TIMELY TURF TOPICS

Issued By The

UNITED STATES GOLF ASSOCIATION GREEN SECTION

P. O. Box 73

BENJAMIN FRANKLIN STATION

WASHINGTON, D. C.

SNOWMOLD INJURY TO TURF: One of the several causes of turf injury in northern sections of the United States during the winter and early spring months is the fungus disease known as snowmold. The name of this disease is something of a misnomer because snow is not necessary for its appearance, but it is important only in so far as it provides a favorable temperature and moisture for the growth of the fungi that may cause this type of disease. In some areas, however, such as the Pacific Northwest, the fungi grow actively in the winter in the complete absence of snow so long as there is an abundance of rain or mist.

In the early stages of the disease the fungus may appear as a thick, cottony growth covering certain more or less definite but irregular patches of turf ranging in diameter from one inch to several feet. Later, as the grass dries, these same patches appear grayish and dead, the spots in the final stages resembling those on turf infected with brownpatch. The disease may occur during fall, winter, or spring months but is usually first noticed when the snow is melting.

This is the time of year, however, to consider possible ways and means of preventing snowmold injury to your turf this winter or next spring. If you are growing grass in northern areas where snowmold is prevalent, it is advisable to use strains of grasses which are resistant to the ravages of the fungus. Some of the grasses which are particularly susceptible, and are therefore to be avoided in such areas, are red fescue, Poa annua, and several strains of creeping bent such as seaside, Columbia and Inverness.

Fertilization with excessive quantities of nitrogen late in the fall has been shown to increase the susceptibility of any of the grasses to snowmold. Therefore, in regions where snowmold is likely to prevail, fertilizing should be avoided in the fall. In such regions, inorganic fertilizers are better than organic materials for late summer fertilizing because with the latter the nutrients are slowly available and feed the grass much later in the season than do the inorganic materials applied at the same time.

Covering the turf with such materials as manure, and straw in order to protect it from the cold should be avoided. The use of any such coverings which keep the grass wet after the snow begins to melt and the grass begins to grow will encourage the growth of the snowmold fungus. Snow falling on unfrozen ground will encourage the fungus both in late fall and early spring.

However, even when these precautions are taken, it is a good form of insurance to apply mercury fungicides now as a preventive treatment. Corrosive sublimate and calomel have been shown to control the disease effectively. These should be applied in late fall at the rate of 2 to 3 ounces to 1000 square feet. Either corrosive sublimate alone or a mixture of it with calomel will be satisfactory. They may be mixed with sand and applied even after the first snow has fallen. Under certain conditions which are particularly favorable for the development of the fungus or where grasses are used which are particularly susceptible to the disease, a higher rate of 4 to 5 ounces to 1000 square feet may be necessary. In the Northwest where the winters are open, more nearly perfect control is obtained by applying repeated treatments at lower rates in fall, winter, and spring. At present, no fungicide can be recommended as a substitute for the mercury compounds although the latter are now unusually expensive.

IMPROVE DRAINAGE NOW: One of the most frequent causes of winter injury to turf probably is inadequate drainage. Too often, the turf is weakened by poor drainage conditions during summer as well as winter. However, there are a number of factors which are involved in this problem particularly during the winter. Even though drainage may be good in the summer, the snow, ice, and frozen soil all combine to prevent the water from running off or penetrating the soil in the winter.

Alternate freezing and thawing is aggravated by poor drainage both on the surface and within the soil. The resulting heaving is particularly injurious to seedling turf. Usually such heaving is worse in heavy than in light soils. Therefore, before the ground freezes, an effort should be made to improve the drainage on areas which are recognized as being inadequately drained. This will not only reduce the danger from injury to turf during the winter but will speed up the run-off of water next spring when melting snows and spring rains bring the question of drainage to the fore once more.

GREY OR WHITE SODIUM ARSENITE: Sodium arsenite is available both in a white and a grey form. Both forms contain similar amounts of metallic arsenic and apparently are equally toxic, but the grey product is a trifle cheaper than the white. When applied by the dry method, the grey form is apparently just as satisfactory as the white. The grey form, however, contains $1\frac{1}{2}$ percent more insoluble matter than the white and consequently does not dissolve so completely. When the grey product is to be applied as a spray, therefore, the solution must be filtered through a cloth or a fine screen or it will clog the pores in the spray nozzles.

