

Table 4. Effects of micronutrient sprays on yield of cotton planted on residual plots of 1965-68 manure study, and tissue phosphorus concentration on manure residual plots.

Manure Residual Treatment	Foliar Spray Treatment	Yield Seed Cotton Lbs./A	Yield, Manure Residual Average	Total Phosphorus Concentrations in Leaves, percent:		
				6/1	7/1	8/1
None (Control)	None	3860				
	Zn+Fe+Mn	3660	3920	0.19	0.36	0.31
	Zinc only	4240				
10 T./A Annually, 1965-68	None	4240				
	Zn+Fe+Mn	4450	4320	.18	.39	.38
	Zinc only	4250				
10 T./A in 1965 & 1967	None	4270				
	Zn+Fe+Mn	3940	4040	.19	.37	.32
	Zinc only	3920				
10 T./A in 1965 only	None	4090				
	Zn+Fe+Mn	4240	4200	.18	.36	.33
	Zinc only	4270				

Table 5. Effects of fertilizer and micronutrient treatments on high population DPL-16 cotton (Marana).

Treatment	Lbs. N/A	Lbs. P <sub>2</sub> O <sub>5</sub> per A	Yield, Seed Cotton Lbs./A	Percent of Control	Total P Concentration in Leaves, percent		
					6/8	7/9	8/7
Control	0	0	2930	100	....	....	....
N <sub>1</sub>	50	0	3140	107	0.30	0.37	0.36
N <sub>2</sub>	100	0	3560	122	....	....	....
N <sub>0</sub> P <sub>1</sub>	0	100	2810	96	....	....	....
N <sub>1</sub> P <sub>1</sub>	50	100	3370	115	.30	.42	.46
N <sub>2</sub> P <sub>1</sub>	100	100	3250	111	....	....	....
N <sub>1</sub> P <sub>2</sub>	50	100	3420	117	.32	.45	.49
N <sub>1</sub> P <sub>1</sub> + M-n*	50	100	3350	114	.38	.40	.50

\*3 foliar sprays of zinc, iron and manganese mixture.

LONG STAPLE FERTILITY TEST

Apex Farms, Art Pacheco - Marana			Agent-in-Charge - Jim Armstrong		
Fertilized Plot			Unfertilized Plot		
Seed Cotton* (Pounds)	% Turnout	Lint/Acre* (Pounds)	Seed Cotton* (Pounds)	% Turnout	Lint/Acre* (Pounds)
1640	32.8	655	1915	30.5	710

Pounds Nitrogen Per Acre

June 2 - 48# N/A  
 August 17 - 23# N/A  
 Total N - 71# N/A

\* Rounded to nearest 5 lbs.

CROP HISTORY: PLANTED: April 9 and 10. PREVIOUS CROP: SS Cotton. INSECTICIDES: Sept. 7 - 1/3 gal. 6-3, Sept. 13 - 1 qt. Guthion, Sept. 19 - 1/3 gal. 6-3, Sept. 25 - 1 qt. Guthion, Oct. 1 - 1 lb. Methyl Parathion. DEFOLIATION: October 29 - 2 gal. Sodium Chlorate. HERBICIDES: 1 lb. Telvar as layby, Spot treated Johnsongrass, Hand hoeing - \$9/A. IRRIGATION: March 11-19 preirrigate .94 AF, May 31 - .36, June 20 - .36, July 18 - .40, August 18 - .20, August 30 - .18, September 14 - .12, Total water - 2.56 AF. HARVESTED: 1st pick - November 17, 2nd pick - December 17.

Pima yields have been on the decline since 1968. It appeared that excessive vegetative growth late in the season might be a contributing factor to the decline. This excessive growth was interpreted to be caused, at least in part, by the presence of excessive nitrogen in the late season.

The field used for this test had this experience previously. This was not a randomized, replicated test but was a comparison of 1/2 of an 80-acre field which received 71 pounds of N/A to the other half which received no fertilizer of any kind.

A soil test was taken from the field prior to planting which indicated 36 ppm nitrogen were present. Petioles were sampled on a weekly basis to monitor the nitrogen present. At no time did petiole analysis indicate that any of the plants in the whole field were deficient in nitrogen. Specific rows were marked for the petiole sampling and these rows were harvested for the yield results.

Test results indicate that the unfertilized half outyielded the fertilized half but these results would not be significantly different. The results of this test are only valid for the specific field tested and should not be interpreted to apply to any other field or situation although there likely are other fields in the same or similar situation.

#### WATER AND FERTILIZER MANAGEMENT OF SHORT-SEASON, HIGH-DENSITY COTTON

D.D. Fangmeier, R.E. Briggs, J.L. Abbott, R.A. Mohammed,  
W.A. Hill and R.W. Henry

#### Introduction:

The production system for high-density, short-season cotton is based on the concept of reducing production costs and insect control problems (mainly pink bollworm) while maintaining yield. In 1972, we conducted experiments at Marana in an attempt to establish irrigation and fertilizer management criteria for this production system. The results of these experiments showed no difference on yield due either to