THE CHECKER-BOARD METHOD OF LAYING OUT PLATS

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The checker-board method, as the name implies, consists of an arrangement of plats in a checker-board fashion. The plats are divided into two groups, as shown in Fig. 1, treated plats and checks. With the exception of those treated plats on the border, there are four check plats adjacent to each treated plat. This method has been found especially desirable for a crop such as onions, where, because of thick planting, large numbers of plants occur on small areas, making it possible to use small plats—\(1/80\) to \(1/160\) of an acre. In the fertilizer experiments with onions at the Massachusetts Experiment Station certain advantages in the use of the checker-board method have suggested themselves which may be of general interest to agronomists.

AIDS IN ATTAINING OBJECTIVE

The checker-board method of laying out plats provides opportunity for change as data warrant, and thus assists in attaining the objective of the experiment. In many fertilizer experiments it is often a question when to change and how to change without sacrifice. Perhaps if some of the long-time experiments had included this principle of change it would not have been necessary to conduct them over such a long period. The checker-board method is based upon the principle of changing. In the beginning the best-known treatment is applied on the check plats. As soon as a better one is recognized among the variously treated plats it is used as the check. If there is doubt about the value of a particular treatment, it may be tested on some of the check plats. This will afford more cases in which it can be observed and will allow its merits to be more definitely judged.

When the experiment has progressed to the stage where the best treatment is on the check plats, and the resources of the project leader in bettering growth on the treated plats are exhausted, then the objective has been attained and the work can be concluded.

GIVES RELIABLE RESULTS

With four check plats adjacent to each treated one, the performance of the latter can be compared with that on four adjacent areas. The consistency with which the checks are better or poorer gives a reliable basis for judging the value of the treatments for any particular portion of the field. If the treatments are replicated several times in different

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