

## II - LAND PREPARATION

### Physical Characteristics of Soil Receiving Attention

(Lyman Amburgey)

A manure demonstration established on the farm of Erwin Johns in Graham County during 1963 was continued during 1964. An application of 8 tons of manure per acre produced 4/10 bales of cotton more than the area receiving no manure.

A Gypsum demonstration established on the farm of Eddie Pratt in Pinal County in 1963 was continued in 1964 and again no differences were observed. Gypsum was applied on the John Jacobs Farm in Maricopa County for observation purposes. Laboratory analyses indicated no requirement for Gypsum but since there was some question concerning the accuracy of this determination, the material was applied at the rate of 2 tons per acre in several fields with a check strip being left in each field. This work was done in cooperation with Boyce Foerman, County Agricultural Agent and Forest Zoellner, Farm Manager.

Cotton Yields have been decreasing gradually over a 9-year period on Mohave loam and clay loam soils in Maricopa County. Charles Farr, County Agricultural Agent, initiated a survey as a result of low yields this year and found that these lower yields were on Mohave soils generally throughout the county. This observation has led to the consideration of tillage and other management factors as they relate to physical condition of the soil. Present evidence indicates that these findings can be related to other farming areas in the county where the excesses of intensive tillage in farm systems are often masked by other variable factors.

Differences in physical condition are being studied on existing experiments at the Mesa Experiment Station Farm and the Cotton Research Center. Differences in crusting appear to be developing under different crop sequences. This is especially true in the long-term rotation program at the Cotton Research Center.

### Increasing Interest in Precision Tillage

(W. E. Larsen)

Growers throughout Arizona are showing considerable interest in new methods of performing tillage operations. New equipment is showing ways to do these jobs better and faster. Two basic types of tools are being tried. One manufacturer calls this type of tillage "tool bar farming." They hang on a tool bar the equipment they want for the job. A number of growers are trying the chisel-list method of preparing cotton land. The chisel is operated in the row directly ahead of the lister. This leaves a compaction relieved area for the cotton tap root. Only a few areas are trying this technique at the present time but it shows potential for quite a number of areas.