Back Numbers of The Bulletin

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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 answers 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. Obtaining the Atlanta strain of Bermuda grass from seed.—I have written to two men for runners of the Atlanta strain of Bermuda grass sufficient to plant two putting greens but they advise me they have not sufficient to spare for the purpose. Do you know of any firms growing the Atlanta strain for golf course use? (Virginia.)

ANSWER.—If you are unable to obtain the stolons of Atlanta Bermuda grass which you desire, the next best thing would be for you to purchase Arizona-grown Bermuda grass seed. From the Arizona seed you will obtain a fair proportion of plants of the Atlanta strain of Bermuda grass. From the turf you grow from the Arizona seed you will find perhaps one-half of it will be of the Atlanta strain. It will then be possible for you to select plugs of the Atlanta strain from your turf, for use in starting a nursery, and you will be able eventually to replace the ordinary Bermuda in your greens with stolons from this nursery. Another method would be simply to select plugs of the Atlanta strain from your greens and insert these into the ordinary Bermuda turf.

2. Ice sheets forming on turf.—Is damage likely to greens covered 2 inches deep with sleet frozen into solid ice, especially new vegetatively planted greens? Should ice be broken up and removed now? Been on greens 4 days. Wire reply collect. (Illinois.)

ANSWER.—We have never yet observed any harm occurring to grass due to its being covered with an ice sheet, except in spots where the soil was waterlogged, which is very often the case in low places. At a golf course near Washington some years ago the turf was covered with a solid sheet of ice for six weeks. The officials became alarmed at first and had the ice broken on one of the greens, but that was found to be expensive and to do a lot of harm to the turf. If you should attempt the same on your newly planted vege-

tative greens the results would probably be disastrous. We would advise you therefore to leave your greens alone as it is doubtful that the ice will do any harm.

3. Experiments in stimulating Bermuda greens; use of oyster shell, lime, manure, and ammonium sulfate.—We have Bermuda greens. They turn brown in winter, but by using Italian rye grass and redtop we have very satisfactory greens during the coldest season. As a general thing the Bermuda which turns brown in winter will grow again in the spring or summer, but not always as satisfactorily as desired unless it is encouraged to some extent, and we are considering the adoption of either of the following programs for the coming year. One program is to top-dress March 15 with 100 pounds of crushed oyster shell per green and water this into the ground; a week later, to sow 50 pounds of Bermuda seed per green and top the seed with a compost of fine cow manure and river sand mixed at the rate of 1 spade of river sand to 5 spades of manure. The other program is to top-dress March 15 with 100 pounds of crushed oyster shell per green and water this into the ground; a week later, to sow 35 to 55 pounds of Bermuda seed per green; two or three weeks later, to top-dress with river sand to which ammonium sulfate has been added so as to apply 4 pounds of ammonium sulfate to 1,000 square feet of green, watering this well into the ground. We should be glad to have your advice in this matter. (Louisiana.)

ANSWER.—We would advise you to treat one green according to your first program, a second green according to your second program, and a third green, or indeed all the others, by a fertilizing and top-dressing method which has so far proved the best method for use on bent greens in the North and which has also been followed with excellent results by golf courses in the South on their Bermuda greens. This third method is the occasional top-dressing with compost and the rather frequent use of ammonium sulfate. We believe a compost composed of one-fourth good loam, one-fourth manure, and one-half sand much to be preferred to the top-dressing you mention. The objections to the use of large quantities of manure are that it tends to introduce injurious insects into the soil and it requires excessive screening in order to get a material fine enough to sift down well into the turf. The objections to the use of oyster shells or lime in any form are that it tends to encourage certain weeds and, as far as we can see, has yet to demonstrate that it is of any value at all. The frequent use of ammonium sulfate, on the other hand, has demonstrated its effectiveness in keeping turf free of weeds and apparently has some effect in keeping turf free of earthworms. We would not advise you to spend any money for seed and the expense of sowing it even though your Bermuda turf may be thin. As for the use of Italian rye grass or redtop on Bermuda greens for winter play, it has been the experience of some clubs that this has a tendency to retard the recovery of the Bermuda grass in the spring.

