

# UNITED STATES GOLF ASSOCIATION GREEN SECTION WESTERN OFFICE



13267 Verano

Garden Grove, California

JEfferson 7-8385

WM. H. BENGLEYFIELD  
Western Director

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## • Western Turfletter •

When Watering --

### ROLL WITH THE WEATHER

Up to now, 'Summer - 1957' rates among the painful ones for Western Turfmen. From Phoenix to 'Frisco, soaring summer temperatures have seared the Poa annua and slowed the bent. During times of stress, all phases of turf management must be honed to a finer edge. Preventative disease control, good water management and proper fertility levels (including iron) probably top the critical list.

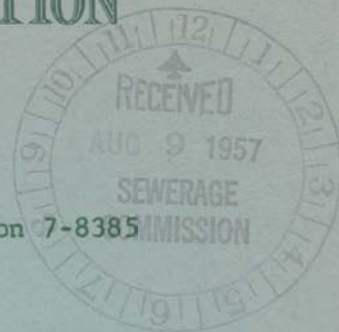
Summer maintenance programs must be flexible. They must "roll with the punches" that weather deals. This is especially true of water management and emergency watering procedures. Out of every 10 bad greens observed this summer, 8 have been caused (either directly or indirectly) by too much water.

Two fundamentals in turf management or any form of agriculture is the "know-how" and "know-why" of water use. An understanding of the "whys" helps us to know "how" to water properly.

Water transpires from plants through the evaporation of liquid water inside the stomata of the leaves (these are openings or "mouths" on the underside of the leaves). This water vapor diffuses or circulates through these openings into the air. This is called Transpiration and its rate depends on three factors:

1. The solar energy absorbed by the leaf, causing the water to vaporize in the stomata.
2. The rate of vapor diffusion or circulation into the atmosphere. (This depends on the difference of vapor pressures inside and outside the stomata).
3. The rate at which this vapor mixes with the atmosphere. (This depends on the windiness or turbulence of the air surrounding the leaf).

On a hot, dry day the air causes a big vapor pressure difference and transpiration increases. On a cool, moist day there is less transpiration because there is less vapor pressure difference. -- We also know that a windy day is better for drying than a still one: that hot winds speed up evaporation, while still, humid days do not help drying.



The leaves of plants absorb solar energy and use part of it to evaporate water in the stomata. Physics teaches that 600 calories of heat are required to evaporate one gram of water. This is what makes the leaves of a live plant exposed to the hot sun cooler than the bare soil. Transpiration is a cooling process. Plant physiologists also believe that transpiration is the mechanism used by plants to get rid of unwanted solar energy.

Now, do not miss this point: When plant leaves are exposed to the sun, they absorb energy (heat). In order to get rid of excess energy, they must transpire. Transpiration then (the loss of water), is a vital plant function.

This is where the importance of good watering techniques come into play. The root system of a plant must continually replace the water lost through transpiration. Certainly sufficient moisture must be present in the soil for this to take place. We all know what happens when our greens become too dry.

But what happens when our greens become too wet? The soil is now saturated with water, at least that area where most grass roots are located. All air or oxygen has been pushed out of the effective rooting area by overwatering. Our grass roots cannot take up sufficient water because they must have air or oxygen to function. Result: the grass dies for the lack of water -- while it is standing in water!

What is the answer then? DO NOT OVERWATER during times of stress. Reduce night watering on greens and plan to syringe or sprinkle 2 or 3 times daily during these hot periods. It is much easier to add a little water during the day than to try to find a solution to too much water applied during the night. Syringing has another benefit too. It will cool your greens, through evaporation, during the heat of the day.

Your watering program, as well as your feeding and fungicide program, must "Roll With The Weather" during the summer.

### T H E   E X C E P T I O N A L   M A N

There is a need today for the 'Exceptional Man': One who has new ideas and the initiative to put them into practice. There is a need for men who have the ability to dream a little.

A wise man once said, "One machine may do the work of 50 ordinary men, but no machine can do the work of one exceptional man." As a Golf Course Superintendent, you are the exceptional professional man among all growers of turfgrass. Today, at this very moment, you may be nursing an idea. Or it may be that an idea will come into focus while you are instructing your irrigation crew for the remaining summers work, or planning your fertilization program, or checking out the pin sets, or tee markers or clean towels. Ideas are keys.

Each of us have about the same number of brain cells as Thomas Edison, or Alexander Graham Bell, or Abraham Lincoln -- or any other great man in history or contemporary times. The challenge to you is whether you are content to be an ordinary individual, or whether you can make the most of your opportunity to be exceptional. -- Dream a little.

TURF CONFERENCE DATES ARE SET

"Education is the process of driving a set of prejudices down your throat" said Martin Fischer a few years ago. -- But he couldn't have been talking about our Western Turf Conferences. For here is an opportunity to exchange ideas and become more fully grounded in the fundamentals of turf management. "Turf Conferences are an opportunity to progressive Superintendents -- not a threat."

WASHINGTON STATE TURF CONFERENCE - Dr. J. K. Patterson

Washington State College, Pullman, Washington

October 3 & 4, 1957

UTAH - IDAHO TURF CONFERENCE - Mr. J. W. Richardson

Ogden Country Club, Ogden, Utah

October 7 & 8, 1957

ROCKY MOUNTAIN TURF CONFERENCE - Professor George A. Beach

Colorado State College, Ft. Collins, Colorado

October 10 & 11, 1957

NEW MEXICO TURF CONFERENCE - Mr. C. E. Watson

New Mexico State College, College Station, New Mexico

October 14 & 15, 1957

ARIZONA TURF CONFERENCE - Mr. Joseph Folkner

University of Arizona, Tucson, Arizona

October 17 & 18, 1957

Plan now to attend.

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"There are people who are serenely satisfied with mediocrity. Their lives are records of negativism. They have done nothing bad; but worse, they have done nothing good."

O. E. Peterson

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