

vestigated in this study, the light intensity during leaf growth was far more important than temperature in affecting the water use rate of the turf. Assuming adequate light is available, however, the rate of water use on any given day will increase as the temperature increases. In other words, we must distinguish between the effects of temperature during the growth period when the stomata are being formed on the leaf versus the actual temperature during the period when water loss is occurring. Thus, increased temperature, particularly above the optimum for turfgrass growth, results not only in a higher water use rate due to an increased stomata density, but also increases as the temperature is increased due to the higher rate of diffusion or movement of water molecules from the leaf to the external atmosphere.

Of the cultural practices investigated in this study the cutting height and frequency of irrigation were more important in moderating the water use rate than the total amount of water applied per week. In addition to these cultural factors the water use rate is increased if the turf is mowed with a dull, improperly adjusted mower. In this situation the leaf tissue is mutilated and injured to the extent that the water use rate is increased. From a nutritional standpoint, higher levels of nitrogen nutrition generally result in an increase in the total water use rate of turfgrasses. Other factors to consider include the effects of disease and traffic. Generally, water use rates increase on diseased turfs or those subjected to intense traffic.

In summary the more intensive cultural practices such as high levels of nitrogen nutrition and frequent irrigation result in an increased water use rate. Moderation in these practices can be achieved without seriously reducing the quality of the turf and, at the same time, also reduce the water use rate as well as the proneness to attack from turfgrass pests or to injury by heat, cold, drought or traffic stress.

This discussion is a relatively simplified version of some of the environmental and cultural factors influencing the water use rate. The processes involved in the absorption, translocation and transpirational loss of water from a turf are highly complex and interrelated. □

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The curriculum at Catawba Tech is aimed primarily for the type of turfgrass conditions the students

will encounter in the southeastern United States. Because each golf course requires design, establishment, maintenance and management, employees at all occupational levels are being trained to fill these vacancies. The program is unique for community colleges because every student receives summer work experience by being employed in a recreational grounds facility. By knowing the routine of golf course operation by performing the work himself, the school believes that the management-motivated student can appreciate, and prepare himself for, the responsibilities of ultimately becoming a superintendent.

Students in the program are employed (with pay) during the summer at nearby Rock Barn Club of Golf in Conover, N.C., and at Grandfather Mountain GC, Boone, N.C. During his employment, the student keeps a daily record of his activities.

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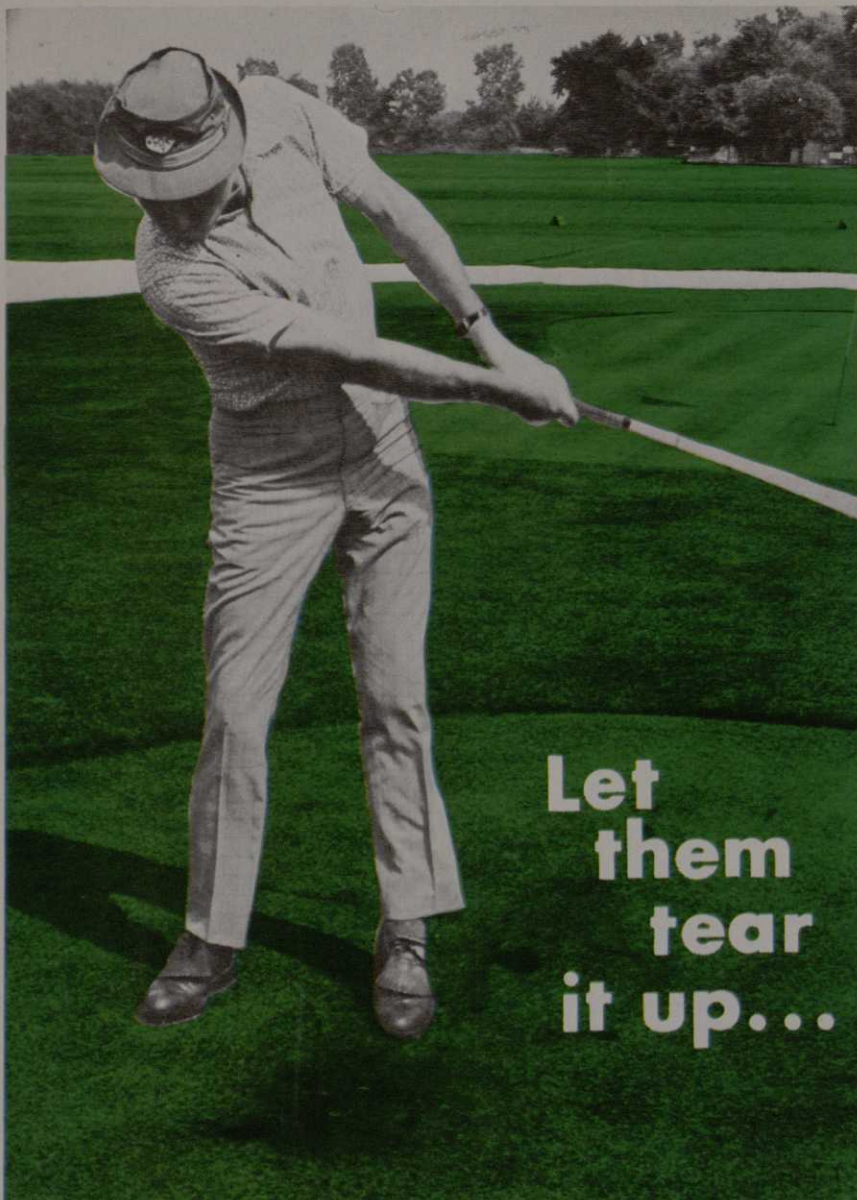
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