

Putting Green Maintenance at Wykagyl

By Robert White

The putting greens of the Wykagyl Country Club, at New Rochelle, N. Y., are with one exception over 20 years old. The turf has been produced from seed. Usually in the spring the greens seem to be about 75 per cent annual bluegrass (*Poa annua*). Near the end of May or beginning of June, in a normal season the annual bluegrass starts to disappear, and by the Fourth of July very little but bent grass is in evidence. About four-fifths of the bent grass consists of various strains of creeping bent, which are for the most part rather fine, and the balance is velvet bent. Our fifteenth green was planted about six years ago with stolons of a poor strain of creeping bent, but the quality of the bent has been gradually improved and it now looks about the same as the others. When the course was built no distinction was made between fairway and green, the area for the green simply having been cut closer and cared for better than the fairway area. The greens average in size about 6,000 square feet.

During the past eight years about half of the greens have been rebuilt. In rebuilding them sand and mushroom soil were incorporated in the heavy clay topsoil in the proportion of three parts of topsoil to one part each of sand and mushroom soil. For top-dressing the greens we use mushroom soil as a base, the material usually consisting of about equal parts of mushroom soil, screened topsoil, and sand. Ordinarily a one-yard cartload is sufficient to top-dress three greens. When the top-dressing has been spread, we brush the green in three directions with fan-shaped birch brooms. The coarse particles of the mushroom soil which have not been worked down into the turf by the sweeping are then brushed off and the green is rolled. As fertilizer we have been using sulphate of ammonia and phosphate of ammonia for several years, except when we do our spring and fall seeding. At seeding time each green is gone over with a spike-toothed roller, 5 pounds of bent seed is sown, and the green is then top-dressed, poultry manure first having been added to the top-dressing material. We also maintain a small nursery, from which we are able to obtain plugs of bent turf as needed. Although this nursery is only about 3,000 square feet in size, we have taken hundreds of plugs from it, and the turf in the nursery has always filled up after the removal of the plugs.

The greens are cut every day during the playing season, the grass catcher being used only when annual bluegrass is seeding profusely or when brown-patch is active. Ordinarily the dew is swept off the greens with a bamboo pole the first thing in the morning, before they are cut. After cutting, we roll the turf with 4-foot wooden rollers. The holes are changed on Saturdays, Sundays, Mondays, and Thursdays, a pail of water being poured over each plug after the old hole is filled. We have temporary greens in winter, but these are used only when the ground is soft; otherwise the regular greens are played on throughout the year.

Practically all of our weeding is done in July and August, during vacation time. One man oversees the work of four girls, about 10 years of age, and we are thus able to keep crab grass and other weeds under control. I might add that this work does not require all the

time of the girls, and they are given a holiday when the weather is too hot or the grass is too wet or play is too heavy.

Putting Greens on Heavy Clay Soil

By Lewis M. Evans

The Cedarbrook Country Club, in common with the other golf courses near Philadelphia on the Pennsylvania side of the Delaware River, has a heavy clay soil. When the course was built, about eight years ago, little thought was given to underground drainage of the greens or to the lightening of this heavy clay. The greens were seeded with a mixture of bluegrass, redtop, fescue, and some velvet bent, and the fairways with one of the popular fairway seed mixtures. About four years ago, with a view to changing the greens to pure bent grass, we began to plug the greens with creeping bent turf and to seed with bent seed. Today the greens average about 70 per cent bent, the balance being Kentucky bluegrass, redtop, fescue, and annual bluegrass (*Poa annua*). The seeding is done between August 20 and September 15. The plugging is done in the fall, the patches of clover being cut out and replaced with good bent sod. The plugs are sealed with compost, and when spring comes their union with the adjoining bent is complete.

In size the greens average about 5,000 square feet. They are poled and cut every day except Sunday. For cutting the greens we use a hand mower with grass catcher attached. This work begins at 7 o'clock in the morning.

In preparing the compost for this heavy clay soil we use five wheelbarrows of well-rotted manure to a ton truck of soil, the manure and soil being arranged in layers. In the fall, when we cut the compost pile down and turn it, a light sprinkling of sulphate of ammonia is given. The pile is shaped with a shoulder about one foot high around the edge for the purpose of retaining the rain that falls on it as well as the snow water. In the spring we again cut the pile down and turn it, and at this time add the sand. During the first six weeks of spring we endeavor to give the greens at least three applications of compost, as it requires this treatment to true up the surface after the battering received from the late fall and winter play, the course being open to play all year. The only other fertilization given the greens is a light application of sulphate of ammonia weekly during the cooler weather, at the rate of about four pounds to a green, which is sprayed on at night. We have also used poultry manure compost on the greens with great success, and this fall we intend to use nothing but this mixture, of which we recently prepared a 100-load pile, mixed four to one, which we have under cover drying out.

The watering and spraying of the greens with sulphate of ammonia or with fungicides for the control of brown-patch, is done by two night men working from 7 o'clock in the evening to 7 o'clock in the morning. In watering they average 15 greens, and about 12 in spraying.

In weeding the greens we find it best to take all the men for about one hour occasionally, going from green to green, and in this way we manage to keep the weeds under control. The greens have received three applications of arsenate of lead, totaling about 45 pounds to a green, and they are now nearly free of worm-casts as well as grub-casts.