

of lightweight fairway mowing and the use of PGRs, bentgrass is spreading dramatically in fairways, and there appears to be more of a shift to bentgrass overseeding and away from perennial ryegrass.

More attention is also being afforded the roughs. *Poa*/bent rough areas are being seeded or sodded to Kentucky

bluegrass and/or perennial ryegrass to improve their appearance and playability. In addition, more liming, fertilizing, and aerifying is being done to improve turf density in the roughs, especially in areas that suffer through heavy cart use. Finally, more and more courses are raising cutting heights in the roughs, maintaining a four- to eight-foot inter-

mediate cut, and using rotary mowers for the roughs. Rotary mowers are more maneuverable and produce a truer cut by lifting the turf as they cut.

Winter in the Northeast gives the superintendent the opportunity to reflect on last season's successes and failures, and plan for the inevitable problems and challenges of the year ahead.



Great Lakes Region

by JAMES M. LATHAM, JR., Director

WATER WAS a prime problem throughout much of the Great Lakes Region in 1986. Saturated soils left over from November, a January thaw followed by intense cold and then a period of freeze-and-thaw cycles caused a great deal of loss of annual bluegrass and perennial ryegrass turf. Survival was enhanced by rapid surface drainage and snow cover or other protection against varying temperatures at the soil surface.

The value of good drainage was reiterated in July, when a prolonged period of rain was followed by high day and night temperatures. Roots in the saturated soil and thatch were denied oxygen, and most of them died. Plant tissue became so weakened that some turf on closely mown greens was killed by simply using a squeegee to remove surface water. Foot traffic around the holes during this period was equally

lethal. Some diseases became epidemic, perhaps because the plants were in such poor physical condition that systemic fungicides could not be adequately translocated through the tissue.

Many northern courses concentrated on increasing the non-*Poa annua* population of fairways and roughs. The color and texture contrasts between contoured bentgrass fairways and bluegrass roughs is spectacular.

The high point of the season for some was the recognition that new, high-sand greens do not have to be hard, pale, thin or dry. The key is finding a *good quality sand*, combining it with an acceptable additive and then fitting the mixture with the other components necessary for good drainage.

The low point of the year was the continuing evidence that too few golf course architects give any consideration to green construction fundamentals,

thus leaving the high costs of correcting mistakes to the owners.

THE MOST encouraging observation of the year is the number of courses committed to thatch management on fairways. If lightweight mowing is to be practiced, something has to be done to keep thatch to a manageable level so that roots can become established in the soil and shots can be played from firm surfaces.

Great Lakes Region Summary — 1986:

1. a. Perennial, as in ryegrass, is a misnomer. b. Annual, as in bluegrass, is not.

2. Systemic fungicides do not function very well when the root systems of plants to which they are applied are not functioning well.

3. It is never too late to install drainage on a golf course. Some have waited 70 years to do it.

4. Pure, medium sand (0.25mm to 0.50mm) makes great topdressing; it is the key component to green construction topmixes.

5. Peats should always be as thoroughly tested as sand.

6. When the heat's on, slow green is always better than fast brown.



Western Region

by LARRY W. GILHULY, Director

ITHINK WE ALL agree that the primary issue regarding golf course maintenance is the most plentiful compound found on this earth — water. While the Southeastern portions of the country suffered through record drought conditions, the western United States has, by and large, had too much water. Someone once stated that the single

most important aspect of golf course maintenance involved good drainage. In the case of the water dumped on northern California in the early portions of 1986, the best drainage in the world would not have been enough. Record-setting amounts of rain caused massive flooding in northern California, and in some cases golf courses were covered with

water for weeks until the excess water drained off naturally. At Peach Tree Golf & Country Club, in Marysville, California, several holes and the entire maintenance facility were under water. A dike broke approximately one mile below the course and saved the course from massive flooding problems, but some areas were under water for several weeks. It became so bad that the City of Sacramento came within hours of evacuating major portions of its population.

On the flip side of excess water situations, there is the continuing concern with water shortages in the southwestern portions of the western United States. In Arizona, mandatory water allotments