked, planed, listed, harrowed.  
EXPERIMENTAL DESIGN: Two randomized complete block designs (one for long and one for short staple cotton), 4 replications ea.  
PLOT SIZE: 30 feet long, 4 rows wide  
PLANTING: 25 lbs/ac on 23 April 1985  
HERBICIDE: 1.5 pts/ac Prowl + 4 pts/ac Prometryne on 4 March  
1.2 lbs/ac Prometryne on 9 July  
FERTILIZER: 158 lbs/ac 16-20-0 on 19 March, 100 lbs/ac of urea on 11 June and 25 June.  
PIX APPLICATION: At 15" plant height (20 July) and 35" plant height (16 August).  
PREP APPLICATION: At approximately 30% boll opening (14 October)  
IRRIGATION: 7 times, approx. 34 acre inches (includes pre-irrig)  
HARVEST: 5 November and 5 December

Results

**Table 1. Effects of PREP on Yield of Lint in lbs/ac and Plant Height in Inches for Long and Short Staple Cotton**

RATE (qts/ac)	Long Staple			Short Staple		
	% 1st Pick	Yield	Ht	% 1st Pick	Yield	Ht
0	88	1129	38	84	1258	41
.25	90	1095	36	--	--	--
.50	91	1138	37	84	1264	46
1.0	92	1141	37	92	1291	44
1.5	94	1143	38	91	1308	45
2.0	--	--	--	92	1257	45

**Table 2. Effects of PIX on Yield of Lint in lbs/ac and Plant Height in Inches for Long and Short Staple Cotton**

RATE (pts/ac)	Long Staple			Short Staple		
	% 1st Pick	Yield	Ht	% 1st Pick	Yield	Ht
0	90	1129	39	90	1303	45
1 early	91	1101	35	86	1255	40
1 late	92	1159	39	90	1268	47

Discussion

Effect of PREP on Long Staple: (1) Increased rates of PREP increased the percent of lint in the first picking without a reduction in overall yield. (2) There were no statistical differences in yields, but with the exception of the .25 qt/ac treatment, yields increased with the rate of PREP applied.

Effect of PREP on Short Staple: (1) Rates above 1 qt/ac increased first pick yields significantly. (2) There were no statistical differences in yields, but the yields appeared to peak out at 1.5 qt/ac.

Effects of PIX: The applications were made earlier than recommended and later than recommended to evaluate the consequences. Too early applications decrease plant heights significantly and cause small but statistically insignificant decreases in yield. Too late applications don't significantly affect the height nor yield. The yield trends indicate that it is better not to apply PIX at all than to apply it too early or too late. For results of PIX applied as recommended see (2).

References

(1) Clark, L. J. "Yield and Economical Outcome of Different Rates of Ethephon (PREP™) to Short and Long Staple Cotton." University of Arizona, College of Agriculture Annual Cotton Report. pp.60-62. 1985.

(2) Clark, L. J., et. al. "Effect of PIX on Cotton Varieties over 2 years-Graham County." Ibid. in press. 1986.

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**Effects of PIX and PREP on Short Staple Cotton  
Bonita, Graham County**

Bob, Randy and Paul Haas, Cooperators; Ron Cluff, County Director  
Lee J. Clark, Research Specialist; Gary Cramer, BASF Technical Rep  
Ted Haas, BASF Field Representative

Summary

Four different treatments of PIX were evaluated with and without PREP on short staple cotton on two locations in the southern part of Graham county above the 4000 foot level. PIX caused significant decreases in plant height. The effect of the PIX treatments on yield, even though not significant, varied with the robustness of the cotton plants. PREP caused significant increases in maturity with no changes in yield on both locations.

Introduction

Research on PIX and PREP have been done in other areas that varied significantly from this one. It was felt necessary to do this research at these locations to evaluate the effects of these plant growth regulators at higher elevation, shorter season, and with the cotton variety that is planted in the area.

The split application of PIX that had detrimental affects on several cotton varieties in Graham county in 1984(1), was re-evaluated along with 1/2 pint rate applied early and a 1 pint early and 1 pint late. A single application of 1 quart/acre of PREP was applied to see if the hastened boll maturity seen in the past(2) would help the crop mature before the first frost.