

The Practical Approach to Fairway Turf Renovation

By O. J. NOER

(The third article of a series on fairway turf.)

The theoretical aspects of turf improvement, discussed in the two preceding articles, are important. With an understanding of them, one can determine the cause of poor turf and devise a plan of improvement. From the practical standpoint, each operation must be performed in the proper sequence, otherwise failure and disappointment are sure to follow.

Late summer and early fall is the best season to renovate neglected fairways and start a systematic program of improvement. This is especially true in the crabgrass belt, embracing the region from Philadelphia and Washington through Cincinnati, Louisville, St. Louis, and Kansas City. Only by utilizing favorable growing weather throughout the fall, and again in spring, is it possible to produce turf which can resist reinfestation the following season.

Farther north, where summer heat is not excessive, improvement programs can begin in spring. By fertilizing then, grass starts to thicken immediately; but where supplementary seeding is desirable, that part of the program should be delayed until fall.

In the Bermuda grass region the program should start earlier because Bermuda grass grows best during warm weather. Where weeds are not a serious problem, nitrogen should be applied generously in late spring, when broadleaf weeds are bad — 2,4-D should be used immediately before or after fertilization. If crabgrass infestation is heavy on some courses the program should not start until June or July. Sodium arsenite or arsenic acid are the cheapest materials to control it. Treatments should start at the time seedheads begin to emerge. Fairways should receive nitrogen in quantity then and again in August.

Field Survey is Essential

A careful field survey, augmented by chemical soil tests, should be made before the program is devised. The survey should include an examination of surface and subsoil drainage. Soil conditions with regard to uniformity of color and physical condition or texture, erosion, compaction, etc. should be noted. The grasses constituting the turf population should be identified. Turf density and the amount of weeds and

clover should be estimated. Chemical tests should include soil reaction, and quantities of available nutrient elements, especially phosphoric acid, potash, calcium, and magnesium. A knowledge of past maintenance practices, particularly with respect to the frequency of mowing, height of cut, lime and fertilizer usage, water practice, etc., is most useful. After gathering this information, a program can be devised with full assurance that it will succeed.

Drainage

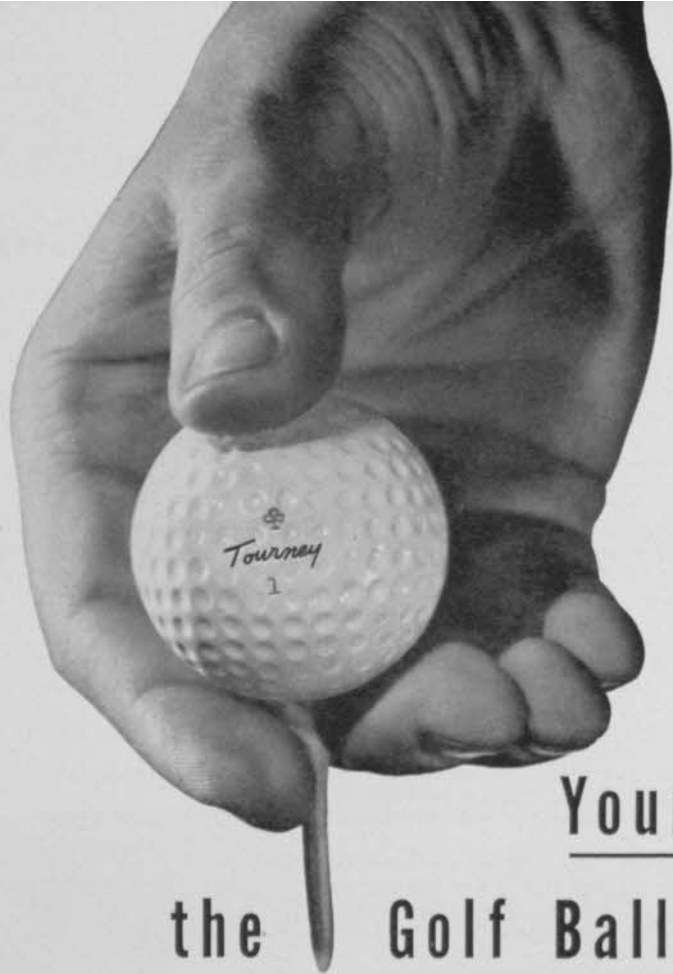
Needed drainage should be decided upon first. All tile lines should be installed, or at least the main ones, and provision should be made to add laterals and complete the system as soon as possible.



