FERTILIZER PLACEMENT STUDIES ON HILLSDALE 
SANDY LOAM SOIL
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URING the last decade there has been an ever-increasing interest in the problem of how best to apply fertilizers to obtain maximum crop response and the most economic returns for the money spent. To supply answers to these questions, a rotation experiment was started on the farm of Michigan State College, East Lansing, Mich., in 1931, which involved the placement of a 2–12–6 fertilizer for corn and wheat in various locations with reference to the seed. Use was also made of stable manure, both alone and reinforced with superphosphate. Later there were added to the experiment comparisons of 2–12–6 with 0–12–6 fertilizer, and of a heavy application of phosphate and potash plowed under for corn with the same amounts of these elements plus 500 pounds of calcium cyanamide.

The rotation consisted of corn, barley, wheat, and clover. Pickett's yellow dent, an adapted, open-pollinated variety of corn was used. The clover sod was spring plowed for corn and the barley ground was plowed for wheat. The seedbed for barley was prepared by diskning.

The experiment was conducted on Hillsdale sandy loam, a soil type which occupies large areas in south central and southwestern Michigan. Although this soil type is characterized by the presence of calcareous rocks of various sizes scattered throughout the profile, the soil itself is generally too acid to grow alfalfa or clover well. On the experimental field this condition was corrected by the application of liming material.

REVIEW OF LITERATURE

No attempt will be made to review the extensive literature dealing with the placement of fertilizer for corn and the effect of fertilizer on the other crops grown in the rotation. However, few studies have come to the attention of the writer concerning methods of applying fertilizer for wheat. Reference is made to several experiments with corn which touch on points mentioned specifically in this study.

Salter and associates (4) found that delayed applications of 2–12–6 beside the corn rows or hills were less effective in 1937 than applications made at planting time. However, in 1938 and 1939 the treatment which gave the largest increase in yield consisted of applying one-third of the fertilizer (150 pounds) at planting time, one-third at the first cultivation, and one-third at the time of last cultivation.

Miles (3) found that over a period of years small amounts of fertilizer applied near the seed gave better results with corn than fertilizer applied by other meth-

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3Figures in parenthesis refer to "Literature Cited", p. 766.