

QUESTIONS AND ANSWERS

All questions sent to the Green Committee will be answered in a letter to the writer as promptly as possible. The more interesting of these questions, with concise answers, will appear in this column each month. If your experience leads you to disagree with any answer given in this column, it is your privilege and duty to write to the Green Committee.

While most of the answers are of general application, please bear in mind that each recommendation is intended specifically for the locality designated at the end of the question.

1. Grasses for southern California fairways; treatment of adobe soils; drill seeding vs. broadcast seeding.—Our fairways are planted to Bermuda. They are a little over a year old, and at present we have almost a solid mat. The disadvantage to Bermuda, however, is that during the winter months it is dormant and turns brown. It is our desire to have a green fairway the year around. We have been advised to cut the Bermuda very closely and then sow to bluegrass, meadow fescue and white clover in September or October, using a drill seeder. The soil is a sandy loam, a few spots being adobe. We would appreciate your advice in the matter. (California.)

For seeding new fairways in southern California we would recommend a mixture consisting of 16 pounds bluegrass, 4 pounds red top, and 1 pound white clover, sowing the seed on properly prepared ground at the rate of 100 pounds to the acre. We would not advise the use of meadow fescue in any mixture on your fairways; this is rather coarse and bunchy, and so far as we know is not well adapted to southern California conditions. Redtop is comparatively short-lived, but it has the advantage that the seed is good, cheap, germinates promptly, and grows rapidly. The bluegrass, redtop, and white clover will remain green all winter and live through the summer.

You could, however, retain your Bermuda turf, and in order to have green fairways all winter you could sow redtop and Italian rye-grass on top of the Bermuda grass at about the time of the commencement of your fall rains. Both of these are rapidly-growing grasses, the Italian rye-grass being even more rapid in growth than the redtop, but the redtop is much more desirable. Furthermore, the small seeds of redtop rattle down through the turf to the ground so that better germination usually results. The redtop should be seeded at the rate of about 30 pounds per acre. Neither the redtop nor any other grass will, however, survive the long summer, we believe, in your patches of Bermuda grass. Bermuda turf is very vigorous in the summer and few grasses will survive in patches of Bermuda through the summer; white clover would have more of a chance of doing it than any other plant.

With regard to the adobe spots in your soil, we would suggest that you top-dress these with a half-inch or so of sand or sandy loam soil, which will alleviate the adobe very much. You suggest using a seeder of the type that cuts the turf and sows the seed in drills. Our observations and experience lead us to believe that the seed should be sown broadcast. A very satisfactory broadcasting can be secured by the use of a wheelbarrow seeder, or even by hand, if the operator has had experience in sowing seed broadcast. The sowing of seed in drills, as a rule, leaves an uneven covering of grass. This is especially true with grass in the seedling stage, and

since you would use the grass only for the winter and therefore only in the seedling state we are afraid you would not find drill seeding very satisfactory.

2. Winter covering of putting greens; playing on greens after first frost.—Will you kindly give us your advice relative to winter covering of greens? Should greens composed of bluegrass, redtop, and clover have a winter covering? If so, when and with what material should they be covered? A large portion of this grass is in the seedling stage. Our course has a large amount of morning golf. Should the greens be closed with the first few frosts, or not until the frost is in the ground permanently? (Missouri.)

It has been our experience that almost all of the so-called winterkilling has been due to poor drainage. Ordinarily we have no winterkilling of our common turf grasses unless there is a low spot in which the water does not drain off from the surface or, as frequently happens, the green is near a hill and gets the seepage from underneath the hill, which causes the same water-logged condition. Covering the greens does not help this trouble at all. There have been some trials made in this respect around Minneapolis and St. Paul, but the consensus of opinion seems to be that very little, if any, benefit was obtained from covering. Grass should not be played on during the first heavy frost. Frozen grass, especially early in the season, is very easily injured. After two or three heavy frosts there does not seem to be any danger, but with the first frost it is well to keep the players off the course until the grass blades have thawed.

3. *Poa annua* as a turf grass for southern greens.—We are considering planting our greens to *Poa annua* and would appreciate your advice in the matter. With our experience with it last year and this year where it grew in patches on our greens, we believe that winter greens of this grass will be the solution of our troubles. Our greens have not been seeded to *Poa annua*, but the grass has appeared in greens which we seeded to redtop and meadow fescue on top of the Bermuda grass, but from which the redtop and meadow fescue disappeared after they had once obtained a start. (Georgia.)

Poa annua makes up most of the putting green turf on northern golf courses from late fall until early spring, when it disappears and gives way to the perennial grasses, such as the bents and fescues. It makes a good putting surface but is a little slow, and for this reason some clubs attempt to keep it out of their greens. One club does this successfully but at a very great expense. It gets into putting greens as a result of the transfer of seed from various parts of the course where it is found growing. The seed does not occur in redtop or fescue seed, but there is usually an abundance of plants that mature seed on the courses in the eastern part of the United States, so that the spread of the seed is a matter of every-day occurrence. Seed of it is on the market but it is not very available and is somewhat expensive. If you can get a combination of *Poa annua* and Bermuda grass it is possible that your putting green turf problems would be solved.

