THE growing of corn for silage presents one of the major soil conservation problems on the sloping lands of the New Jersey dairy region. Observations made in New Jersey indicated a considerable variation in depth of top soil and growth of corn on numerous areas. Some of the observed variations in soil and condition of growth could be correlated with differences in method of tillage or previous soil management. Moderate to steep slopes that had been planted to corn for several years with rows up and down hill were the most seriously affected. Many of these areas have been abandoned because of unsatisfactory crop yields. Other fields with slopes as extreme as the abandoned areas, but under different methods of tillage or management, were observed to have suffered only moderate erosion and to be of average productivity.

In order to obtain information on some of the observed differences, the Soil Conservation Service and the New Jersey Agricultural Experiment Station established a series of runoff measuring plots at the Dairy Research Farm of the New Jersey Agricultural Experiment Station at Sussex, N. J. The objective of the experiment was to determine the effect of contour tillage of corn on soil and water losses, crop yields, and certain soil properties.

THE EXPERIMENTAL AREA

The field studies were conducted on a soil of the Dutchess series, which, together with closely related series, is representative of approximately 3½ million acres of land in the Northeast and includes the principal soil types found in the northern extension of the Great Valley. The particular area selected was considered representative in soil, slopes, and topography of many of the areas used for corn growing in the Northeast.

The soil of the experimental area is designated as Dutchess loam. However, current correlation based upon field inspection may place the soil in the Albia series. Pending the confirmation of the field correlation with laboratory studies, the soil will be designated as Dutchess loam. The soil has developed from the underlying shale and glacial material. Under virgin conditions, there is evidence of podzolic development. When cultivated and not severely eroded, the soil has a brown to grayish brown friable A horizon, 0 to 8 inches in depth. The B horizon is light brown in color and more compact than the A. The degree of compactness

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2Formerly Project Supervisor, Soil Conservation Research, New Brunswick, N. J.; now Senior Soil Technologist, Office of Experiment Stations, U. S. Dept. of Agriculture.
3The experimental area was only slightly eroded and thus the surface soil consisted largely of A material.