

**ROW SPACING AND NITROGEN EFFECTS ON
YIELD AND EARLINESS OF COTTON**

Ernest L. Clawson and J. Tom Cothren
Texas Agricultural Experiment Station
Texas A&M University
College Station, TX

Abstract

A study was conducted at the Texas A&M Experimental Farm, Burleson County, TX, examining yield and earliness responses of cotton in three row spacings by four different levels of nitrogen. The experimental design was a split plot with four replications, with whole plots being nitrogen rates of 0, 45, 90, and 135 lb/acre, and split plots being 7.5, 15, and 30" row spacings. Deltapine 422 B/RR was seeded May 15, 2000. Average end-of-season populations for the three row spacings were approximately 122,000, 80,000, and 55,000 plants per acre for the 7.5, 15, and 30" row spacings, respectively. Yield and earliness determinations were made from sequential hand harvests within each plot.

Days to 60 percent of total seedcotton harvest were approximated from a plot of percent seedcotton harvested vs. days after planting. While 135 and 90 lb N/acre treatments showed virtually no difference in this estimate of earliness, the 45 lb N/acre appeared to be slightly later, and the 0 lb N/acre treatment was approximately four to five days later. Similar estimation showed no apparent earliness difference between 7.5" and 15" rows, both of which reached 60 percent seedcotton harvest approximately two days before the 30" row spacing.

Between 7.5 and 30" rows, differences in percent seedcotton harvested through each picking date were usually larger in the two highest nitrogen treatments. Thus the low nitrogen rates potentially masked some earliness difference between overall means of 7.5 and 30" spacings.

Lint yields were 847, 1011, 1196, and 1320 lb/acre for the 0, 45, 90, and 135 lb N/acre treatments. The 90 and 135 lb N/acre treatments were not significantly different. There were no significant differences in lint yields for row spacings; means were 1006, 1167, and 1153 lb/acre for the 7.5, 15, and 30" spacings, respectively. There was no significant nitrogen by row spacing interaction on total lint yield.

Preliminary indications from one year of data are that 7.5" rows do not require lower nitrogen fertilizer levels than 15 or 30" rows, and the data do not contain sufficient evidence to recommend higher rates. The 7.5 and 15" rows were estimated to be slightly earlier in maturity than the 30" spacing. There was no lint yield advantage for 7.5 or 15" rows over 30" rows.