4. Winter care of creeping bent greens newly planted from stolons.—We have just finished rebuilding one of our greens, having built up the back part some 6 feet. We planted creeping bent stolons, and some of them are already up. Undoubtedly before we have a heavy freeze the stolons will have made a growth of an inch or so. We have never used any covering on our greens, but because of the unsettled condition of the new soil on this one and because of the fact that the grass will not get an opportunity to become very well rooted before winter, we are in doubt as to what the proper procedure would be in this case. Should we cover this new grass for the winter? (Illinois.)

It has been our experience that creeping bent is perfectly hardy in any stage of growth. In fact, we have planted such greens here at Washington after heavy freezing weather, and while we did not get any growth in fall and winter the grass lived through and made good turf the following spring. We do not think you need fear any damage from winterkilling on the green concerning which you write.

5. Grasses for winter greens in Florida.—What is your advice regarding the seeding of putting greens in Florida with redbot, bluegrass, rye-grass, or a mixture? (Florida.)

In regard to grasses for winter greens in Florida, Italian rye-grass has been used; also redbot; also a mixture of Italian rye-grass and redbot. Brown-patch is frequently very severe on winter greens in Florida. Bluegrass is immune to brown-patch. White clover is also immune, and this may be mixed with the bluegrass if desired. In fact, bluegrass and white clover together are very satisfactory.

6. Possible benefit from covering greens over winter.—Kindly advise us whether there are any benefits to be derived from covering greens with dead leaves, maple and oak, during the winter period? If so, please mention them, and advise how deep the material should be laid on. (Connecticut.)

In the light of the evidence we have, covering of any kind for putting greens during the winter is not to be advised. This has been tried out by several clubs in Minneapolis, one year with apparently good results, and the next year with bad results; that is, the unprotected greens came through the second year better than the protected greens. If any grass goes out on your greens during winter it will be only on spots which are improperly drained.

7. Putting green grasses for California.—What grass do you particularly recommend for putting greens in California? (California.)

Red fescue alone, red fescue and redbot mixed, and Kentucky bluegrass and white clover mixed have heretofore been used for putting greens in California. It has however recently been found that the bents planted there vegetatively or by seed make beautiful greens in the entire fog-belt of California and also near Los Angeles outside of the fog-belt. We believe that bent greens can be grown with perfect satisfaction anywhere in California so far as climatic considerations are involved.

8. Winter care of bent nurseries.—We planted a nursery of creeping bent in midsummer and should like to know what care, if any, we should give it over winter. Should it be covered or protected in any way with straw? Is there any danger of runners dying back during the winter? We should think they would be liable to do so except where they had rooted at some of the nodes. (Massachusetts.)

Your nursery rows of bent will need no protection during the winter. Let them alone. Plenty of the bents are perfectly hardy enough to go through the winter in Massachusetts, and that is what you want. If it should happen that the strain you have is tender you would want to replace it with a more hardy strain anyway. We would not recommend protection of any kind, either by leaves, straw, or other material.

9. October seeding in the North.—We have just recently acquired the necessary land to add nine holes to our present nine-hole course. The ground is very weedy, and we are cutting and plowing it. By the time we can possibly have the soil ready for seeding it will be the first week in October, and we plan, if practicable, to seed it at that time so that we will have an older turf by the

spring of 1925. Do you recommend seeding as late as the first week in October? (Indiana.)

The first week in October is a little late to seed grasses, the best time being, in your locality, from August 20 to September 15. However, if the fall remains favorable you ought to get a good stand from the October seeding. We would certainly recommend that you seed the fairways to the redtop-bluegrass mixture, and do not delay the seeding of the bluegrass until spring. We believe that your chances are about even that you will get a good stand by seeding the first week in October.

10. Clover as a turf grass.—Why do you advise seeding clover only in mixture; why not exclusively clover? We have been advised that there is nothing but clover at the — club, which is said to be very satisfactory. (Illinois.)

The reason we do not advise it is that we have never been able to get a pure white clover turf. Our attempts have resulted in a patchy turf very undesirable from a putting standpoint. With a little grass mixed with it, however, white clover makes a fairly good putting surface, although it is regarded as a liability rather than an asset on most golf courses. On courses in the northeastern part of the United States where little can be spent for upkeep it has been found that Kentucky bluegrass and white clover give about as good results for greens as can be obtained from other grasses. For reasonably well supported clubs white clover on the putting greens is a nuisance.

11. Injury to turf from the sod webworm.—I am sending you some specimens of a worm which has done extensive damage to our approaches, which are of bluegrass and redtop. On our greens, which are of bent, the worm has fortunately injured the turf only in small spots. I should be glad to know what remedy may be applied to correct the injury. (Ohio.)

The insect you send is the sod webworm. We regret to state that no remedy has been found for ridding turf of this insect other than early fall plowing, which of course is out of the question in the care of golf turf. None of the attempts to poison the worms or to poison or trap the moths have proved successful. The only suggestion we can make is that the damaged areas be fertilized and top-dressed with a view to hastening their recovery. If no recovery is noted by the middle of September we would suggest that the injured areas be deeply plowed and spaded and then reseeded.

12. Rate of seeding sheep's fescue in the rough.—What rate would you recommend in seeding the rough with sheep's fescue? (Ohio.)

There is not a very large body of experience on this point but our observations lead us to believe that under reasonably good conditions of soil preparation and with seed that will germinate at least 80 per cent, 75 to 100 pounds per acre is sufficient. We are of the opinion that it should be sown with at least 20 or 25 pounds of redtop, inasmuch as the sheep's fescue starts very slowly and in fact does not make sufficient growth to keep down coarse-growing weeds in the early stages of its existence.