

HIGH-POPULATION SHORT SEASON COTTON
COSTS LESS TO GROW

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This past cropping season was the first year appreciable effort has been exerted by Arizona cotton growers to grow narrow-row, high-population cotton, a new concept in growing cotton. Approximately 55 growers planted anywhere from 10 to 650 acres each resulting in about 4500 acres being planted in the state. By far the greatest portion was planted two rows on a 38"-40" bed with a population between 45,000 and 150,000 plants per acre. The goal of this new system is the reduction of production costs which is obtained primarily by shortening the fruiting period and growing season.

With the plant populations used today, long fruiting periods and growing seasons are required to obtain satisfactory yields. Yields can be maintained by increasing plant density and reducing the fruiting period to 3-4 weeks compared to the 8-9 week period normally required.

The narrow-row, high-population system eliminates the requirements for continued late-season irrigation and insect control commonly practiced today to assure maturity of bolls. In some cases more frequent irrigations were used but the total quantity of water applied was substantially decreased. One to three irrigations were eliminated which may result in a savings of about \$12.00 per acre.

The major insect pests of cotton in Arizona build up in mid- to late-season. Once control is initiated, continued spraying on a schedule is normally required until bolls reach a certain stage of maturity. Cotton grown in the conventional manner requires protection for an additional 30 to 50 days compared to cotton in the narrow-row, high-population system. Approximately seven insecticide applications may be eliminated at a savings of about \$24.50 per acre.

Hopefully, the new system will further aid in the control of the pink bollworm by eliminating one or more generations per season. With an earlier harvest there would be a longer host-free period between successive crops.

Some advantages of narrow-row, high-population cotton are hard to isolate. Cotton has been grown as a 7 to 8 month crop, occupying the land, for all practical purposes, for a full year. Under the new system, cotton is ready to pick in September. An early harvest allows ample time for land preparation to plant a winter crop on time. This is especially important in the case of small grains.

The new system adapts itself to a once over stripper-type harvester or modifications of the spindle pickers. Several machines were tested in Arizona this year. Five machines (three strippers and two adapted spindle pickers) were successful.

The lint turn out of the strippers equipped with cleaners averaged between 27 and 30%, while the turnout of the adapted spindle pickers did not differ from the regular row pickers. Regardless of the machine, once over

harvest cost less than the two pickings normally required. The stripper offers the greatest savings based on custom rates, about \$10.50 per acre. However, ginning cotton from stripper harvesters cost an average of \$24.00 per bale compared to \$22.00 for the spindle machine.

The potential savings in growing, harvesting, and ginning narrow-row, high-population cotton over cotton grown in the normal manner is \$36.00 per acre.

We are not suggesting that the new system is for everyone. Certain growers in Arizona have projected yields between three and five bales per acre and may not be interested in any system that can not produce yields in that neighborhood. But narrow-row, high-population cotton does appear to offer a potential for reducing the cost of producing cotton in Arizona.