

**COMPARING ULTRA-NARROW ROW
AND CONVENTIONAL ROW COTTON
CROPPING SYSTEMS**

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Abstract

Experiments were conducted at the Tennessee Valley Substation (TVS), Belle Mina, AL and Wiregrass Substation (WGS), Headland, AL in 1998 to compare weed control and Pix[®] requirements for UNR and conventional cotton. Both tests were planted in no-till systems using Paymaster 1220 BG,RR. The ultra-narrow row cotton was planted on 7.5-in. rows with a grain drill while the row cotton was planted on 40 in. (TVS) and 36-in. (WGS) rows using a conventional planter. Treatments were arranged as a 3x2x2 factorial in a Randomized Complete Block experimental design. The three factors studied consisted of row spacing, weed control, and Pix[®] level. The two levels of weed control were a preemergence + postemergence system compared to a postemergence only herbicide system. The two levels of Pix[®] applications were 4 oz. and 8 oz. on UNR cotton and 0 oz. and 4 oz. on conventional cotton, respectively. Pix[®] was applied on an as needed basis. Data gathered on the two experiments consisted of visual weed ratings, crop injury ratings, plant stand counts, plant height and node counts, boll counts, and seed cotton yield. The gin turnouts were 36% and 39% for the conventional cotton at TVS and WGS while the UNR cotton had turnouts of 31% at both sites.

There were no differences or interactions among weed control treatments at TVS. Plots were maintained at good to excellent weed control rating throughout the year. Herbicide costs for the PRE + POST treatment on UNR cotton was \$50.14 an acre and on conventional cotton it was \$34.77 an acre while costs for the POST only treatment ranged from \$67.63 an acre for UNR cotton to \$31.50 an acre for conventional cotton. Average stand for the UNR cotton was approximately 134,764 plants per acre while the row cotton averaged 39,535 plants per acre. Node counts revealed significant differences among weed control systems. The POST only weed control system had more nodes than the PRE + POST system. There was also an interaction between row spacing and Pix[®] rate. Higher Pix[®] rates resulted in fewer nodes, and likewise, the UNRC had fewer nodes than the conventional row cotton. Plant height measurements showed differences between row spacing and Pix[®] rate. The UNRC plants were shorter at a higher Pix[®] rate than the conventional row cotton. Pix[®]

costs ranged from \$3 to \$6 an acre for UNR cotton and \$0 to \$3 an acre for conventional cotton. The average bolls per plant for the conventional row cotton was 6.7 compared to 2.3 for UNRC. The UNR cotton yielded 812 pounds per acre as compared to 769 pounds per acre for the conventional cotton.

No differences were detected with weed ratings at WGS. Both row spacings regardless of treatment were kept in the good to excellent range for weed control. Herbicide costs for the PRE + POST treatment were \$59.13 an acre for UNR cotton and \$46.63 an acre for conventional cotton while the POST only treatment was \$39.00 an acre for UNR cotton and \$43.50 for conventional cotton. The average stand count for the UNR cotton was 159,720 plants per acre and 38,634 plants per acre for the conventional row cotton. Plant height was shorter for UNR cotton, the higher rate of Pix[®], and the POST only weed control system. Pix[®] costs for UNR cotton ranged from \$30.16 to \$36.19 an acre for UNR cotton and \$18.10 to \$24.13 an acre for conventional cotton. The average number of bolls per plant for UNR cotton was 1.7 and 6.1 for conventional cotton. The POST only weed control system also had fewer bolls per plant than the PRE + POST system. The UNR cotton averaged 994 pounds per acre while the conventional cotton produced an average of 746 pounds per acre.