4. Spring and winter seeding of fairways and planting of stolons.—On account of the dryness of last fall and the late start we got in seeding our fairways, we were obliged to leave four of the fairways unseeded. We should therefore appreciate your advice as to the best method and time for seeding these fairways in the spring. Most of the greens we planted have come up in excellent condition

but there are two or three about which we are doubtful. We are prepared, however, to top-dress them and add an additional light sowing of German bent seed. Several seedsmen have suggested to us that it would be better to reinforce these greens with stolons of creeping bent in the spring. What is your advice also on that point? (New York.)

ANSWER.—The great objection to spring seeding and spring planting of stolons is that the young plants suffer greatly from the onset of weeds. When the work is done in the fall, however, the plants have made sufficient headway by spring to withstand the weeds in a marked degree. This difficulty with spring planting is, however, not so great in your latitude as it is southward, and in your case we believe you are perfectly safe to proceed with the seeding of your fairways and the planting of stolons in the spring. The earlier you get the work done in the spring, the better. With regard to the seeding, it is generally difficult to work the land in early spring, and we would therefore advise that you seed in the late winter, seeding directly on the snow if you have to. This is nearly always successful, and two or three weeks' time are thus commonly gained. Of course, after the ground has thawed and dried out in the spring, you will need to roll it, as it will be in a very loose condition.

5. **Grasses for the rough in the South.**—Is there any grass seed that can be bought for seeding the rough in Florida? (Florida.)

ANSWER.—We know of no grass of which seed can be secured that is very well suited for the rough in the South. The native grasses make very good rough. The common native grasses of Florida consist of broom sedges and wire grass, both of which are very desirable for the rough. Of course there will be some sand spurs, but it is difficult to avoid these unless you establish a solid turf, for which either Bermuda grass or carpet grass would have to be seeded. Seed of these latter grasses can be purchased from any Southern seedsman.

6. **Fertilizing of fairways and putting greens.**—We should like your advice regarding the fertilizing of our fairways and greens for the coming year. (New York.)

ANSWER.—As for your fairways, best results will be obtained from top-dressing them in the winter or early spring with well-rotted and well-screened stable manure. If you are unable to obtain such material, the next best thing is an application of bone meal at the rate of 300 to 500 pounds per acre, preferably in February or early March. If you can get sufficient manure to apply on the thin spots of your fairway, do so, and use bone meal on the rest. As for your greens, we would advise you to top-dress them with compost made as described in the article in the June, 1924, BULLETIN, at the rate of about 1 cubic yard of compost to 3,000 to 5,000 square feet of green at one application. Also it would be advisable for you to apply ammonium sulfate, making two applications in the spring, one in the summer, and one or two in the fall. The applications in the spring and fall should be at a rate of not to exceed 3 pounds to 1,000 square feet, and in the summer at the rate of not to exceed 1 pound to 1,000 square feet. There is great danger of burning the turf if these rates

are exceeded, and especially so in warm weather. The ammonium sulfate should be well watered in after each application.

7. Water requirements of a sandy loam soil.—For the design of a water system what would you consider the approximate requirements for a sandy loam with complete drainage underneath? Would one inch of water every two days, contemplating watering heavily every other day, be sufficient for creeping bent greens on such soil? What pressure would you recommend at the end of the delivery pipe? (Alberta.)

ANSWER.—The problem you bring up has been studied for some time at Pine Valley Golf Club, Clementon, New Jersey, where they have a very sandy soil, and doubtless the experience of that club will be of some help. At Pine Valley they have obtained satisfactory results for the past three years on the basis of one pint of water for each square foot of surface every other day. This amounts to only 1/10 inch of rainfall. They are, however, increasing their pumping facilities, not so much with the idea of applying more water but of distributing it more economically, and they expect in the future to be able to deliver probably 1½ pints of water per square foot over the entire course, which would amount to aproximately 1/7 inch of rainfall. For greens alone we should consider that you would need facilities to do a little more than this. In regard to pressure, at Pine Valley they have 100 pounds pressure at the pump, which gives them 30 pounds pressure at the outlet at the highest point and at the end of the smallest pipe. The size of the pipes ranges from 8 inches at the pump down to 2 and in some cases 1 inch at the greens. As regards sprinklers, there is much to be said in favor of the simpler types, as the complicated ones get out of order more often, and as sprinkling is generally done at night this is apt to cause considerable difficulty. The sprinkler used at Pine Valley is a home-made affair, consisting of ¾ and 1-inch pipe to which a butterfly sprinkler head is attached, which has large openings which do not clog readily, and which at the same time makes a good distribution of the water.

