ROOT SYSTEMS OF YOUNG CORN PLANTS IN RELATION TO FERTILIZER APPLICATIONS

C. E. MILLAR

Much interest is being manifested in the location of fertilizer dropped near the seed kernel of corn in order that the young plant may derive early benefit from the nutrients supplied without danger of damage to the seedling. As a preliminary to the investigation of the problem, a knowledge of the extent and character of the root system of young corn is essential. Unfortunately, few data on the subject are found in the literature which has come to the writer's attention.

Hay's discussed the development of the root system of very young corn but gave no data as to location in the soil and extent of the roots. King made a limited number of studies of corn roots nine days after planting by burying disks of fine meshed wire netting at intervals of 2 inches to a depth of 18 inches before planting. After the period of growth the set of disks was dug out and the soil removed from the root system by a stream of water. The detailed studies of Weaver give an admirable picture of the root systems of corn for various periods, but unfortunately his investigations did not begin until the plants were five weeks old and had approximately eight leaves.

A knowledge of the root system of corn in the early stages of growth is also of value in determining suitable tillage practices.

PLAN OF STUDIES

The original plan was to determine the depth of roots found near the surface at various distances from the plant and it was not until the work was well under way that the desirability of making a detailed study of the entire root system became evident. As a result, the major portion of the work on sandy loam did not include the total root system of the plants.

1Contribution from Soils Section, Michigan Agricultural Experiment Station, East Lansing, Mich., as Journal article No. 38 (N. S.). Received for publication May 1, 1930.
2Professor.
3HAYS, W. M. Corn, its habits of root growth; methods of planting and cultivating, notes on ears and stools or suckers. Minn. Agr. Exp. Sta. Bul. 5:5-33. 1889.