THE EFFECT OF FERTILIZER ON STAND AND YIELD OF 
KUDZU ON DEPLETED SOILS 
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EXTENSIVE plantings of kudzu have been made on depleted soils throughout the southeastern part of the United States. Some areas, particularly in the Piedmont and Limestone valleys where kudzu has been planted, are so severely eroded that native vegetation is almost non-existent. On other areas with less severe erosion, native vegetation offers some protection against erosion, but it competes with the kudzu plants and delays coverage.

At the beginning of the soil conservation program in 1935 there was little information available on the fertilizer requirements of kudzu under conditions mentioned above; therefore, some experiments were conducted to determine the response of kudzu to applications of various fertilizers, including lime, phosphate, and potash on depleted soils. The results of some of these studies are reported herein.

EXPERIMENTAL

Areas were selected in 1937 on which the kudzu had been set in the spring of 1935 with very little soil preparation or cultivation, and without fertilizer. When possible, plots were laid out in duplicate. Green-weight yields in all tests were obtained in September of each year by cutting one or more areas 10 x 10 feet in each plot. After yield records were obtained, the kudzu on the remainder of the area was harvested for hay.

STUDIES WITH APPLICATIONS OF PHOSPHORUS, POTASH, AND LIME

In the spring of 1937 several kudzu areas in the soil conservation demonstration project in the lower Piedmont area near Dadeville, Ala., were selected for preliminary fertilizer studies. The fertilizer treatments used on each of these areas were: (1) no fertilizer, (2) 800 pounds of approximately 8% basic slag, (3) 150 pounds of 43% triple superphosphate, (4) 300 pounds of triple superphosphate, and (5) 300 pounds of triple superphosphate plus 1 ton of dolomitic limestone per acre. These fertilizer treatments were used with and without cultivation. The data from these experiments are not reported, but they showed that kudzu responded to applications of phosphate. Cultivation was of value in removing competing vegetation in the early stage of growth.

In 1938 and 1939 the studies were enlarged to include three sources of phosphate, viz., approximately 8% basic slag, 16% superphosphate, and 43% triple superphosphate. Phosphatic fertilizers were applied separately and in combinations with lime and potash. Rates of applications were 800 and 1,600 pounds of approximately 8% basic slag, 400 and 800 pounds of 16% superphosphate, and 150 and 300 pounds of 43% triple superphosphate per acre. All of the fertilizers were applied at the beginning of the experiment and none was added during the period of observation. Outline of fertilizer treatments and arrangement of plots are shown in Table 1. These experiments were conducted in the Piedmont and Limestone valleys and the Coastal Plains of Alabama. The results obtained are shown in Tables 2 to 5, inclusive.

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