EFFECT OF FERTILIZERS ON THE SIZE OF COTTON BOLLS

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Fertilization of cotton soils has become a common practice in the United States. Such a practice is warranted because of the increased profit obtained through fertilization. Manifestly where so great attention is devoted to the maintenance and increasing of yields, through the use of commercial fertilizers, the yielding power of the plant is of primary importance to the farmer and it has been a criterion upon which the value of the fertilizer has been based.

It is apparent from a survey of the literature on fertilizer experiments with cotton that the majority of emphasis is placed on the total yield of lint or seed cotton per acre. Whether the increased yields are the result of larger plant growth, together with a greater number of bolls per plant, resulting from the fertilizer application or whether they are due to the production of larger bolls or to a combination of the two factors is not clear.

In 1927, in connection with a number of fertilizer experiments located in different parts of Arkansas, a study of growth characters was made which had for its object, first, to determine the effect of fertilizers on the size of cotton bolls and, second, to determine the effect of fertilizers upon the percentage of lint per boll.

The literature pertaining to the objects of this experiment is very meager. Newman, working in Alabama, has shown that the weight per boll in ounces may vary with the kind of fertilizer applied, the amount applied, and the type of soil to which it is applied. He used ammonium sulfate, superphosphate (acid phosphate), and cottonseed hull ashes separately and in combinations. While his results fluctuated with different types of soil, in the majority of cases, the application of fertilizers stimulated heavier boll development.

EXPERIMENTAL

The experiments were conducted on tenth acre plats under the supervision of county agents of the counties in which the experiments were located and were visited by members of the Department of Agronomy. The treatments used were (1) sodium nitrate, 150 pounds.