

**EVALUATION OF VARIETIES AND PLANT POPULATION  
IN ULTRA NARROW COTTON IN MISSISSIPPI**

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**Abstract**

Renewed interest of ultra narrow row production (UNR) methods for cotton (*Gossypium hirsutum* L.) by industry, researchers, and producers, suggests evaluation of several management components is needed in order to optimize them. Plant populations and variety selection are among those agronomic factors requiring further evaluation. Field studies were conducted at the Delta Research and Extension Center in Stoneville, MS, in 1998 through 2000. In the first study, 7.5-in., 15-in., and 40-in. row spacings and six varieties consisting of NuCotn 35, ST 474, ST BXN47, PM 1220RR, MD21ne Normal-leaf, and MD51ne Okra-leaf were evaluated. In 1999 and 2000, row spacings were revised to 10-in., 15-in., and 40-in. rows and varieties consisted of Fibermax 832, ST 474, ST BXN47, SG 125BR, PM 1220RR, and NuCotn 35. A second study consisted of 7.5-in. and 15-in. row spacings and six plant populations ranging from 75 000 plants/A to 200 000 plants/A in 1998. In 1999 and 2000, 10-in. and 15-in. row spacings and four plant populations ranging from 75 000 plants/A to 150 000 plants/A were evaluated.

**Variety x Row Spacing Study**

Row spacing and varieties interacted to affect lint yield in 1998 and 1999 and findings were conflicting for these two years. Mean separation for lint yield was difficult to interpret due to the heavy degree of chaining of the means. In 2000, no differences were found in lint yield due to row spacing. Lint yields were 766, 631, and 799 lbs/acre for 7.5-in., 15-in., and 40-in. row spacings when averaged across varieties in 1998. Lint yields were 800, 830, and 727 lbs/A in 1999, and 474, 532, and 476 lbs/A in 2000 for 10-in., 15-in., and 40-in. row spacings, respectively, when averaged across varieties. Collectively, transgenic varieties in narrow rows yielded as well or better than conventional varieties in most cases two out of three years. No yield advantage was found for okra-leaf varieties in narrow row cotton production. Row spacing had little impact on fiber quality. Differences in fruiting characteristics were largely due to variety with row spacing having little affect.

**Plant Population x Row Spacing Study**

Row spacing and plant population treatments had no affect on mean lint yields in 1998 through 2000. Averaged across plant populations, lint yields were similar for cotton produced in 15-inch rows and 7.5-inch rows in 1998 with averages of 960 and 948 pounds per acre, respectively. In 1999, lint yields were 562, 545, 632, and 559 pounds per acre and 451, 479, 452, and 430 pounds per acre in 2000 for 10, 15, 30, and 40-inch rows, respectively, when averaged across plant populations. Dry conditions in July and August likely contributed to a reduction in yields in 1999 and 2000. Overall, cotton produced in narrow row yielded similar to cotton produced in conventional row spacings. In addition, lint quality of cotton produced in narrow rows was comparable to the lint quality from cotton produced in conventional row spacings.