In the fall of 1920 a careful study was initiated for the purpose of ascertaining the relation of climate to the yield of wheat grown on the Maryland Agricultural Experiment Station farm at College Park. Four varieties of wheat were used in making the study. The yield records cover a period of 12 years.

Correlation coefficients for temperature and precipitation for each month of the growing period and for each variety were determined. A significant negative correlation was found between precipitation and yield for March and May. No significant correlation could be found between temperature and yield.

Other factors were also investigated, but further study will be necessary before their actual relation to yield are determined.

The precipitation records from three cooperative stations have been used, namely Border and Evanston, Wyo., and Laketown, Utah. Border is located on the Wyoming-Idaho border about 12 miles northeast of the north end of Bear Lake; Evanston is near the Wyoming-Utah border about 60 miles south-southeast of the south end of Bear Lake; and Laketown is about 2 miles south of the south end of the Lake. These are the only weather stations in this general region having continuous records for many years, the length of the shortest record being about 18 years. Fortunately these stations are located rather far apart, are in desirable locations, and have dependable observers who have served almost continuously at each of the stations.

As the normal precipitation at the three stations is not the same, in order to give equal weight to the three records, the amount in inches for the various periods for each station has been converted into percentages of the average for the 18-year period, and the mean of the three percentages has been used as required in the comparisons.

The run-off records available are from the Dingle gaging station from 1903 to 1915 and from the Harer gaging station since 1913. The annual values appear in Table 1. Both stations are situated above the point of diversion into Bear Lake from Bear River. The quantity of water diverted from the main stream above Harer is partly a matter of river stage, and more water is diverted when the bulk of the run-off occurs in June rather than when it occurs earlier in the season. This statement, it is believed, explains the somewhat erratic plotting of a part of the Dingle points on the comparison diagrams.

On figure 2 four comparisons of precipitation and run-off are made. These consist of four calendar arrangements of the precipitation, namely, November-January; November-February, November-March, and November-April, each of which is compared with the March-July or flood run-off measured at Dingle and Harer.

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