

# Meeting Today's Demands: Fairway Maintenance and Improvement

By Bruce R. Williams, Bob O'Link Golf Course

Great strides were taken during the 70's in golf course management. During that decade, we saw major advances in chemicals, equipment, cultural practices, and fertilizers.

The demand for golf courses increased during the same period, and along with that came the demand for improved playing conditions. Fast and true greens are now expected at most golf courses today. The golfer of the 80's expects only a slight variance in the greens from one golf course to another. It has become a foregone conclusion that the golf course superintendent will provide a high-quality putting surface.

Our eyes have not turned to the condition and playability of the fairways. Improved fairway conditions set the better courses apart from the others. This is the demand of the golfers of the 80's, who prefer a tight fairway lie so that they can hit the ball cleanly with the club face and eliminate fliers. In order to make that possible, we must provide a dense, healthy, upright plant so that the ball sits up.

It is important to note there at the onset that, when we speak of fairway maintenance, the superintendent is usually dealing with the native soils. In many cases, we have clay soils located in flood plains which drain rather poorly. We must make the best of whatever conditions the natural soil and terrain provide.

## Long-Range Planning Objectives

In 1977, we began a long-range plan to accomplish two objectives with our fairways. The primary concern of the members was to enhance the playability of the fairways, as mentioned above. The natural approach would be to reduce the height-of-cut and reduce the amount of irrigation. As we all know, this is easier said than done.

The secondary concern was that of the golf course superintendent in trying to keep the fairway turf alive at the reduced height-of-cut and on a reduced irrigation schedule. Things were already tough enough without putting additional stress on the fairway turf.

Each area of our program will be seen to have played its part in our total approach to achieving those original objectives.

## Drainage

Without a good drainage network it

is nearly impossible to establish and maintain good turf. At Bob O'Link, the golf course was working with the original drainage system installed in 1916. The system had since been repaired, updated, and expanded, but was not producing optimal results.

Over a three-year period we replaced deteriorating main lines and laterals. We installed new laterals on every fairway, as that procedure was cheaper than repairing the existing laterals.

Two additional men were employed during those three years. On the average, we used five men on the drainage project Monday through Friday. We installed over 33,000 feet of 4-inch perforated PVC on 14 fairways and back-filled the trenches to the surface with No. 5 stone. The project cost was roughly \$60,000 for labor and \$40,000 for stone and drain pipe.

## Irrigation

The existing automatic controls for our automatic irrigation system were 15 years old and no longer reliable. Timing was erratic and our central control was barely holding its own. A decision was made to convert our existing field controllers to the Toro VT 3 system and then install the compatible central control.

The project was completed in less than a week, and we now have accurate timing for our sprinklers. It's always nice to have a head run for 5 minutes when so programmed — rather than running for 2 minutes or sticking on a station for 60 minutes or longer.

The use of solid-state controllers, replacing electro-mechanical controllers, enabled us to run the system with a high level of accuracy. We currently employ one full-time man to operate, repair and maintain our irrigation system and pumping plant.

## Wetting Agents

Beyond the direct improvements in our water application and drainage, it is important to note also that the use of wetting agents on our fairways contributed to a successful program. Our best results were shown using four applications of Aqua-Gro at 8 oz./M. at 30-day intervals starting May 15th. The wetting agent helped water percolation and drainage — and enhanced root development.

With an improved irrigation system, an improved drainage network, and the

use of wetting agents, it was much easier to limit the amount of water applied to the fairways. Moisture continuity developed and the number of wet spots and localized dry spots were kept to a minimum. Our objective of drier fairways was met.

## Mowing and Clipping Removal

Several years ago, we experimented with the use of light-weight mowing equipment and clipping removal for the fairways. The results — after one year of clipping collection with Turf Pro 84's — were outstanding.

We followed the work already done by superintendents such as Al Muhle, Cal Gruber and Tony Bifano — all fellow GCSAA members. This topic has been covered at length in recent years, so let it suffice to say that the members of Bob O'Link were impressed with the program and we plan to use three new HF-5's — with baskets — to mow all of our fairways this year.

Our height-of-cut on the fairways varied from  $\frac{3}{4}$  to 1 inch in the 1970's. We now mow at  $\frac{1}{2}$  inch in the beginning of the season and raise the mowers to either  $\frac{5}{8}$ " or  $\frac{3}{4}$ " depending on stress. What was formerly the low end of our cutting-height range is now the top of that range. By removing the clippings, we have noticed a reduction in disease incidence, an increase in the bentgrass population, and reduced temperatures in the turfgrass canopy.

## Fertility

During the early 70's recommendations for fertility of fairways may have been as high as 6 lbs. N/M per year. Research has shown that in the north-central part of the U.S., we can now feel comfortable with 3 lbs. N/M annually.

With clipping removal, we must increase our fertilizer requirements by about 20 percent. We apply  $1\frac{1}{4}$  lbs. N and K/M in December with half of the N being Urea and the other half sulfur-coated Urea. A  $\frac{1}{2}$ -lb. application of the same material is used in early May, in late August and in October. The seasonal fertility ratio is 3-1-4. High levels of sulfate of potash enhance the heat and drought tolerance of the turf, making the leaf blades more rigid.

To be continued in December issue. Reprinted from *The Gateway Green*.