

Adequate Drainage Key to Holding Courses During 1964 Heat and Humidity

(A Report from the Chicago District Golf Association)

A panel of turf authorities which included:

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WARREN BIDWELL	President, Midwest Association of Golf Course Superintendents; Superintendent, Olympia Fields Country Club
DR. MIKE BRITTON	Turf Pathologist, University of Illinois
JACK D. BUTLER	Turf Pathologist, University of Illinois
DR. WILLIAM DANIEL	Professor of Agronomy, Purdue University
ROY NELSON	Past President, Golf Course Superintendents' Association of America; Superintendent, Ravisloe Country Club

arrived at the above truth during a seminar called by the Midwest Association of Golf Course Superintendents and the Chicago District Golf Association at the LaSalle Hotel on August 21, 1964. The meeting was attended by 212 people vitally interested in what happened to Midwest golf courses during the summer of 1964 and what can be done to avoid recurrence. They were welcomed by Charles N. Eckstein, Chicago District Golf Association Green Chairman, and the following is a distillation of the opinion represented.

It was established that two types of fairway turf are present in the Chicago area; *Poa annua*-bentgrass and Kentucky bluegrass-fescue. *Poa annua* is an annual bluegrass which will withstand short cut, has a shallow root system and requires frequent watering. It is a fair weather friend which exhibits extremely vigorous growth in cool weather but thins out during periods of extended heat and humidity. Bluegrass-fescue is a hardier turf with a deeper and more vigorous root system. It requires less water than *Poa annua*-bentgrass.

On heavily watered, short cut fairways *Poa annua* predominates and makes up the fairway turf, even though many people are under the impression that bentgrass is the primary cover. Therefore, it must be kept in mind that the culture of *Poa annua*, and not bentgrass, is the first concern. This is important because *Poa annua* will succumb to the vagaries of nature more quickly than will bentgrass.

Many clubs have attempted to establish and encourage a greater percentage of bentgrass in fairway areas. Results to date have not been heartening pri-

marily because *Poa annua* crowds out bentgrass during spring and fall when *Poa annua* is undergoing vigorous growth.

Equipment has been introduced which semi-tills the soil, thus presenting a more suitable seed-bed without greatly interfering with play. It is possible that through diligent and proper use of such equipment larger amounts of bentgrass can be encouraged in fairway areas. Current knowledge indicates this would be desirable. Even so, the absolute necessity of rapid surface drainage can never be overlooked.

Surface Drainage Answer

Surface drainage is the unequivocal answer to the perplexing problem of holding *Poa annua* during periods of high heat and humidity. Continued observation proves that turf in well-drained areas does not die. Conversely, turf in areas of poor drainage frequently shows 100% kill. A two-inch rain should (and CAN) be drained in 15 minutes to prevent death of turf. *Poa annua* cannot tolerate standing water.

An excellent case in point is the surface drainage work done by Roy Nelson, Superintendent of Ravisloe Country Club. Mr. Nelson developed a new system of drainage slit trenches filled with pea gravel, which, combined with proper tile installations, has afforded rapid surface run-off. The Ravisloe program to insure adequate drainage began in 1958. Prior to that date large fairway areas were frequently lost. Since the new drainage program has been completed, a minimal amount of turf is lost during extended periods of high heat and humidity—even during the summer of 1964.

This view is substantiated by the fact that courses built on inherently sandy soil which characteristically drain quickly suffered little or no "kill" in '64.

From conclusions drawn by the panel it can be stated that *Poa annua* turf in the Chicago area can be maintained in good playable condition even when under attack by the twin culprits—high heat and humidity—if rapid surface drainage is afforded. High heat, humidity and free moisture provide a perfect environment for turf diseases and are ideal to nurture fungi which can be pathogenic, such as *Pythium* sp.

An interesting concept is the exploration by the panel of chemical control of serious disease problems which developed on courses last summer. Invariably disease activity was most damaging in low, water-holding areas. Repeated applications of fungicides, even though the fungicide was reportedly a control for the disease present, gave a minimal amount of control. At the present time no truly effective fungicide is available to combat "kill" under severe weather conditions when excessive surface moisture is present.

The University of Illinois has initiated a program of experimental work with *Poa annua* because it is the predominant turf on watered fairways. Efforts will be made to delineate growth habits accurately to arrive at more effective disease controls. Turf work at Purdue University is directed, and has been for many years, toward practices which would enable the turf man to live better with and maintain various types of grasses suitable for use on golf courses.

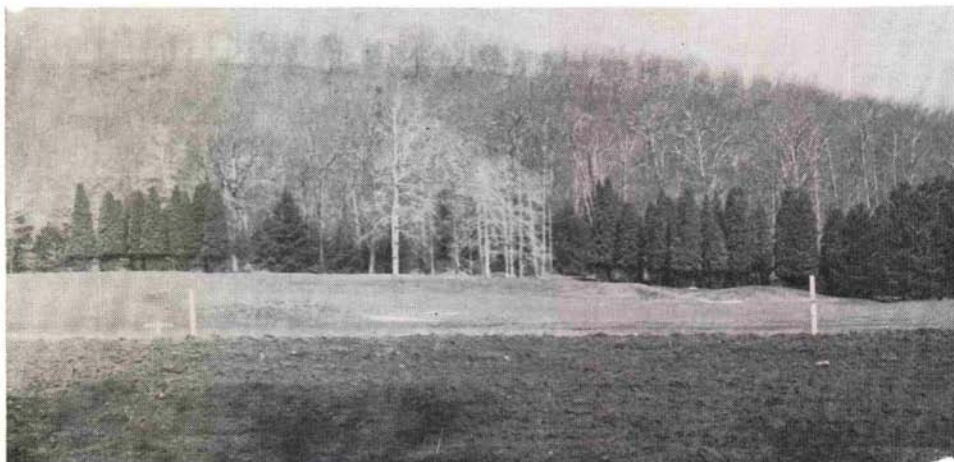
Courses which have bluegrass-fescue fairways maintained excellent playing conditions throughout the 1964 playing season. Bluegrass-fescue fairways must be cut higher than *Poa annua* in order to maintain adequate turf cover but are not as severely affected by heat and humidity as is *Poa annua*. The only reason golf courses have short cut, watered fairways (*Poa annua*) is because better players demand this type of turf. They insist the ball must be "pinched" against the turf, thereby taking a divot, in order to execute an accurate shot. If fairways are cut higher as is necessary with bluegrass-fescue, it is difficult to "pinch" the ball against the turf.

Examples of short cut, watered, *Poa annua* fairways are Evanston Golf Club, Skokie, Sunset Ridge and Ravisloe Country Clubs. Bluegrass-fescue fairways are found at Chicago Golf Club, Silver Lake Golf Club, Knoll-

wood Club, Rolling Green, Illini (Springfield), Danville and Rockford Country Clubs. The consensus of the panel was that courses with bluegrass-fescue fairways would continue with this grass and those which were dedicated to short cut, watered, *Poa annua* fairways would not go back to the higher cut.

Specific and detailed course management programs, tailored to the individual course, must be established by the superintendent, but successful course management cannot be effected until drainage is established which will rapidly remove standing water.

All golf should be grateful to the panel which met last August. They combined the best of academic research with practical and successful experience to produce a significant conclusion to help every chairman and superintendent achieve better turf and, ultimately, happier golfers.



The lower limbs of these tall, stately arborvitae were grazed by deer. Note the uniform shearing and subsequent umbrella effect. This view is taken across No. 5 on the lower course at Baltusrol Golf Club, Springfield, N. J.