INTRODUCTION

In varietal experiments with different farm crops the question of what size of plot and how many replications to use in order to obtain reliable results is of prime importance. For the sake of economy in land and labor it is desirable to have the plots as small as possible and replicated a minimum number of times. On the other hand, it is of even greater importance that the plots be large enough and sufficiently often replicated to make the results reliable. Although considerable work has been done in determining the size of plot required for tests with small grains, potatoes, and a number of other crops, a search of the literature does not reveal any experiments of this nature with soybeans.

The object of the study reported in this paper was to find the minimum size of plot and number of replications of this size of plot necessary for varietal tests with soybeans under the conditions prevailing where these experiments were made. At the West Virginia Experiment Station the soybean varietal trials are carried on in rod rows which are 30 inches apart. Each plot is replicated three times making four plots of each variety. The particular size of plot and number of replications chosen were made for convenience and on the basis of experience with other crops.

Inquiries addressed to a number of experiment stations revealed the fact that various lengths of row and number of replications are used by the different stations.

In West Virginia the Wilson soybean has been the most popular and is by far the most widely grown variety. This variety is also used for the check plots in the varietal experiments. For these reasons it was used in the experiments reported in this study.

PLAN OF EXPERIMENT

The tests reported herein extended over a period of two years, viz., 1925 and 1926. In 1925 the crop was harvested for forage and in 1926 for seed. The soybeans were planted in rows 30 inches apart and running the full length of the area on which the test was located.

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