

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. Ribbed or checkerboard effect when turf is cut.—We notice that after cutting our putting greens this year the grass is ribbed, presenting a square checkerboard effect, when cutting both ways. Can you suggest a remedy? (Massachusetts.)

ANSWER.—The effect you describe will be produced if the cutting blades of a mower are not evenly adjusted or if the roller on the mower is not set level. In both cases the grass at one end of the knife is not cut as close as the grass at the other end, producing unevenness, or ridges or ribs of uncut grass running parallel with the direction in which the mower is pushed. By cutting both ways with such a mower the checkerboard effect is produced. In cutting thick turf too much attention can not be given to the adjustment of the blades of the mower. The blades must also be sharp, else an uneven, or corrugated, turf will result.

2. Winter treatment of Bermuda greens; *Poa annua* and *Poa bulbosa* for early spring and late fall turf on Bermuda greens.—Putting during the early spring and late fall on our Bermuda greens has been rendered difficult on account of the abundance of *Poa annua* in the turf, notwithstanding everything possible has been done to check the growth of this grass, even to cutting it out, but only to see it return the following fall thicker than ever. We accordingly came to the conclusion that by the use of manure on the greens we would not only increase the growth of the Bermuda grass, but also the growth of the *Poa annua*, and to such an extent that this latter grass would spread all over the greens and thus provide a good putting surface during the early spring and late fall. With this in view we covered the greens with stable manure the last week in December and first week in January, and early in March we raked off what was left. The greens where the manure was thickest were well covered with *Poa annua* and furnished good putting at that time of the year. On the greens which did not receive a very thick covering the putting was also good but the grass was later in coming through. We are also of the opinion that by planting 15 to 20 pounds of redtop seed on the Bermuda greens before the manure is put on early in December we can have true putting greens by the last week of February and at the same time greatly help the growth of the Bermuda the following season. (Virginia.)

ANSWER.—The only objection we can see to covering your Bermuda greens over winter with manure is the probability that the manure will invite grubs. Where much manure is used grubs and earthworms become troublesome. As an alternative to the use of

manure you might try fertilizing your greens in late fall and early spring with ammonium sulfate applied at the rate of approximately 3 pounds to 1,000 square feet. Excellent results have been secured with this method. However, it is clear that Bermuda, like creeping bent, must have abundant water and abundant fertilizer for good results. The practice of starving Bermuda turf, which has been followed by many clubs in the past, certainly makes very inferior greens. As regards *Poa annua*, it has seemed impossible to get a solid stand of it, as it almost invariably appears in spots, thus making a most unsatisfactory turf. If however by your topdressing methods you can secure a full stand of it, that would certainly make it very desirable in winter. There is another grass, *Poa bulbosa*, which, unlike *Poa annua*, is a perennial and which, when once established in Bermuda turf, comes up every winter and disappears by the middle of May or the first of June. It would be slow in becoming established in a Bermuda green, but when once established it ought to make wonderful winter greens. Many of the southern courses have given up planting redbot, Italian rye grass, or other grasses on the Bermuda for the winter play, as the winter grass always gives the Bermuda a considerable setback. They keep up their Bermuda greens in essentially the same way creeping bent greens are kept up in the North, namely by topdressing and fertilizing with ammonium sulfate, and in the winter they play on the dormant or even browned Bermuda turf.

3. Improving thin stands on fairways.—Our fairways are badly cupped on certain holes owing to rain, wind, and hailstones. The grass growth is very sparse. We are topdressing with old rotted cow manure, using a light drag, and so filling the cups, and then rolling with a light horse roller. We are not harrowing, for fear of uprooting the present grasses. In the spring it would be possible to use a sharp knife harrow that would cut and not tear the soil. Do you think we will gain any great benefit from the manure in the way of having the present grasses spread? Also would you advise seeding with Kentucky bluegrass, redbot, and clover in the spring, then dragging with a chain harrow to cover the seed, and lightly rolling? Where our fairways have been slightly cultivated and seeded we have obtained a fair catch of grass, with only two rains to cause germination and growth. We have no watering system for use on our fairways, but expect to install one. (Alberta.)

