

Research with PIX, a New Cotton Plant Growth Regulator

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A new cotton plant growth regulator shows promise for increasing yields and resulting in a better plant type to facilitate harvest. PIXTM is the name given for this new cotton plant growth regulator developed by the BASF Wyandotte Corporation. We have been conducting experiments with PIX for several years at the Cotton Research Center, Phoenix with good results.

The chemical helps control plant growth by reducing internode length both of the main stem and fruiting branches. This results in a shorter plant with a more open plant canopy allowing for better sunlight penetration and better air movement which can be beneficial in reducing boll rot particularly in the more humid parts of the U.S. The shorter, more compact plant can facilitate a more efficient machine harvest.

An added benefit from PIX is increased yield. Our first experiments with PIX in 1974 and 1975 were with narrow-row cotton with two-11 or 12 inch rows planted on a 40-inch bed. Experiments in 1977 and 1978 were with single row cotton and although yield increases were not as spectacular as with two rows per bed there were significant yield increases. Yield results are shown in Table 1. The variety used in all 4 years was Deltapine 61.

Table 1. Average lint yields in pounds per acre for the best PIX treatment compared to the check. Cotton Research Center, Phoenix, 1975-1978.

	PIX	Check	Difference
1975 and 1976 (2 rows/bed)	1545	1272	273
1977 and 1978 (single rows)	1510	1357	153

In the 1978 experiment small areas of each treatment were harvested on a 2-week schedule beginning September 8, 1978 to determine earliness. The yield advantage from the use of PIX was evident from the first harvest indicating that use of this chemical would be beneficial for any short season cotton management considerations. We have tested fiber properties and have found no adverse effects from the use of PIX.

The proper timing for PIX application has been at the early bloom stage of growth. About one week after apical application a color change is evident and the plants become a darker green than the untreated checks. This darker green color remains for many weeks after spraying. Ten to 15 days after spraying one can observe the control of growth in treated plots. Treated cotton has generally been 8 to 12 or more inches shorter than untreated plots.

In 1977, Fred Arle and Carl Feaster tested PIX on Pima S-5 cotton with promising results. This study was continued in 1978 on Pima S-5. Pima S-5 has required essentially twice the rate of application as upland cotton for similar responses.

PIX will be field tested in larger tests in 1979 under an Experimental Use Permit (EUP). We will also continue to test PIX on both upland and long staple cotton at the Cotton Research Center. This plant growth regulator is a promising new chemical which has excellent potential for cotton production in Arizona.