INFLUENCE OF POSITION OF GRAIN ON THE COB ON THE GROWTH OF MAIZE SEEDLINGS.1

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Introduction.

Five sample ears from each of 20 representative varieties and crosses of corn were used in this experiment. The grains from each ear were divided into 10 equal lots, each representing a zone of the ear, ranging from the butt to the tip. The average weight of the grains in each zone of 2 of the 5 ears was obtained and then 25 kernels from each lot were planted an inch deep in a greenhouse bed. The grains for planting were taken at random, except that in the butt and tip zones the smallest perfect kernels were used. The plants were harvested after 17 days, a period sufficient to produce plants of considerable size.

The emergence of the tips of the seedlings was recorded daily, and from this the averages were obtained. At harvest time the viability was recorded and the weight and length of the seedlings taken, from which the vigor and variability were afterward deduced. By averaging the five units (ear belts) in each set a series of tables has been constructed that shows the relationship of the position upon the cob to the particular characters under consideration, as follows: (1) Weight of grain; (2) specific gravity of grain, (3) emergence of seedlings; (4) viability of seeds; (5) weight of seedlings; (6) length of seedlings, and (7) variability in length.

Weight of Grain.

The names of the varieties used in the experiment and the weights of the grains in grams by zones are shown in Table 1.

The grains range in weight from those of the Hickory King, which are unusually large, to those of the Country Gentleman and the Golden Queen (pop), the immature kernels of the last being very small. The flint varieties generally have the heaviest grains, followed by the dent sorts, but the Black Mexican, Stowell Evergreen, and Golden Bantam, three standard sweet kinds, are near the average of the

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