

tering when disease has injured the turf. One thing sure, shallow rooted turf would like it that way. Unlike the camel and the cactus, it can't store enough to last for several days.

Buy Equipment Instead

Wayne Morgan, farm advisor in turf in Los Angeles County, deserves credit for his field work on golf irrigation practices. He has found that a simple 10 minute saving in sprinkling time per head can save enough to buy the fanciest tractor and fairway mowers in his arid country where water costs and use rate are both high. Morgan has done this the hard way by "can tests" to determine the actual delivery rates of sprinklers.

The form sheets on delivery rate put out by manufacturers sometimes fall short of accuracy in practice for many reasons. Unexpected loss of pressure, unfavorable wind movement, poor valve spacings, etc. are but a few reasons why. It would seem the only sure way to know what your sprinklers are doing is to string out cans or containers, let the system run for a set period of time, and then measure the results.

Most states have checked water use rates on agricultural crops and these can be used as a guide until more is known about various turf species. Dr. Bob Hagan, irrigation department, University of California in Davis, has estimated peak usage of 3 inches per week in the hot Imperial Valley of his state to a low of 1 inch per week in coastal areas. Dr. James Love at Wisconsin states the top day in his area on alfalfa is 0.27 inches. If this holds true on turf, one comes up with a maximum of 1½ inches per week in the upper Midwest with a seasonal average of 1 inch or less per week during the growing season.

Flexibility Is Desirable

Obviously, irrigation systems must be designed to supplement rainfall and to be capable of taking care of maximum use rates. Incidentally, there is no area in the world that doesn't need water on occasion to keep golf turf green, vigorous and uniform in playing quality. The secret with successful turf managers is their flexibility in applying it when and where needed.

Turf Conferences

OCT.

- 10—Rutgers Field Day, New Brunswick, N. J.
- 21-22—Equipment & Materials Exposition, Brookside Park, Pasadena, Calif.
- 21-23—Central Plains Conference, Kansas State University, Manhattan
- 25-27—Sprinkler Irrigation Assn. Convention, Scottsdale, Ariz.

NOV.

- 4-6—Oklahoma Turf Conference, Oklahoma State U., Stillwater
 - 16-20—American Society of Agronomy, Kansas City, Mo.
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We have concentrated on water in this year's roundup because either too much or a lack of it was responsible for most turf troubles during the past year. In July, parts of Illinois and Southeastern Wisconsin received from 7 to 10 inches of deluge in the space of a few hours. Those that got only 3 to 4 inches at the same time came off relatively easy. Whether or not this proves the point is immaterial. The material point is that 70 per cent of good grass is water. We don't want more or less . . . just that amount.

This year pythium disease from the Northeast to the upper Midwest was a serious problem for the first time. Iowa was literally clobbered with leafspot on all grasses, and supts. fought hard to stop this pest. Beryl Taylor, reporting from Ames, told us that Zineb (sold as Parzate or Dithane) did the job for him. But, to make it really work he applied it heavily and repeated for two straight days before effecting control.

It Works . . . and It Doesn't

The pythium in the Midwest was even more discouraging. Familiar fungicides including Zineb failed, and Illinois pathologists discouraged the use of the only effective fungicide known for the disease. Dr. Homer Wells of the Tifton, Ga., station, reported some time ago on favorable results with Dexon in controlling pythium. Although it worked well there on ryegrass, and in Arkansas and Indiana on bent, the University of Illinois ran into turf injury and discouraged its use.

Fairway problems were of such magni-

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