

TIMELY TURF TOPICS

Issued By The

UNITED STATES GOLF ASSOCIATION GREEN SECTION

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PYTHIUM DISEASE: Turf frequently suffers in hot weather from a disease-producing fungus known as Pythium. So far, no satisfactory fungicide has been developed to control this fungus. However, it is encouraged by abundant water and excessive heat and is, therefore, more severe in wet than dry summers. Excessive watering of turf should be avoided in hot weather to minimize the injury from attacks of this fungus.

SOIL TESTS: As discussed in the February, 1940 issue of TURF CULTURE, the limitations of soil tests are generally recognized. They are helpful, however, in planning local tests which can be made on limited areas of turf. The results of such tests not only help one to recognize to what fertilizers his turf can be expected to respond but also to interpret what a reading of 15, 35, 50 or 100 pounds of phosphoric acid to the acre means in terms of good turf on his soil.

If you are interested in having your soils tested, this is a good time to do it, before planning your fall fertilizing program. The Green Section will be glad to make such test for any club that is a member of the United States Golf Association. Examinations will be made as promptly as possible, and as complete reports and recommendations as are justified will be made to the club.

SAMPLING SOIL: In turf the surface 1 or 2 inches are most significant so far as chemical analyses are concerned. To represent the area in question, 5 or more plugs of the surface 1 or 2 inches of soil should be removed from an area of 1,000 square feet. These can be cut approximately 1 inch square with a knife or with any other device you care to use. It is well to wrap each plug separately in waxed paper to preserve it intact in its original condition and to prevent crumbling. If the tests are to be an aid to a general fertilizing or liming program it is not necessary to test every green and fairway, but only representative ones for each type of soil.

Samples of soil are of no value unless properly labeled. When you send them to the Green Section or to your State Agricultural Experiment Station they should be accompanied by certain information to aid the laboratory man in interpreting the results of the tests and in formulating recommendations for you. This should include:

- 1) Location,- green, fairway or lawn;
- 2) Kind of grass growing on area;
- 3) Reasons for wanting soil tests made, such as for instance thin stand of grass; excess of clover; excessive drying in spots; yellow, unthrifty growth; etc.;
- 4) Account of fertilizing or liming program and arsenical treatments if any, followed the last few years;
- 5) Drainage,- natural or artificial and how satisfactory;
- 6) Length of time area has been under turf;
- 7) Amount of humus, if any, incorporated in the soil;
- 8) Amount of sunshine or shade the area receives;
- 9) Tendency of soil either to dry out in spots or to remain soggy.

NEW SEEDING: Now is the time to grade and prepare the soil on all areas which are to be seeded this fall, in order that the seed may be sown promptly in late August or early September. At this time the summer annuals are no longer germinating and the seedling grass when it appears will be able to take full advantage of the favorable growing conditions during the fall months.

ANTS IN TURF: Many species of ants are troublesome in turf because they make mounds and also damage the grass by destroying the blades near the openings of the hills as well as the roots. The Argentine ant, which is by far the most troublesome species is found only in certain parts of California and in the Southern states, south of the area between central Texas and North Carolina.

Ants live in subterranean colonies or hills with a social organization comparable to that of the honey bee. In each colony there are the workers which are the ones seen above ground and which carry the food to the queen and larvae remaining underground in the hill. Any method of control, to be effective, must kill the queen or she will continue to lay eggs and perpetuate the colony.

Control methods depend either on the injection of chemicals such as pyrethrum extract directly into the ant hill, thereby killing the entire colony at once, or on the distribution of poisoned bait. When the latter is used, it must be so dilute that the worker ants, which are the ones to gather the food, will live long enough to carry it into the colony and thus destroy the queen and larvae.

Not all poisons which are ordinarily effective against ants can be used because they may kill the grass as well as the ants. For instance, carbon bisulfide, kerosene, etc. which are often used to exterminate entire colonies are not recommended for use in turf because of the danger to the grass. Also, thallium sulfate, the active ingredient in many proprietary poisoned baits for ants, is extremely toxic to grass and must be used with care. Borax which is used in other baits for ants may injure grass and should be avoided, particularly in excess, on grass.

Species of ants vary in their feeding habits. Some prefer sweets, whereas others are attracted only by fatty foods. Moreover, they seem at times to get wise to certain baits so that what will work at one time may not work, even with the same species, at another time. Hence, various control methods are suggested here. If one does not work under your conditions, try others until you find an effective method.

Where it is practicable to treat individual colonies, a solution of pyrethrum extract can be injected into each colony by means of a spring-bottom oil can, without fear of injuring the grass. For this purpose, the commercial extract is diluted 1 part to 100 of water, a few drops injected into each hill, and the hole through which the injection was made at once plugged with dirt. Where large ant nests are formed, it may sometimes be necessary to use 2 or 3 ounces of solution in each hill and to cover the area with a wet blanket or heavy cloth for a time. Or, a dilution of 1 part of commercial extract in only 50 parts of water may be tried.

