

**USING ULTRA-NARROW ROWS TO INCREASE  
COTTON PRODUCTION**

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**Abstract**

Ultra-narrow row cotton production systems (e.g., rows spaced less than 20-inches apart) can lead to higher yield than with traditional row spacing. Cotton production was evaluated for three row spacing (7.5, 15, 30 and 40 in.) systems with seeding rates from 60 to 180-thousand seed per acre. Two experiments were grown under dryland conditions in 1999. One experiment examined the relationship between row spacing and plant density and was planted in Bell County, TX at the Blackland Research Center. The other study examined the relationship between variety and row spacing was planted at the Stiles Farm Foundation in Williamson County, TX. Lint yields averaged 937 and 1052 lbs/acre in Williamson Co. and Bell Co., respectively. Yields of ultra-narrow (7.5 and 15 inch rows) were 46 and 20 percent higher than 40-inch rows in Bell Co. In Williamson Co. ultra-narrow (15 and 19 were 20 and 10 percent higher than 38-inch rows. HVI and Uster-AFIS fiber properties were not affected by row spacing. Similarly, no differences were found between three varieties (DP425, DP 436, or DP5690) when grown under traditional or ultra-narrow row systems.

The 1999 findings that ultra-narrow row (7.5 and 15-inch) arrangements are more productive than traditional (30 and 40-inch) row spacing systems was consistent with data collected the previous three years. Row spacing did not influence fiber properties. When averaged over the 4-year period, we found that cotton lint yield increased 7.5 lbs/acre per inch row spacing was reduced from the traditional 40-inch system. This increase was similar to that obtained from independent cotton ultra-narrow row studies conducted in 1999 at the Stiles Farm Foundation in Williamson County, TX and on the Gene Klein Farm in Bell County TX. The higher lint yields associated with the ultra-narrow rows appear to be related small increases in boll number per plant, increases associated with higher plant density for ultra-narrow row systems, and a consistent average boll weight across row

spacing systems. Average plant densities for our ultra-narrow row system were about 30 percent lower than currently recommended by cotton agronomists. This information suggests that the benefits and substantial yield increases can be attained in the ultra-narrow row systems without resorting to extremely high plant density and associated seed costs.