THE RELATION OF VARIOUS TYPES OF VEGETATIVE COVER TO SOIL DRIFT

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THE first demonstration project for the control of wind erosion in the United States was established by the Soil Conservation Service in August 1934 in the vicinity of Dalhart, Texas. The project comprised about 47,000 acres and was located 10 miles northeast of Dalhart, Texas. In January 1936, studies were started by the Division of Research, Soil Conservation Service, to determine the causes of soil blowing and the development of methods for its control. Emphasis during the first year was placed on the control and stabilization of sand dune land.

Erosion in the vicinity of Dalhart is principally caused by winds of high velocity. Some water erosion occurs during intense rains, but it is not the serious problem that wind erosion is.

Previous to September 1937, detailed measurements of wind erosion made on two small plots showed that soil moves from land without vegetative cover and accumulates where there is cover; also, that hard, bare ground loses soil by sheet wind erosion a good deal more rapidly than would be indicated by casual observation.

These studies, however, were felt to be inadequate as a measure of the erosion occurring in different kinds of cover. For this reason it was decided to measure erosion along straight lines of comparatively great length, which would cross fields having varying conditions and types of cover. The results of such measurements are discussed in this paper, and they cover the period from September 1937 to October 1940. This period includes the three blowing seasons of 1937–38, 1938–39, and 1939–40.

CLIMATE

The most important climatic factors in the study of wind erosion are precipitation and wind velocity, with temperature playing a minor part.

The precipitation in the Dalhart vicinity is very irregular and averages about 17½ inches per year. Great portions of each year's precipitation usually occur in several very intense rains. Table 1 shows the precipitation which occurred near Dalhart during the years 1937 to 1940, inclusive, as compared with a 31-year average as measured at the Dalhart Dry Land Experiment Station.

The Southern Great Plains are characterized by a windy season which usually begins in February, reaches a peak in March or April, and comes to a close in May or June. Most of the high velocity winds occur during the warm part of the day,