

# Fertilizer, Water Control To Keep Turf Healthy

By ROBERT M. WILLIAMS

Supt. Beverly Country Club, Chicago, Ill.

A report presented at the panel on fertilization and irrigation at Midwest Turf Conference, Purdue University.

THE part played by both fertilization and irrigation in keeping healthy turf is of such great proportion that my remarks are limited to more or less general conclusions.

The objective of our fertilizer program



Robert M. Williams

for tees, greens and fairways is to stimulate the grass plants to a degree that will produce maximum limits of tolerance for the following factors:

1. Lengthen the golfing season as long as possible by extending the spring and fall growing periods.
2. Produce a turf that has a comparatively steady growth.
3. Maximum resistance to and recovery from damage of common enemies such as physical wear, disease, drought, insects and the like.
4. Control over mat and thatch development.
5. Appearance through color and density of the turf.
6. Minimum risk from burning the turf at the time of application or later.
7. Maintaining desirable levels of plant nutrients within the soil.
8. Lastly, but most important of all, playability that affords satisfaction for the majority of membership.

I believe that we would all agree that these objectives apply to your courses as well as to mine and to all areas on our courses.

The practices of fertilizer application vary considerably from area to area, course to course and from year to year due to changing conditions: Conditions such as type of grass, soils, weather, equipment and many others.

Our green and tee fertilizer program con-

sists of the total annual application of about 5 lbs. of nitrogen per 1,000 sq. ft., approximately 1 lb. of phosphorus per 1,000 sq. ft. and close to 2 lbs. of potash per 1,000 sq. ft.

## Change Fairway Program

Our fairway program of fertilization was changed last year. We started out last March with an application of 200 lbs. per acre of a half and half mixture of synthetic urea and white muriate of potash. The next application was activated sewage sludge at 600 lbs. per acre during the latter part of August. This gave us an annual total per 1,000 sq. ft. of approximately 2 lbs. of nitrogen, one-half lb. of phosphorus and 1½ lb. of potash. The application of urea and potash gave us a nice steady growth well up into July. The cost was about half of what we had been spending previously on ready mixed materials. Total bulk of the material was reduced from about 14 to 4 tons. The time of application was reduced from 24 to about 10 hours.

Now let us consider the closely related subject of irrigation. With irrigation, as in other practices, first of all what are the objectives? What are we trying to accomplish? My opinion is that we want to maintain a degree of soil moisture that will be most effective in sustaining the grass plant at the most practical level of general health. Here again, as with fertilizer, when we change the conditions of grass types, soil types, weather and many other factors, we must change our methods of practice in order to accomplish the same objectives.

## Concentrate on Soil Moisture

In the Chicago area, during adverse weather periods, soil moisture is the No. 1 consideration for maintenance of mixed poa annua and bent turf. The closer the degree of control over the soil moisture by the supt. the better results he will produce. By keeping a close watch over the soil moisture we have practically eliminated the loss of poa annua in putting greens. We still have had to sit by, though.

## BOOK REVIEW

Golf Secrets of the Pros — By Larry Robinson. Published by Fawcett Publications, Greenwich, Conn. Price 75 cents.

Robinson, who's been close-up to star golf for many years as the New York World-Telegram Sun's golf reporter, has produced a highly interesting and helpful book in this profusely illustrated 148 page paperback book. Don't let the price fool you; there's a lot of fine stuff—type and pictures — in the book.

Pros who are subjects of the book's chapters are Snead, Middlecoff, Mangrum, Souchak, Armour, Stranahan, Bayer, De-Toski, Fleck, Littler and Jack Burke. Fleck, Littler and Jack Burke.

Among the informative pictures which pack the book are some of the GOLFING magazine special action series with the horizontal lines at knees, hips and shoulders and the vertical line through the center of the body; the pictorial treatment which has made it easier for the average golfer to read and understand golf pictures as his pro is using them for his instruction.

recognized that turf was a part of agriculture. The fact that he did something about it eloquently is told in the mere listing of some of his agronomy students who have made significant contributions in the turfgrass world:

Dr. Howard B. Sprague, Dr. Burton H. Kiltz, Dr. Fred V. Grau, Dr. Glenn W. Burton, Dr. G. O. Mott, Gordon Jones, Dr. Ralph H. Engel, Dr. John Bengston, Dr. Willis Skrdla, Don Likes.

One could go on to name many more of his students who have reached the pinnacle in their professions — in genetics, in soil conservation, in range management, in pasture management, to name a few.

### Seeks Retired Superintendents

Art Snyder, who is running the Turfgrass Farm, 4961 E. 22d st., Tucson, Ariz., is looking for some retired golf course superintendents who could supervise large plantings of Meyer Z-52 zoysia for three to five weeks. If you know any such men have them write Art.

### Club Managers

Turn to page 126 — and make sure your active operating heads receive GOLFDOM in 1956.

and watch poa go out in fairway areas because of a lack of moisture control in these areas anywhere near that of the greens. Our green watering program during mid-season generally calls for the watering of the greens about every other night and sometimes every night, for periods varying from 15 minutes to 1 hour. One can readily see then that this sort of control has been out of the question on larger fairway areas because of the limitations of water systems.

At Beverly we are meeting this problem by installation of additional pumping facilities that will allow us to use approximately 1400 gals. per minute compared to the former 450 that has been more or less standard in the past. This simply means that we will have the capacity to water all tees, greens and fairways during one night if we so desire. And many is the time when poa annua starts turning blue with wilt that we say, "If that turf doesn't get water tonight, or sooner, it will be gone by tomorrow." At the same time we know that our water system will only allow for watering of perhaps 6 fairways and the rest will have to wait for one or two days more.

After we achieve moisture control through irrigation, drainage and aeration our last obstacle to maintenance of close cut bent and poa annua fairways is disease control of these larger areas.

To summarize, I believe it may be simply put: through controlled moderation of fertility and moisture we can expect turfgrass to be more resistant, more tolerant, healthier and more usable than ever before.

### Dr. Frank Keim, Turfgrass Leading Teacher, Dies

THE sudden death of Dr. Frank D. Keim in Washington, D.C., on March 15, 1956 marked the passing of one of the greatest friends turfgrass people ever had. His name and his fame though little known in turfgrass circles, has been carried to the ends of the earth by his loyal students in agronomy from the University of Nebraska. Dr. Keim, the teacher, gave so much of himself to his hundreds of students, that they multiplied his gospel a thousandfold. He gave inspiration to his students, to his staff, and to everyone who knew him.

Dr. Keim was one of the first administrators at a great land-grant institution who