

Fertilization of Greens

by JAMES R. FULWIDER

The fact that fertilization of golf course turf is such a common practice and has been done for so many years might make one think that it would have been completely standardized by now. We know this is far from true. Many variables enter into fertilizing. Researchers are still searching for the answers to plant requirements and the effect some plant nutrients have on each other. They are also still trying to find better methods of determining these requirements. Factors such as soil texture, grass management practices, soil structure, kinds of fertilizer and the individuality of the growers all affect the manner in which turf is fertilized.

Even though nitrogen (N) is the most important nutrient used in fertilization, we know that the other basic nutrients such as phosphorus (P) and Potash (K) must be kept in balance. O. J. Noer's tissue test with grass clippings, which indicated the amounts of plant nutrients extracted from the soil by the plant, had much to do with the 3-1-2 ratio many of us use to fertilize grasses today.

One of the trends noticeable in recent years is the reduced rules of fertilizer applied to fine golf turf grasses. Perhaps the reason for this is that superintendents find they are likely to experience far less difficulty if grasses are kept on the hungry side. However one could go too far, and this could result in thin, unhealthy and undesirable turf.

The Superintendent must weigh many things in his fertilization program. The only scientific approach he can rely on is a chemical analysis of the soil, which should be taken periodically. And again, this is only a guide. Therefore his

fertilization program depends a great deal on his own observations and his ability to make adjustments. Fertilization of greens and the program the Superintendent follows is very much influenced by the type of putting surface the members demand.

My fertilization program for greens is fairly basic and simple. Mixed fertilizer, usually a 12-4-8 analysis, is applied each spring and fall. The spring treatment is applied around the latter part of April, and the fall application in the middle of September. The spring and fall rates are approximately $\frac{3}{4}$ pound of nitrogen per 1,000 square feet. During the remainder of the warmer growing season organic fertilizers are used almost exclusively in small but frequent applications. Total nitrogen for the year approximates five pounds per 1,000 square feet. This will vary with the season and with weather conditions. The nutrients derived from top-dressing soils, which are sometimes overlooked, definitely would increase the nitrogen total. Some nutrient variations exist from green to green, and even at different areas on the same green. A few years ago we enlarged two greens, and the soil composition of the new parts was much sandier than the old greens. This new sandy section required more fertilizer than the old portion of the green, and I found that the fertilizer had to be applied more frequently because of the greater leaching effect.

As most Superintendents, I study the greens for turf quality, and note the amount of clippings being removed almost daily. This is perhaps the most effective yardstick in deciding what the fertilizer program should be.