Bluegrass and fescue winter kill in low spots due to ice and standing water. Creeping bent is the grass to use, otherwise add soil to level the area.

Side hill seepage on hilly courses is responsible for more poor turf and heavy infestation of crabgrass and clover than most people suspect. Tile lines on hillsides must cross the direction of slope. They must be sufficiently deep to intercept seepage flow and trenches must be backfilled to within 8 or 10 inches of the surface with coarse material, either gravel or cinders. Without the porous trap to collect water and lead it to the tile, pressure from above drives the water across the tile. It breaks out along the base of the hill and keeps the surface wet despite the tile lines.

Occasionally the water table is near the surface and cannot be lowered sufficiently



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to permit the installation of tile. On such areas surface run-off is depended upon for drainage. It is foolish to expect Kentucky bluegrass or fescue to survive and form turf. Bent is the best grass for these locations. Seaside or native creeping bent is best for damp areas, otherwise Colonial bent will do.

In northern regions where Kentucky bluegrass and fescue winterkill in pockets and depressions, surface drainage must be corrected by plowing and resurfacing, or by additions of soil to level the surface, otherwise bent grass must be used. The bent can be seeded, or the spots planted vegetatively with stolons of native strains which grow wild along adjoining streams, and other wet spots. The customary procedure is to loosen the surface soil by cross discing, scatter the stolons, and disc them into the soil. Then the area is firmed by light rolling. Top-dressing is helpful, but not absolutely necessary. Fertilization before scattering stolons speeds turf formation. The rate for organics should be 1,000 to 1,500 pounds per acre, mixed fertilizer should have a high nitrogen content. The rate of application should be about 400 pounds per acre, and should be followed a month later with about the same amount.

Seeding

Where existing turf is uniform but thin, and consists of suitable grasses, reseeded is not necessary. Fertilization alone will produce good turf, even though the existing stand of grass is exceedingly thin.



The three-gang Aerifier is a useful tool on fairways. Besides using it to improve soil conditions and to remove surface matted turf it is fine for preparing a seed bed before introducing bent into fairways by seeding.

Reseeding is justified when a different grass is needed to produce better turf, or to speed turf development after killing weeds, clover, or poa annua, or badly infested areas where there is little or no grass left. The necessity for reseeding before starting to water fairways of pure fescue or Kentucky bluegrass has been mentioned. Colonial bent grass should be introduced into these fairways.

Until recently it was customary practice to use a mixture of Kentucky bluegrass, red top, and Astoria bent for re-seeding fairways in the North. Now that bluegrass and red top are high priced, the trend is toward bent grass only. Astoria bent has performed well and is still the favorite, although Highland bent is being used by some. Many lots of low priced Colonial bent contain rather high amounts of Seaside or other creeping bents, and are



Some greenkeepers prefer to use an alfalfa and grass disc seeder. The fairway is aerified first, then disc seeded and Milarsenited for the last time.

cheaper for that reason. Since Colonial makes a more upright growth, and is less apt to mat, it would seem best to purchase it and not use combinations with Seaside, except in spots which stay continuously moist. Rates of seeding vary from 20 to 50 pounds or more per acre. From 20 to 30 pounds is the customary quantity, although several courses have secured exceptional stands of bent on poa annua infested fairways with 80 to 100 lbs. of seed per acre. This may seem wasteful but results have been good.

Some use an alfalfa and grass disc seeder. Others prepare a seed bed by cross-spiking several times with a three-gang fairway spiker. The Aerifier has been used successfully alone or followed by spiking. A wheelbarrow seeder, or the cyclone type, is used to sow the seed. Light rolling follows to press the seed into the soil. The Aerifier or gang spiker, alone or in combination, gives the quickest coverage because seed is distributed uniformly over the area. It is said to take more seed.