8. Seed for producing bent greens.—We are preparing to build nine additional greens on our course and desire to have these in play with as little delay as possible. As we have no creeping bent nursery and can not obtain sufficient creeping bent stolons to plant the greens vegetatively, we have about decided to seed with a mixture of 50 per cent New Zealand bent and 50 per cent redtop. Your suggestions in this matter will be appreciated. (Wisconsin.)

ANSWER.—A mixture of 50 per cent German mixed bent and 50 per cent redtop gives very good results. The redtop is rather slow in disappearing, but ultimately does so, and a good bent green results. A mixture of 1/3 redtop and 2/3 German mixed bent is still better. These mixtures are, however, to be used only in the interest of economy, as bent alone is to be preferred. We advise the use of German mixed bent in preference to New Zealand bent, inasmuch as the former contains a trace of creeping bent as well as some velvet bent, which are not found in the latter. Three pounds of good bent seed, or bent-redtop mixture, are ample for seeding 1,000 square feet of green.

9. Commercial mixed fertilizers; spring fertilizing of fairways; rate of application for bone meal.—I am enclosing a pamphlet describing * * * Plant Food, which the company advises us to use on our fairways in place of the bone meal which we have been using. You will note that the analysis of their fertilizer is as follows: Two per cent sodium nitrate; 2 per cent ammonium sulfate; 10 per cent available phosphoric acid; 1 per cent insoluble phosphoric acid; 4 per cent potassium sulfate. We now use 1,100 pounds of bone meal per acre, and they claim we will have to use only 300 to 500 pounds of their fertilizer per acre. Our soil is heavy clay, and we have had good results with bone meal. They offer their product at $45 per ton delivered in carload lots; we have been paying about $37 per ton for bone meal. Your advice in the matter would be appreciated. (Pennsylvania.)

ANSWER.—We regard your application of 1,100 pounds of bone meal per acre as excessive and believe you can get as good if not better results with bone meal applied at the rate of 300 pounds per acre as the "Plant Food" you mention applied at the same rate. For fairways we have found bone meal to be excellent and the economical and effective application to be 300 to 500 pounds per acre in early spring. Raw bone meal usually contains approximately 4 per cent nitrogen and 22 per cent phosphoric acid. Steamed bone meal contains approximately 1½ per cent nitrogen and as high as 28 and 30 per cent phosphoric acid. There is practically no potash in bone meal, and with the possible exception of very sandy soils it is doubtful if fairways need potash to any considerable extent.

10. When to reseed established turf.—A representative of a seed firm has just visited us and recommends that we sow 30 to 40 pounds of seed on our greens this spring. To us the turf seems to be in satisfactory condition. We should like to have your advice before we purchase this seed. (Connecticut.)

ANSWER.—If your greens seem to be in satisfactory condition, with a good or even a fair stand of grass, putting on additional seed in the spring is simply throwing money away. Your greens require no other treatment this spring and through the summer than occasional top-dressings with good compost with one or two applications of ammonium sulfate. It would be preferable to apply the ammonium sulfate mixed with the compost. About the only case in which seeding on established turf pays is to seed bent on putting greens composed of other grass, doing this in late summer.

11. Time to sow Bermuda seed.—We are preparing to seed a new green with Bermuda grass this spring and should be glad to know what you consider the best time to plant Bermuda seed. (Virginia.)

ANSWER.—Bermuda seed will make practically no headway until the weather gets warm. In the northern part of the Bermuda belt we would advise waiting until May 1 before the seed is sown. In the southern part it should be sown as soon as the rains begin any time after April 1.

BOOST THE GREEN SECTION