ANSWER.—We doubt whether you can do more to improve your fairways than to fertilize them with well-rotted manure, or with bone-meal, in the way you have been doing. We do not believe you will obtain any improvement from the use of a harrow on your fairways. We have tried harrows under similar conditions and they have not been at all helpful in thickening up turf. Fertilizers of this character however do help materially, especially if applied in the winter and early spring, so that their effective principles may be available for the turf during the growing season. We are confident it would be a waste of money for you to attempt to thicken up the turf of your fairways by sowing bluegrass and other species of grasses before you have installed an adequate watering system for your fairways. If however you can provide adequate water for your fairways, it would be well to seed the thin spots in the early fall or

late summer with a mixture of bluegrass, redtop, and white clover. Be sure to roll your fairways once in the spring after the frost is out of the ground.

4. Grasses for winter greens in the South; rate of seeding redtop, Italian rye grass, and Kentucky bluegrass.—What seed would be best for our winter greens? Would October 15 be about the right time to sow the winter greens? (Louisiana.)

ANSWER.—We would suggest that you use redtop alone, or Italian rye grass alone, or redtop and Kentucky bluegrass mixed. We do not know whether you have any brown-patch in winter, but we have seen it pretty bad at New Orleans. Redtop and Italian rye are both susceptible to brown-patch, whereas Kentucky bluegrass is perfectly resistant. White clover is likewise absolutely resistant to brown-patch, and if you care you could use that. The only objection to Kentucky bluegrass is that it is slower to become established than either Italian rye grass or redtop. We should say you are perfectly safe in seeding for a winter green any time beginning the first of October. It would be very interesting if you would try one green in redtop, one in Italian rye grass, and one in Kentucky bluegrass, so that you could get an actual comparison of them. You would need to seed your redtop at the rate of about 5 pounds per 1,000 square feet, Italian rye at 10 pounds per 1,000 square feet, and Kentucky bluegrass at 8 pounds per 1,000 square feet.

5. Bone meal as a fertilizer for putting greens.—We are to begin (October) final topdressing on our greens for the season. They are in need of a good stimulant. We can buy pure bone meal from a local plant here at what we consider a very reasonable price in comparison with fertilizers sold by regular seed houses. Will bone meal itself bring good results? The grass on our greens is mostly fescue and in fairly good shape. Our soil is hard clay. How much of the bone meal would you recommend to use in topdressing for average size greens? (Pennsylvania.)

ANSWER.—Bone meal is a very good grass fertilizer, but for bent or fescue greens we prefer ammonium sulfate mixed with good compost such as we have described at various times in the BULLETIN. Bone meal, while quite highly nitrogenous, carries with it other elements that have a tendency to encourage clover and other weeds on putting greens. For the fall we have found a mixture of compost and ammonium sulfate—15 to 25 pounds of the former to 1 cubic yard of the latter—sufficient for treating 5,000 square feet of green. If bone meal is used, 10 pounds to 1,000 square feet is not excessive.

6. Fall mowing of fairways.—We have an excellent sod on our fairways consisting of clover and bluegrass, with a very heavy stand of mixed fall grasses, which latter predominate at this season. The fairways are getting ragged, but we are afraid to clip them so late (October). Is it customary to clip the fairways of golf courses at this time of the year and later in the fall? (Virginia.)

ANSWER.—As for mowing fairways at this time of the year (October), we would advise you to do so. Fairways should be kept at the proper height throughout the season. That means that they should be mowed as late in the year as necessary to keep them at

good fairway height. There is no danger from winterkilling of turf that is well drained, and height of cutting apparently does not enter in to any appreciable extent.

7. Injury to turf from lack of sufficient topdressing.—We are sending you two samples of turf taken from brown patches that appeared during October. The patches are irregular in shape and up to 12 inches in diameter. Can you ascertain if there are brown-patch spores present? The weather has been cool here, and as we understand it brown-patch does not occur except in hot, muggy weather. (Michigan.)

ANSWER.—Your samples have been examined and they bear no evidence of being affected with the brown-patch disease. The turf does however appear to be suffering from lack of watering and topdressing. If you will examine it yourself you will find quite a mass of runners above the surface of the soil. Unless these runners are topdressed regularly the plants will have difficulty in securing sufficient moisture and nourishment. We would suggest that you topdress your turf with a compost consisting of four parts clay loam, one part sand, and one part well rotted manure or similar organic matter, applying this topdressing at the rate of 1 cubic yard to 5,000 square feet of surface. One application late in the fall should be made, and frequent applications throughout the growing season.

