STUDIES OF SOYBEANS AND OTHER GREEN MANURE CROPS FOR SUGARCANE PLANTATIONS

GEORGE ARCENEAUX, NELSON McKAIG, JR., and I. E. STOKES

The handling of leguminous crops extensively planted for green manure in rotation with sugarcane presents important agronomic problems very closely associated with sugarcane culture. In Louisiana it is customary to grow a legume crop, usually soybeans either alone or interplanted with corn, during the year intervening between the last ratoon crop of sugarcane and the succeeding plant cane crop. In some instances the stubble land is planted to corn and legumes for two consecutive years. In either case the legume crop is usually removed for hay. However, the policy of plowing under the entire legume crop grown in rotation with sugarcane has been adopted on numbers of plantations.

Preliminary field studies on legumes were conducted at the U. S. Dept. of Agriculture’s Sugar Plant Field Station near Houma, La., during 1930, for the purpose of comparing the relative green-manuring value of several leguminous plants under conditions more or less typical of the section of Louisiana where sugarcane is extensively cultivated, and determining the most advantageous method of handling the soybean green manure crop under such conditions. The results given represent a single season’s work only, but it is believed that the data are sufficiently valuable to justify publication at the present time.

EXPERIMENTAL METHODS

All yield data given in this report, except in the case of the newly imported legumes (Table 6), are based on results obtained on plats of appropriate size replicated 10 or 12 times and distributed over the area of the experiment in “checkerboard” fashion.

At the dates indicated the plats were harvested by digging out the plants, an attempt being made to include all roots. The adhering soil was then washed off and the plants permitted to dry in the shade for approximately 1 hour, which was sufficient for the evaporation of all adhering water, after which the plant material from each plat was weighed separately. The treatment was uniform in all cases and

1Contribution from the Division of Sugar Plant Investigations, U. S. Dept. of Agriculture. Received for publication September 14, 1931.
2Agronomist, Division of Sugar Plant Investigations, Bureau of Plant Industry; Associate Soil Technologist, Division of Soil Fertility, Bureau of Chemistry and Soils; and Agent, Division of Sugar Plant Investigations, Bureau of Plant Industry, respectively.