

**VARIETAL COMPARISONS IN
ULTRA NARROW ROW COTTON (UNRC)**

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Abstract

With continuing increases in production costs for cotton (*Gossypium hirsutum* L.) and the decline and/or minimal price of the commodity, growers are looking for innovative production practices to reduce inputs while maintaining or increasing returns. The practice of ultra narrow row cotton production (UNRC) is being re-investigated as a means to produce profitable cotton. Benefits of UNRC include decreased time to maturity and increased yield (Krieg, 1996; Gerik et al., 1998; Jost and Cothren, 1999). However, little research has been conducted concerning the behavior of different cotton varieties under UNRC systems. A field study was conducted near College Station, TX in 1999 to evaluate the response and/or performance of eight cotton varieties in UNRC systems. The varieties included: DP 436 RR, DP 5690 RR, DP 5415 RR, DP 458 B/RR, DP 655 B/RR, DP 409 B/RR, PM 2280 BG/RR, and PM 1220 BG/RR. All varieties were planted to 7.5, 15, and 30-inch row spacing with plant populations of approximately 160,000 100,000, and 52,000 plants/A, respectively. No variety by spacing interactions were observed for any of the parameters examined; therefore, all varieties collectively demonstrated the same characteristics within a given row spacing. No varietal differences were observed for plant height, total nodes, canopy closure, maturity, boll distribution, or boll size. However, DP 436 RR and PM 1220 BG/RR had significantly more bolls per plant than all other varieties, which resulted in an increase in lint yield. Lint quality, determined by HVI analysis, was not influenced by variety as all characteristics were within acceptable ranges. At match-head square (45 DAP), the 7.5- and 15-inch spacing had 75 and 50% canopy closure, respectively, compared to 26% closure in the 30-inch spacing. Plant height and total nodes were reduced in UNRC compared to conventional cotton. As row spacing decreased the total boll number also decreased, with 7.5-, 15-, and 30-inch spacing having 4.7, 6.6, and 9.5 bolls per plant, respectively. The UNRC had a higher percentage first position fruit retention than the conventional spacing. However, no differences in vegetative to reproductive ratios were detected. Seed cotton per boll decreased as row spacing decreased. Conversely, yield was significantly increased with the UNRC compared to the conventionally planted cotton. Even though the UNRC had decreased boll size and number the higher plant population

compensated for yield. Yield was more, however, in the 15-inch row spacing than in the 7.5-inch spacing. Increased yield in the 15-inch row spacing was attributed to an increase in total bolls per plant in the 15-inch spacing, a decrease in plant uniformity in the 7.5-inch spacing, and a decrease in boll size in the 7.5-inch spacing. Fiber quality was not affected by the UNRC system.