

IV - COTTON PRODUCTION

COTTON PRODUCTION --- Irrigation

Pinal County Sprinkler Irrigation Project

(Charles Robertson & Henry Brubaker)

A sprinkler system was established by cooperation of the Pinal County Farm Bureau, Swanson Company, Keith Carlton, and the Pinal County Extension office. The system was engineered by the Swanson Company and furnished free of charge except for undue wear and tear. Mr. Carlton ran the system on 20 acres of cotton and 20 acres of alfalfa.

Power costs were \$7.41 per acre-foot for the sprinkler compared with \$5.00 per acre-foot for the surface system or an increase of \$2.41 per acre-foot for the added pressure.

The alfalfa was irrigated nine times with a total of 35 inches. The yield was 5.5 tons per acre. Last year 108 inches were applied for 5 cuttings of hay.

The cotton was irrigated 9 times plus the pre-planting irrigation. Water available to the plant included 36.5 inches supplied by irrigation plus 3.5 inches of rainfall for a total of 40 inches. Ninety-six pounds of nitrogen were applied through the sprinkler system. The yield was 1,200 pounds of lint per acre.

Last year, with surface irrigation, 96 inches of water were applied. This is 56 inches more than that applied during 1964 with the sprinkler system. Labor cost under sprinklers was \$7.88 per acre compared to \$6.08 for surface or an increase of \$1.80 per acre.

The field had been in cotton 3 years and stalk growth had been a problem. Sprinkler irrigation the fourth year produced a satisfactory stalk. Weed problems were greater under sprinkler irrigation but herbicides should be more effective.

Four blocks of cotton received an additional 20 inches of water for a total of 60 inches. These blocks also received 125 pounds of nitrogen per acre. Yields were slightly greater.

Three sprinkler setups in the area experienced trouble from leaf burn. The Carlton project was not troubled in this way even though the water quality was no better than the other locations. This was probably due to having the lateral lines running in the direction of the prevailing wind. Locations that had difficulty with burn had laterals running across the prevailing wind. Sprinkling at night only helped. High salt and chlorides over 80 parts per million as well as wind are probable causes of leaf burn.