

it is dead and makes no recovery in summer. This opens the door to crabgrass, knotweed, spurge, plantain, dandelion and other weeds. *Poa* regrowth occurs from seed that is in the soil, but germination takes place during periods of cool nights, from late August on through the winter.

Odds that favor *Poa annua* at 6 to 1 are hard to pass up. It's human nature to gamble and many accept the challenge yearly. Also involved are the desires of the playing members; they clamor for extending the golfing season by starting earlier in spring and finishing later in winter.

They also are looking for turf of summer quality the year around. Forcing permanent grass only weakens it and encourages the *Poa annua* to take over. The present dilemma in many cases is an expression of the desires of the membership. Yet the danger lasts only through

July and August. The injury is proportionate to the summer heat and humidity. Turf loss is not always severe.

Also, in the last few years headway has been made in techniques designed to keep *Poa annua* healthy in summer. It seems that experience tends to direct more and more programs toward attempts to keep the *Poa* alive. In effect, we are becoming a nation of *Poa* pamperers!

From the agronomic standpoint, *Poa annua* can never be considered a sound turfgrass as long as the possibility of complete summer failure exists. Either we must find a certain method of providing *Poa annua* with safe passage through July and August or we must breed a permanent cool-season grass that will grow 10 months of the year like *Poa annua* grows and looks in May. There is no question that the latter is the sound approach to better fairways on northern courses.

Out with *Poa Annua*

by SHERWOOD A. MOORE, Superintendent, Winged Foot Golf Club, Mamaroneck, N. Y.

Many times fairways are burned off thoroughly to rid them of *Poa annua*, aerated, seeded to bents and then in a few years, they're solid *Poa annua* again. Certainly this is discouraging, but perhaps it can be avoided through careful maintenance practices that follow the renovation.

Listed below are a few of the principal practices and what can be done to improve them:

Mowing

This is one of the most important operations and yet one of the most abused and neglected practices.

On watered bent fairways, cut often, cut close and change directions.

Move the tractor out of the same wheel marks by raising the outside mower or throwing it out of gear and allowing it to overlap in the rough; then occasionally mow a few feet inside the fairway edge, going out to fairway boundary on the next mowing.

Be careful in turning fairway units.

Pull tractors and gang mowers off approaches and bottleneck areas and mow instead with triplex mowers.

Fertilizing

Many problems are created unnecessarily

and one of them is caused by poor fertilizing practices—mainly overfertilization.

During some of our real tough seasons, the low budget courses came through in better condition than some of our lush layouts. They could apply only a minimum of fertilizer and in many cases no water at all.

Think twice before applying large quantities of fertilizer, especially in a single application.

On a new golf course or new turf areas and on very sandy soils fertilizer might be used more liberally than on an old established course, or where the soil is a clay loam.

The practice at Winged Foot is to apply a maximum of two pounds of nitrogen per 1,000 square feet per season. In some seasons it has been even less. The course is fertilized often and lightly using four to five applications each season. A complete fertilizer, such as a 10-6-4, is applied in late May at the rate of half a pound of nitrogen per 1,000 square feet and during June, July and August three applications of sewerage sludge is applied totaling one pound of nitrogen per 1,000 square feet to be followed in the fall with another one half pound of nitrogen from a complete fertilizer.

Watering

Watering is a maintenance practice that is

mismanaged more than any other.

We water a lot more than necessary. The summer of 1965 proved this to those in Westchester County, New York, that when water is curtailed, turf still can survive—a lot better than we may think.

We try to water fairways thoroughly twice a week in dry periods, but when the temperature rises above 90 degrees we reduce the watering time, but include an extra watering in that week.

Automatic watering systems even require more of that “man” in management because it is so easy to push buttons.

Liming

Liming is one of the cheapest and most important of operations, yet it, too, is very much neglected.

It is an annual practice at Winged Foot to apply half a ton of lime per acre to fairways.

During a busy season or when the weather does not permit, an application can be missed with no worry and done the next year.

Lime moves slowly through the soil and it should be applied lightly and steadily, thus eliminating large applications which require a lot of material and time to apply, and which might also result in a layer on the soil.

Drainage

Drainage is a continuing program at Winged Foot. We have installed thousands of feet of tile—from 4-inch to 21-inch—throughout fairways and roughs.

Drainage is a long-range program. Along with drainage lines, apply gypsum as a soil conditioner in heavy, wet clay soils.

After renovation work at Winged Foot, gypsum was applied for two consecutive years at the rate of one ton per acre. We feel that we derived some benefits from it.

Fungicides and Insecticides

Spraying for disease and insect control is a necessity for watered bentgrass fairways. A fungicide (four-fifths of a quart of 10% phenyl mercuric acetate in 40 gallons of water per acre) is applied approximately six times during the season.

This is based on a curative program—not a preventative. Whenever we see the disease, we spray. A quarter ounce of iron per 1,000 square feet is generally added to the phenyl-mercury.

Approximately once a month an insecticide is added to the mixture for web and cut worm control. It is not an elaborate program, but it is

designed to give the turf at least an optimum chance against the ravages of disease and insects. If chinch bugs or other insects become a serious threat, we do not hesitate to protect the turf against them.

Herbicides

No large-scale spraying of phenoxys has been done to the Winged Foot fairways since the renovation. Applications of 2,4-D and 2,4,5-T have been limited to spot spraying. We have sprayed isolated areas—beginnings and edges of fairways—with MCPP or Dicamba for knotweed or chickweed control.

Crabgrass has not been a serious weed and has required isolated post emergent spraying with disodium methyl arsonate (DSMA). We have also experimented with pre-emerge herbicides on a very small scale.

Crabgrass in rough areas has been sprayed using DSMA, 4 pounds of actual per acre plus a quarter pound of 2,4-D, with excellent results. This in turn has benefited the fairways by eliminating seeds.

Calcium arsenate gave drastic reduction in **Poa annua**, but these plots showed signs of stress during hot summer months. We have not applied it wholesale, but after the success reported by some others, these plots will be expanded considerably this summer.

Sodium arsenite at one pound per acre is used to a limited extent during the cool spring or summer months. It is a chemical that requires care, for its response depends on temperature and soil moisture, among many other factors.

Endothal is one chemical that has been used to great extent. Near the end of April we apply two applications of Endothal at the rate of one-half pound actual per treatment with 40 gallons of water per acre. These are applied a week to 10 days apart.

Endothal is another erratic chemical, depending on soil moisture and temperature. It retards and diminishes the seed formation of **Poa annua** and at the same time eliminates clover.

We are advocates of Endothal for I believe it has encouraged the bentgrass in our fairways.

Annual Fall Program

Aerify—once or twice over.

Aero-thatch poor or thin areas.

Seed: Seaside 25% and Colonial 75% mixture at the rate of 20 pounds per acre.

Fertilize as mentioned previously.

Mat and mow.