

**PHOTOSYNTHETIC AND GROWTH
VARIABILITY DUE TO
COTTON ROW SPACING**
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Abstract

Ultra narrow row cotton (UNRC) has been observed to increase lint yields and have earlier canopy closure compared to conventional row cotton. These advantages of UNRC are offset by harvesting efficiency and decreased lint quality, thus limiting its acceptance. There is a current interest in developing either a brush stripper or a spindle picker capable of harvesting 15 inch row width. This study was designed to determine if 15 inch rows would offer the same benefits as UNRC. Paymaster 1220 RR/BG was planted in 7.5, 15, and 36 inch spacings on four planting dates. Plant heights were controlled with multiple mepiquat chloride (Pix) applications, and weed and insect control by over-the-top broadcast applications according to area standards. UNRC and 15 inch spacing significantly increased yields compared to 36 inch spacing for planting dates prior to June 28. Highest yield increases were 50% on June 5 and 56% on May 28 for UNRC and 15 inch, respectively. Plant mapping showed conventional spaced plants had more bolls per plant compared to both narrow row spacings, but both UNRC and 15 inch spacings compensated with higher plant populations. Canopy photosynthetic rates measured prior to cut-out were similar between UNRC and 15 inch spacing, both of which were greater than 36 inch rates. These data conclude that UNRC and 15 inch spacing show promising yield potential increases and advantageous management characteristics (earlier canopy closure and greater canopy photosynthesis) compared to conventional systems. Improvement in fiber quality through harvesting technologies will increase the attractiveness of these management approaches.