FACTORS INFLUENCING THE EFFECT OF INOCULATION OF PEANUTS GROWN ON NEW PEANUT LANDS

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The results obtained in inoculation studies of peanuts have been so variable in the past that the experiment stations of the South have been reluctant to advise the application of commercial inoculation to peanut seed even when the crop is to be planted on new peanut lands. Certain states (2, 6), however, have suggested the practice as a safeguard against crop failure due to a possible lack of natural inoculation.

The great expansion of production necessitated by the war has extended the planting of peanuts into areas that never before have been engaged in peanut production. In Alabama, for instance, peanuts are now an important crop in every county, whereas, as recently as 1940 practically all commercial production was confined to nine southeastern counties. The new plantings have been made, at least in central and northern Alabama, largely on lands which had never grown peanuts before. Growers in these areas were advised, on the basis of the results of inoculation studies reported herein, to inoculate their seed before planting. The results were considered particularly applicable in central and northern Alabama where Spanish peanuts rather than Runner peanuts are grown almost exclusively. Duggar (3, 4) has shown that nodulation of Spanish peanuts is not accomplished as rapidly nor as abundantly as it is on peanuts of the Runner type.

METHODS

The peanut inoculation experiments reported in this paper were all conducted in the field at Auburn, Ala. The tests were of necessity moved to a new location each year; in every case land which had not grown peanuts before was utilized. Spanish peanuts were used in most of the tests, although a few results with Runner peanuts were obtained.

Yields of cured nuts and hay were determined wherever possible. Until 1943, the peanuts from each entire plot were tied into loose bundles and placed in stacks to cure. The nuts were picked by hand after curing and the yields of cured hay and nuts determined. In 1943 the nuts were picked from the vines after digging and were air-dried in the greenhouse. Samples of foliage were taken, air dried in the greenhouse, and cured hay yields calculated.

EXPERIMENTAL RESULTS AND DISCUSSION

Effect of inoculation and various fertilizers on Spanish peanut yields.—The application of fertilizers in 1940 to a Norfolk sand on which peanuts had not been grown before did not increase hay or nut yields of Spanish peanuts unless inoculation was used (Table 1).

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