SOME ASPECTS OF MICROCLIMATOLOGY IMPORTANT IN FORAGE PLANT PHYSIOLOGY¹

Dale N. Moss²

The productivity of plants depends on the environmental conditions under which they grow. The climate of an area has great influence on the local conditions surrounding individual plants. A general rain, a frosty night, or a summer drought will affect not only a single plant but many thousands of other plants in a field, or a county, or several states. Why, then, do we discuss micro-meteorology—Geiger's "Climate near the ground" or "Climate of the least space"—apart from the general field of climatology? Primarily because the local climate or environment, although controlled in general by the climate of the region, may differ markedly from another local climate a short distance away. A change in altitude, a difference in drainage, or a local spot of shade drastically affects the climate of a very small area. Hence plants in some localities may escape the frost. Or the foliage at the sward surface may be subjected to more severe frost than either the crowns beneath or the sheltered thermometer above. Thus, the description of the climate of a region seldom describes the environment of a particular plant or group of plants. If we are to add to our knowledge of plant physiology it is necessary to study the response of plants to their immediate and changing environment and seek the reasons for that response.

LIGHT

The productivity of plants is the net result of forces in the environment acting on a photochemical process, photosynthesis. Thus a logical method of studying the effect of microclimate on plants is to determine how the factors of the environment affect their response to light.

¹ Contribution from the Department of Soils and Climatology, Connecticut Agricultural Experiment Station, New Haven, Conn.
² Crop Physiologist.

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