NOTE

RELATION OF STAND TO YIELD IN CORN

It is a generally accepted principle that reduced stands of corn are very materially compensated for by increased development of each plant under such reduced stands. For this reason, correction of yield results to compensate for reduced stand is regarded by agronomists as a dangerous practice. In view of these facts, the case here-with reported in which yield was reduced in almost exactly the same ratio as the reduction in stand was rather surprising to the writer and may be of interest to other workers.

In the course of an experiment carried out during 1927 in which a seed study was being made, 82 individual ear rows were grown. These rows showed a decided variation in stand and it was quite evident that comparative yields had been very decidedly influenced by such variation. A careful analysis was made, therefore, of the relation between successive increments of stand and successive increments of yield. The method of analysis and results are shown in Table 1.

The rows as harvested were 18 hills in length, and the stand varied from 17 to 52 stalks per row as the first horizontal column of the table shows. The rows were grouped into "stand classes," the extremes and class centers constituting the column headings of the table. The first class, for instance, consisted of all of the rows having a stand ranging from 17 to 19 stalks per row. There was only one such row. The next class ranged from 20 to 22 stalks, with a class center of 21. There were three such rows, and so on. It will be noted that each row is entered in its own column, according to its stand, and the stand and yield of each such row are shown. For example, in the last class mentioned, namely, that including the limits 20 to 22, three rows have respective stands of 22, 20, and 20, and respective yields of 6.25, 5.61, and 5.64 (shelled corn dry matter per row). At the bottom of each column is given the mean yield of all of the rows entered in the column. It will be noted that there is a progressive increase in the mean yield from column to column up to that with a class center 45. The two classes above this very probably would have shown further increases had there been more individuals in them.

To determine how closely the progressive increase in yield is related to the increase in stand, the two sets of figures under the ruled line have been worked out. The first or upper set represents the successive increments of stand in o/o when the "ideal" stand of 45 is compared with each of the other "stand units." For instance, the...