Several simple baits which have been found effective for ants in turf are given below. To use the baits, pieces of sponge, absorbent cotton, or cloth may be dipped into the solutions and then placed in low metal cans, bottle caps, salve boxes, or heavily paraffined pasteboard in which small openings have been made through which the ants can readily enter and leave. Where turf is in use during the day, as on the golf green, the bait can be put out in the evening and lifted in the morning.

Bait A. Dissolve 4 ounces of sugar in 1 quart of hot water and add $\frac{1}{2}$ ounce of tartar emetic.

Bait B. Dissolve 1 pound of sugar in 1 quart of hot water, add 8 grams of sodium arsenate and boil.

Bait C. This is recommended only for the control of the Argentine ant. To $4\frac{1}{2}$ quarts of water add 9 pounds of granulated sugar, 6 grams of crystallized tartaric acid, and 8.4 grams of benzoate of soda. Boil slowly for 30 minutes and cool. Then dissolve 15 grams of sodium arsenite (C.P.) in $\frac{1}{2}$ pint of hot water and cool. Add this poison solution to the sirup, stir well, add $1\frac{1}{2}$ pounds of strained honey and mix thoroughly.

Another method for using these poisons is to mix the sugar and chemicals dry with an equal volume of bran or cornmeal and add enough weak solution of honey in water to make a crumbly mixture which can be scattered about the ant hills.

Another method is to mix 1 ounce of Paris green with 1 pound of brown sugar and sprinkle the crumbly mixture around the ant hills.

For the fat-loving ants the same poisons may be mixed with lard to make a paste-like bait. It should be remembered that the bait must be kept so dilute that the workers can carry it into the colony before succumbing to it themselves.

GOOD PROSPECTS FOR 1940 CROP OF KENTUCKY BLUEGRASS SEED: The Agricultural Marketing Service of the United States Department of Agriculture anticipates that the crop of Kentucky bluegrass seed this year will exceed that of 1939 by 60 percent. In most states the increase is attributable principally to larger yields rather than to increased acreage. This increase in production is anticipated in all important seed-producing states except Missouri where production may be no greater than last year.

The quality of the seed of this year's crop is better. The seed generally appears to be much plumper than last year when it was particularly light in weight. Moreover, recovery of clean seed from rough, cured seed of the 1940 crop is expected to average 52 percent in the Western district and 42 percent in Kentucky as compared with 45 and 35 percent, respectively in 1939. This is principally due to the fact that the pastures were cleaner than usual and the weather conditions more favorable for good seed development.

FALL FERTILIZING: Plans should be made now for fall fertilizing programs and orders placed, if fertilizers are to be purchased. Fertilizers should be purchased and applied on the basis of content of plant food, particularly nitrogen, since all experimental work with turf to date has shown that nitrogen is the element in the soil which is most important for the growth of grasses for turf purposes. As discussed in the December, 1939, issue of TURF CULTURE, phosphorus and particularly potassium which are necessary in the successful culture of many agricultural crops are less important than nitrogen for turf grasses.

A good complete fertilizer for turf contains about one-half as much phosphoric acid as nitrogen and still less potash, as for instance a 12-6-4, a 10-5-3 or some similar grade. This should be applied to established turf about the middle of September at the rate of about 1 or 2 pounds of nitrogen to 1,000 square feet, depending on the condition of the turf and soil. Applications of such fertilizers at that time will encourage the turf grasses to fill in the bare spots left by the annual weeds, such as crabgrass, which die with the first light frosts unless they have been killed earlier with chemicals.

SOUTHERN JUNE BUG: As is the case with the Japanese beetle, the turf injury caused by this insect is the result of feeding habits of its grubs or larvae. The adult southern June bug appears late in June or early in July, lays its eggs in the soil, and by the middle of August the grubs have hatched from the eggs and are feeding vigorously on the grass roots, thus injuring the turf. The grubs continue to feed on the roots until cold weather comes, when they burrow further into the soil to a depth of about 6 inches and become inactive. In the southern part of their range during mild winters, they may continue to feed throughout the winter months and may seriously injure turf even in mid-winter. Like the Japanese beetle grubs, they may be controlled with arsenate of lead applied at the rate of 5 to 10 pounds to 1,000 square feet. In sandy soil even a 3 pound rate has been found effective.

GREEN SCUM ON TURF: During July and August, minute plants known as algae may form a green scum on turf in spots where the grass is thin, particularly in areas where it has been thinned out by disease. The scum is likely to develop during exceptionally rainy seasons or in low, heavily watered areas where there is an abundance of plant food and some dead grass. Its growth can usually be controlled by an application of corrosive sublimate at the rate of 1 to 3 ounces to 1,000 square feet. If it persists in being troublesome, it would be wise to permit the scum to dry out and form a paper-like crust and then break this up by spiking or raking with an iron rake. This operation should be followed by the application of a light topdressing or reseeding, depending on the extent of the trouble.

THE ANNUAL TURF MEETING SPONSORED JOINTLY BY THE U.S.G.A. GREEN SECTION AND THE GREEN-KEEPING SUPERINTENDENTS ASSOCIATION WILL BE HELD AT THE ARLINGTON TURF GARDEN ON MONDAY AND TUESDAY, SEPTEMBER 16 AND 17.