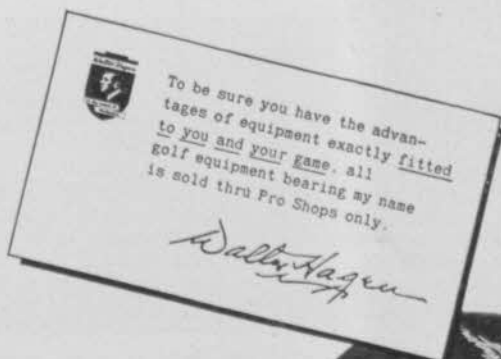
The alfalfa grass disc seeder is faster and often less annoying to players. It is an excellent way to introduce a different grass into the turf, and also when there is considerable grass worth saving. Fescue grows best when seeded a trifle deeper than other grasses, so disc seeding is the best way to cut the seed into the soil. Deeper seeding may be necessary with alta fescue also. The discs are spaced 4 inches apart, so cross-seeding is advisable. The machine

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will sow as little as 20 to 25 pounds of grass seed per acre. The seed is fed through a flexible tube into a shoe attached to the disc and finally dropped into a narrow slit cut by the straight disc. Seed is placed below the surface, where downpouring rain will not wash it away. Heavy soils must be moist, otherwise discs will scratch and not cut into the surface. This is not a disadvantage because seed needs moisture for germination and growth.

With either method, fertilizer should be applied before seeding, that is before spik-



Preparing a seed bed with fairway spike disc before applying Milarsenite for the last time. After discing two times or more seed is planted, fairway rolled and last treatment of Milarsenite is made.

ing, or before disc seeding. With ample phosphate and nitrogen, a good stand of grass can be obtained with lower seeding rates. That fact was clearly established on test plots conducted in Washington, D.C., some years ago by A. E. Rabbitt. At least 100 pounds per acre of actual phosphoric acid should be applied, and an equal amount of nitrogen, especially on light colored soils. These amounts are equivalent to 500 pounds per acre of 20 per cent grade superphosphate and 1,500 to 2,000 pounds of organic nitrogenous fertilizer, such as cottonseed meal or Milorsenite, or half a ton of 5-10-5, or 4-12-4 to furnish the phosphoric acid. Additional nitrogen should be used after growth starts when mixed fertilizers are used which contain two to three times more phosphoric acid than nitrogen.

Weeds and Weed Control

Where weeds are scattered and few in number, they will disappear automatically as turf density is increased by systematic fertilization. But when weeds, clover, and poa annua exceed perennial grasses, the use of weed killers, or herbicides, in addition to fertilizer is justified.

On courses where dandelion, plantain, and buckhorn are the weeds, the use of 2,4-D to eliminate them, accompanied by fertilization is the logical procedure. Ap-

plications can be made in spring or early fall. Good results can be obtained either time, provided weeds are in active growth, and the soil is moderately moist. Some prefer fall, because new seedlings produced from seed that year, and the old plants are killed. Spring treatment may bring crabgrass or clover in regions where either one is bad. This occurs only when grass is sparse and large voids or bare areas are left after weeds are killed; or when fertilizer is not used to make the grass spread and develop a dense turf.

There are three types of 2,4-D, the salt, the amine, and the ester formulations. All are good. The ester type is good for hard-to-kill weeds like bindweed, poison ivy, etc., but it is more likely to discolor or injure the grass than the other two, and drift damage to nearby ornamentals is more apt to occur. The salt and amine formulations are safer to use. Although the ester type works faster, and is said to be more effective on clover, there is very little difference in the ultimate result on broadleaf weeds. The trend on turf seems to be toward the amine and salt types because of the safety factor. From $\frac{3}{4}$ to $1\frac{1}{2}$ pounds actual 2,4-D per acre are used customarily, with variable amounts of water, from 5 to 200 gallons, or more, per acre. The 2,4-D salts can be used dry, mixed with fertilizer, but the rate must be increased, using 2 to 3 pounds actual 2,4-D per acre.

The results with 2,4-D on annual chickweed and clover have been disappointing. They are serious pests on watered fairways. One application of 2,4-D checks but does not kill either one completely. Repeat treatments of 2,4-D often damage bent



Chas. Wilfong at Green Valley CC, Phila., shows lines of seeded bent in June 1949. Fairway was seeded in early October 1948.

grass permanently, so it is not the answer to clover and chickweed control on fairways with a high creeping bent grass population. Sodium arsenite is a better material to use, but two to four applications are needed. From one to two ounces per 1,000 square feet (roughly 2.5 to 5

(Continued on page 72)

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GOLF CLUBS



Dues Income's Relation to Today's Club Operations

By EUGENE F. SWEENEY

Manager, Empire State Club, NYC, and Club Accounting Consultant

(Before Connecticut Club Managers Association)

The day is present when the members will be even more demanding than they have been in the past few years. The belt may well be tightening around their own business and their personal difficulties are usually reflected in a different attitude toward the club and the costs entailed in membership. They will, like the general public, want more for their money.

