ATMOSPHERIC moisture commonly thought of in terms of relative humidity is an important climatic factor in agricultural production. The effect of moisture in the environment has been especially emphasized in the analysis of plant disease and hay-making problems. Most of the data reported in studies on moisture content of air over experimental field plots are taken by instruments located at about shoulder height, the standard location generally recommended by the U. S. Weather Bureau. Air temperatures 5 feet or more above ground level may be similar over an area of several square miles but within a few inches of the ground surface (the microclimate), air temperatures (1, 3, 4) may vary widely within even small areas. Atmospheric moisture relationships also vary with the location.

Relative humidity is even more variable than temperature because it involves the amount of moisture in the air in addition to its temperature. By definition, relative humidity is the ratio, in percent, of the vapor pressure of water in a parcel of air to the vapor pressure that it would have if it were saturated. Since this latter varies with temperature, relative humidity may remain constant even when the amount of water in the air increases or decreases. The temperature at which the relative humidity occurs must be considered. A combination of these factors may be expressed as the vapor pressure deficit. Numerically, this is the difference between the vapor pressure of air and that air saturated. This provides a valid comparison of potential evaporation at different locations and at different times irrespective of temperature.

In this study, dewpoint and air temperatures were simultaneously determined at the same places, and relative humidities and vapor pressure deficits were computed for time and location.

Moisture in the air is frequently considered as originating mainly from bodies of water such as lakes, rivers; or the ocean. While water is obtained from these sources, extensive evaporation occurs over land areas from plant foliage and from soils that are normally high in moisture or that are wet from rain.

Since vegetation is one of the primary sources, the moist-