8. Redtop, Italian rye grass, and *Poa bulbosa* for winter turf on Bermuda greens.—Is there any perennial grass that can be used on Bermuda greens to keep them playable in the winter? Our objection to the use of redtop and Italian rye grass is that they must be sowed each fall. (Tennessee.)

ANSWER.—*Poa bulbosa* is a perennial grass which may be used in the South in conjunction with Bermuda grass for putting greens. When the Bermuda grass turns brown in the fall the *Poa bulbosa* will revive and take its place as a green turf during the winter. There is however no seed of *Poa bulbosa* available, but it can be easily established if you can obtain a supply of its bulbous roots. If you decide to use redtop and Italian rye grass, the seed should be sown in September on the Bermuda turf, keeping the Bermuda grass closely mowed, and then topdressing. Redtop is generally preferred for this purpose to Italian rye grass.

9. How close to cut turf.—In discussing the cutting of turf the terms "close" and "relatively close" are often used in THE BULLETIN. Defined in measurements I would assume that "close" would mean about 3/16-inch, "relatively close" about 3/8-inch, and "high," possibly 1/2-inch. Is that about right? In my first cutting of our new bent greens I set our mowers at about 1/2-inch. Later, as the turf started to knit, I lowered them to about 3/8-inch. Should I cut shorter or longer than these measurements? (Ohio.)

ANSWER.—The best collection of opinions on the close cutting of putting greens you will find in the article on page 291 of the November, 1923, BULLETIN; and you will notice that the opinions there expressed differ. Our own belief is that knitted turf should be kept cut close at all times. We can not agree that the allowing of the turf to grow tall has any advantage; indeed, our evidence indicates that it is disadvantageous. It is difficult to define the terms "close" and

“relatively close” in inch measurements. We would guess that your measurements, 3/16-inch, 3/8-inch, and 1/2-inch, would approximately mean what is meant by “close,” “relatively close,” and “tall.” We do not think you can cut well-knitted turf too short—provided, of course, you do not cut it so short as to skin the turf.

10. Ridding putting greens of moss.—On a green we recently built there are bare spots which are being invaded by moss. We believe that this is an indication of extreme sourness and are writing to inquire how the condition may be corrected. (New York.)

ANSWER.—The invasion of your greens by moss is not necessarily due to acidity of the soil. In fact, we have found in our experimental plots that moss is more abundant on soils that have been heavily limed than on soils which are acid in reaction. We have never had any difficulty in eliminating moss from our greens by the proper use of ammonium sulfate, and we, therefore, suggest that you treat the mossy spots with a topdressing of compost and ammonium sulfate mixed in the proportion of 2 pounds of ammonium sulfate to 1/5 cubic yard of compost, and apply this quantity of the topdressing to 1,000 square feet of surface. The mixture of compost and ammonium sulfate is more effective than either used alone; moreover, when applied mixed in compost the ammonium sulfate is less likely to burn the grass. The compost and ammonium sulfate should be mixed thoroughly, applied evenly, and then well watered. The systematic use of ammonium sulfate in the spring and summer should entirely prevent the invasion of moss.

11. Policy in reference to special dues for tennis privileges.—We should be glad to receive such information as you have regarding the policy of golf clubs in the matter of special dues for persons playing tennis only. (Connecticut.)

ANSWER.—We have information from four golf clubs on this matter. One club has but one membership fee, which covers all the facilities, including both golf and tennis. Another club is operating under the same plan, but states that in the near future it expects to charge extra for persons who play golf. Another club has three classes of membership; \$50 family membership, for all privileges; \$25 family membership, for all privileges except golf; \$15 individual membership, for all privileges except golf. Another club has an extra charge, either by the hour or by the season, for tennis privileges.

12. Fescue as a turf beneath pine trees.—We are having great difficulty in establishing turf within a space extending between 10 and 15 feet around several large pine trees. The shade beneath these trees is not at all intense, and we are of the opinion that the pine needles, or perhaps the rosin from the trees, affect the soil in a way detrimental to the grass. Have you any suggestions to offer? (Alberta.)

ANSWER.—The difficulty of growing grass under pine trees is a well-known fact, but its cause is entirely obscure. Red fescue and sheep's fescue seem to succeed better than any other grass under such trees, and our only suggestion can be that you try these grasses if you have not already done so.