This attitude is a natural one, and is not in any way to be frowned upon, either by management or an executive committee.

There is, however, one factor which must be kept in mind if any criticism of the individual club operation is to be fair and constructive; that is—the sufficiency of dues income to meet the requirements imposed by the operating costs in the individual club.

Some two years ago I spoke in New Haven at the Quinnipiack Club urging managers and committee men to call the attention of their officials and associates to the need for thorough study of the dues structure in their respective clubs. The costs of doing business in any club has risen in the same manner as the expenses of other business operations and it was high time to make sure they had a sane and sensible dues program—one certain to meet these increased costs.

While many people do not consider a club as a business, it assuredly becomes one when the manager and treasurer report the results of operations to the Board of Governors, and the membership. Clubs, while they be the "other home," have, at the same time, the business aspect. They are not free from any of the economic laws, or economic or social changes.

The thoughts I expressed at the seminar conducted at the Quinnipiack Club were put into an article which appeared in many of the trade papers. I mention this because it was a great source of gratification to subsequently receive scores of letters of thanks from managers, club committee men and others who have to cope with the problem. The general reaction to the article can be brought home to you quickly by reading to you a letter received from the manager of one of the most respected firms

of certified public accountants in the country:

"Your summary of the problem, and the way in which it should be met strikes me as an excellent job. I am in complete agreement with your point of view and I wish all of the directors and officers of clubs among our clients could read your article. In fact, I mean to see that a good many of them do read it. It seems to be the most difficult job in the world to get the Board of Directors of the average club to face the financial affairs of the club in a businesslike manner. However, I have noted a considerable amount of progress in this direction in the last six to eight years. Several of my club clients are in excellent financial condition today because of the adoption of a realistic financial program such as you suggest.

"In contrast right now, I am assisting a club finance committee to work out of a distressed financial condition which is now critical. There was no need for this condition to arise. For three years I have been urging an increase in dues without success. Had the dues been moderately increased two or three years ago there would be no financial crisis now."

But, just as it is true, as Kipling says, "Prophets have honor all over the earth except in the village where they were born"—so it seems that in many an instance, the club manager is not the real captain of his own ship, and, as we all know, many a boat has been wrecked by several captains at the wheel. In all too many cases, the club manager is told how he must steer the course by a navigator, or, what is worse, by a group of navigators who very often are not familiar with the day-to-day problems and even the hour-to-hour difficulties that have arisen within the club.

Determining Control Factors

The characteristics of the individual club must be determined before good control can be exercised. Now, who best can do this but the manager and his committee, and I mention committee in the same breath as the manager because very often they are belabored and annoyed by those



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Aerial view of Oak Hill CC, Pittsford, N.Y., (near Rochester) where the rugged East Course is being toughened up for the Amateur field which tees off August 29 for the 49th USGA Amateur Championship. Generally higher rough, narrower fairways and new trapping is in store for the simon pures who'll be after the crown now worn by Willie Turnesa.

cliques and groups in a club whose comprehension and knowledge always surpasses those who really should know. They usually have all the panaceas.

Now the gravy train appears to have been derailed and the hue and cry from members in general will be for a reduction in the pricing policies of the club in charges for food, beverages and other services.

This is in accord with the times and it is fair provided the management has been supplied with adequate dues income to cover the fixed expenses such as rent or other real estate costs; light, heat and power, house and administrative salaries, repairs and renewals, legal and accounting fees, and an appropriate standby allowance for operating departments. As I have pointed out, a club must adhere to good business policy. If the only sound policy of any business is based on the determination of a proper balance of all the factors which enter into the cost of conducting the business and the adjustment of these factors to the varying conditions

which may arise from time to time, so too is this policy applicable to a club.

Now, if the dues income factor has been adequately taken care of, we are in a position to approach scientifically any reduction in product and service charges which the times seem to require. Mind you, I say "seem" because in reality, the reduction in the variable of production cost has not been as large to date as is publicized. When a public official, newspaper or other source of information states that the cost of living is down ten or 15 per cent, the impact on the public mind usually leads to the conclusion that it is mostly in food.

Let us examine some of the food price reductions, and strange to say, the increases in the last three months.

Take the popular items in beef, veal, lamb, pork and poultry on the average club menu and you will find these categories, taken in toto, have not been reduced to any large extent.

Beef, in accordance with New York wholesale quotations, shows an average

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