VARIABLE-ROW COTTON

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Following the work of Dr. Longenecker in Texas, Travis Jones, a cotton grower from Buckeye planted cotton on 27"-53" and 34"-46" row spacings. Forty rows of standard planting served as a check. Observations of root development, pattern of moisture movement, bulk density, and salt distribution were made by Charles R. Farr, Maricopa County Agricultural Agent, and by Extension Specialists.

Excavations across the row in the 27"-53" planting during July indicated the roots tended to be concentrated on the side away from the irrigation furrow. This may be related to soil aeration, soil compaction (although bulk density measurements did not show an obvious difference), availability of plant food, or other factors. Moisture from the previous irrigation had moved laterally to about 16 inches beyond the cotton row at a depth of 18 inches. Moisture from earlier irrigations had apparently moved further because roots were evident beyond this point.

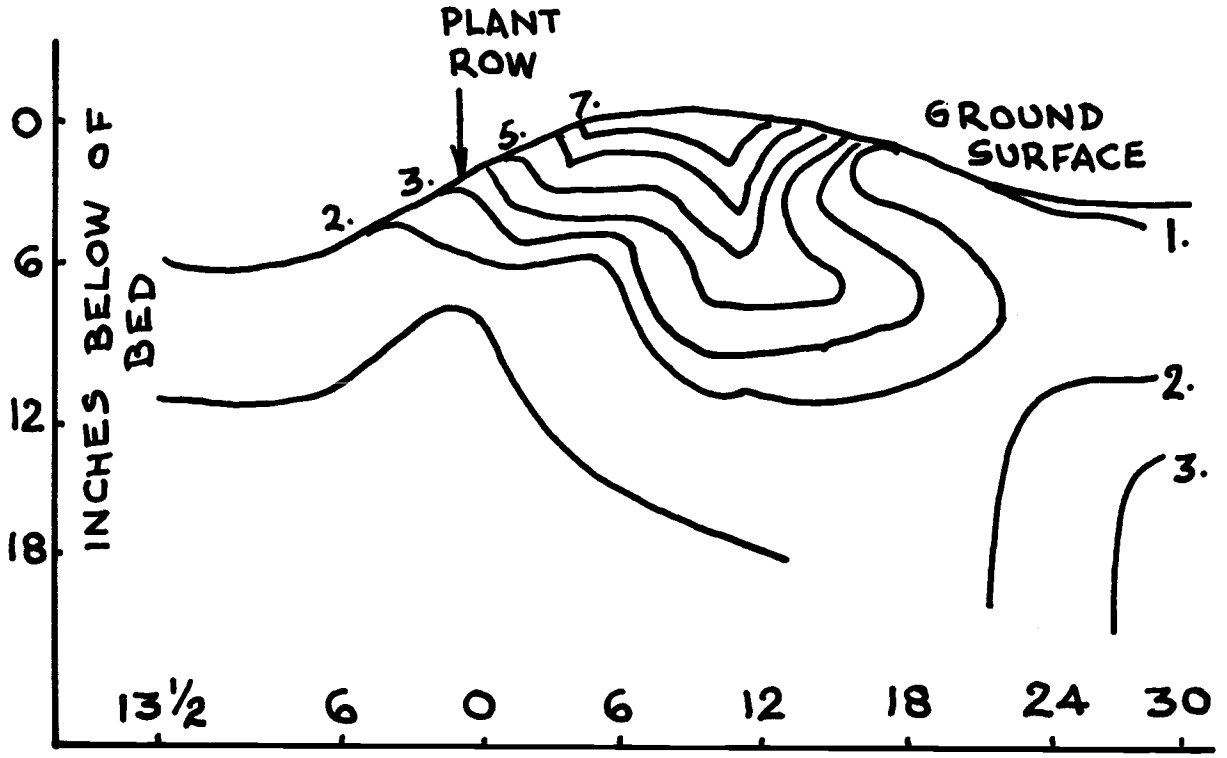
Total water applied during the season, including the pre-planting irrigation, was 4.8 acre-feet per acre. The grower estimated his water savings to be 1.6 acre-feet per acre.

Soil samples were taken on a profile grid to assess the salinity consideration mentioned by Longenecker. Results, shown in the graph, suggest the variable-row cotton method may also have merit as a salinity-management practice.

The cotton was picked by a custom operator using a modified one-row International Harvester picker. The picker head was moved 6-1/2 inches to the right and the cotton transfer pipes were modified. The rear guide wheel ran in the narrow furrow; the large wheels ran in the middles.

Yield observations were complicated by pink bollworm damage. Practically all the later bolls were infested. Mr. Jones reported the variable-row cotton appeared to be as good or better than the solid planted cotton.

Results of this work were reported to growers at the Maricopa County Farm Roundup September 28 by Mr. Jones, Dr. Howard Ray, Extension Soils Specialist, and Allan Halderman, Extension Agricultural Engineer. Also, Mr. Jones will discuss his experience with variable row cotton production in a presentation at the Western Cotton Production Conference March 7-8 in El Paso, Texas.



SALT DISTRIBUTION IN BED PROFILE EXPRESSED AS $EC_a \times 10^3$

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WITHIN- AND BETWEEN-ROW SPACING OF COTTON

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An experiment was conducted with within- and between-row spacing at the Yuma Branch Station in 1965. Treatments with 6-, 12-, 18- and 24-inch within-row plant spacing and 20-, 30-, and 40-inch between-row spacings were used with three varieties which varied in plant-type characteristics. The varieties used were Delta Pine Smooth Leaf (DpSL), Hopicala, and Arizona Experimental Strain 6010 (A-6010).

Statistical analysis showed a significant interaction in the between- and within-row spacing as shown in Table 1. Note that yields at all within-row spacings were highest with a 20-inch between-row spacing. Also note that a within-row plant spacing of 6 inches always resulted in the highest yield regardless of the between-row spacing used.