

"How to Use Water in Turf Management"

Attracts 275 to 30th Iowa Conference

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Over 275 men and women who make some phase of turfgrass management part of their professional responsibility attended the 30th annual Turf Conference at Iowa State University in Ames, March 10-12. Theme of the 1964 meeting, "Water—Its Procurement, Application, and Use by the Grass Plant," was of keen interest since turf managers often encounter extremes in natural moisture levels. Even within one season, turf experts may be confronted with excesses of moisture as well as with drought.

Key points in maintaining turf during periods of excessive rainfall were emphasized by Dr. James R. Watson, Agronomist with Toro Manufacturing Co., Minneapolis, Minn. He stressed the importance of being able to get water through a soil or off the surface without keeping the turf waterlogged for long periods of time.

Need Porous Soil

Soil must be sufficiently porous to provide good internal drainage and graded so that surface runoff will not be hindered by low spots. Soils which tend to be wet compact easily when turf is used for normal recreational activities. Aeration with machines that remove a core of soil and surface spiking help to promote better growth of grass under these conditions, the Toro official commented.

High Humidity Spurs Fungi

Dr. Houston B. Couch, Plant Pathologist at Pennsylvania State University, College Park, explained that there's nothing disease-causing fungi in turf like better than conditions of excess water and high humidity. Under these conditions, watch out for disease.

The type of disease that de-

velops will depend on whether it's warm or cool. Jerry H. Cheesman, Agronomist with the United States Golf Association Green Section, reported that in his studies conducted at Iowa State University bluegrass turf was more susceptible to *Helminthosporium* leaf spot when moisture levels were optimum and when nitrogen supply was high.

Water, Lime Affects Disease

It is becoming more widely recognized that watering, fertilization, and liming practices have an influence on the development of turf that make it either more or less resistant to several disease-causing organisms.

Professor Ted L. Willrich of the Department of Agricultural Engineering at Iowa State University outlined geologic processes that have resulted in the formation of water-bearing gravel and rock deposits.

Before attempting to solve problems of water shortages with expanded irrigation facilities, it is necessary first to determine the quantity of water needed and then to locate a source that will provide this amount.

Impound It or Pump It

In some areas the impounding of surface water is most practical. In others, water must be pumped from driven or dug wells. Local regulations on procurement and use of water must be followed.

Even where water is generally plentiful there are some years when shortages exist and turfgrass irrigation must be curtailed. In other locations watering of golf course fairways and irrigation of park and other large turf acreage is not practical.

Importance of encouraging deep root penetration of turf-

grasses was discussed by Tom Mascaro, president of West Point Products Corp., West Point, Pa. The deeper roots go into the soil the greater the volume of soil available from which moisture and plant food can be extracted, Mascaro observed. Roots penetrate compacted soil with difficulty, but when soil is loosened by use of mechanical aerifiers, roots grow deeper.

It should also be remembered that light, frequent watering helps keep roots near the soil surface and thus this practice should be avoided. Turf is more likely to be injured by hot dry weather if it is soft and succulent from fertilization with too much nitrogen, the speaker concluded.

Check Sprinkler System

In the final analysis, whether or not turf gets the amount of water it needs often depends on the adequacy of the sprinkler system, according to C. H. Dolan of Johns-Manville, who discussed problems of water use. Even distribution of water is important in producing a uniform turf. Such factors as sprinkler sizes, specifications and placement, pipe sizes and specifications, and pump specifications determine how evenly the water is placed over the turf. In some instances an under-designed system makes growth of grass more difficult than no system at all. An investment in high quality fine turf should always be protected by an irrigation system designed to meet the needs of the grass.

It has been estimated that about 70% of the problems which arise in turfgrass management are related to too much or too little water. Since water is essential for plant growth the turf manager cannot escape the responsibility of getting rid of excesses and of finding and applying more during times of shortage. Those who are most successful at these times give credit to a properly maintained and healthy turf for an assist in helping them survive periods of adversity.