WHAT EFFECT DO COMMERCIAL FERTILIZERS HAVE ON THE MATURITY OF CORN?¹

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"ONE of the marked effects of fertilizer on corn is that the maturity of the crop is materially hastened." The quoted statement might be drawn from scores of scientific papers or it might essentially reflect the opinion of thousands of corn growers. We have no argument with the many who have arrived at this conclusion. We merely think it is of interest to point out that for 3 years we have laid out experiments, using four replications, in randomized blocks, in the hope of significantly altering the maturity of three different corn hybrids with variations in fertilizer treatments. We did not succeed.

The data were analyzed statistically, but the average moisture contents of the corn, within a variety, were so close together and the slight variations were so inconsistent as to make it obvious that the fertilizers used in these trials had had no practical influence on maturity.

Although the chief objective of these experiments was to study corn maturity, yield determinations were also made. In two or three instances yield responses due to the use of some particular fertilizer were statistically significant, but in no case in these trials were yield responses highly profitable.

MATERIAL AND METHODS

These experiments were conducted on Conover silt loam soil which contained a high proportion of organic matter and lime. The soil reaction ranged from pH 7.0 to 7.5. Some high spots in the field contained sufficient carbonates to effervescce freely with dilute hydrochloric acid. The supply of available phosphorus and potassium was very low as indicated by soil and plant tissue tests and by deficiency symptoms.

Each plot consisted of two rows of corn. The fertilizer was applied in bands on a level with and 1½ inches to one side of the seed. The lengths of the plots varied from year to year but were never less than 100 feet. The left row of each plot was used for moisture samples. Ten ears a plot were picked at random from each replication. These were weighed and dried down for moisture determinations. The final moisture sample in each season was based on the weighing and drying of a sample of at least 50 ears from each plot, taken from the right hand row which was harvested for yield.

The same fertilizer treatments were used the first two years. After these disappointing results some unusual nitrogen and potash applications were included the third year in an effort to vary maturity even though the effect might be one of delay.

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