ARSENICAL TREATMENTS AND BIRDS: The question is raised repeatedly as to whether or not the arsenical treatments which are commonly recommended in turf maintenance programs are injurious to birds. Several years ago, recognizing this possible hazard to birds, the Green Section cooperated with the office of Mr. McAtee of the Biological Survey in a study of the birds feeding on turf which had been poisoned with arsenate of lead.

For the test, an area of turf was selected which was badly infested with sod webworms. These grubs were attracting large numbers of birds to the area. Before the area was poisoned the representative from the Biological Survey studied the habits of the birds and located all the nearby nests. Then liberal quantities of arsenate of lead were applied to the turf and a high percentage of the webworms were killed. The birds returned the first day after the application of the arsenate but they did not eat nor carry to their young any of the poisoned webworms nor the earthworms which were poisoned by the same chemical. After that the birds went elsewhere for their food. The young birds in the nests were watched and it was found that they all grew in a normal manner and left their nests without any sign of injury.

Similar observations have since been made repeatedly on the Arlington Turf Garden. There have been occasions in which several hundred birds have been feeding there and within 24 hours after the poison was applied the area was abandoned by the birds, without any sign of injury to them.

Likewise, on many golf courses where arsenate of lead has been applied to greens, fairways, and even the rough, no dead birds have been found to indicate poisoning. At the same time, ground-feeding birds have continued to nest and raise their young on these courses with no evidence of harm from arsenicals. Apparently in regions where grubs or worms are sufficiently numerous to justify the expense of an application of arsenate of lead, the birds can usually find a plentiful supply of them in nearby areas which it has been impractical to treat.

The amount of arsenic applied to turf to selectively kill weeds is only a small fraction of that used in insect control. The Green Section is confident, therefore, that arsenical treatments to turf can be made to kill insects or weeds without introducing any menace to the bird population.

FAIRY RINGS: Fairy rings may appear wherever turf grasses are found. They are caused by various fungi, one of the commonest being the edible mushroom, Agaricus campestris. The thread-like mycelia of these fungi grows 6 to 8 inches below the surface of the soil and their presence is not recognized until the fruiting bodies which are known variously as mushrooms, puffballs, and toadstools suddenly appear in a more or less defined ring. Each year the infestation gradually spreads outward from a central point in an ever-widening circle.

The tightly interwoven mass of mycelium occurs in a circular band or ring. During dry periods the soil invaded by the fungus is dried and not easily moistened by showers or sprinkling, with the result that the grass wilts and often dies immediately above the mycelium. At certain seasons of the year the grass just inside and outside of the band of injured turf which marks the presence of the mycelium is stimulated in some way by the fungus, so that it grows as though it were particularly well fertilized.

Fairy rings are usually considered as interesting curiosities, which is fortunate because no control for them has been developed as yet. This lack of control is due to the fact that unlike most disease producing fungi, the mycelium grows too deep in the soil to be reached by the fungicides which are usually filtered out by the top few inches of soil. If it is necessary to rid the turf of them, as is the case occasionally on putting greens, the most certain method is to remove the sod in the affected area, take out the soil to a depth of 6 or 8 inches, and replace it with new soil and sod. However, the fairy rings are less conspicuous and cause less damage on turf which is well-fertilized and properly watered than on that which is less carefully maintained.

FERTILIZING IN THE SOUTH: In the southern states the summer grasses tend to turn brown during short cold periods in the fall. If generous applications of fertilizers are made during these cold periods, they will encourage the summer grasses to actively grow again during intervening warm spells. Sulfate of ammonia applied at the rate of 3 to 5 pounds to 1,000 square feet will serve well for this purpose.

FALL LEAVES FOR COMPOST: This time of year one of the major jobs in turf maintenance is to keep ahead of the falling leaves. Once they are raked into piles it is much better to use them in making compost than to burn them. Not only is the latter method wasteful, but it involves a risk of leaving unsightly scars, even though they may be on outlying areas.

Decomposition of the leaves in the compost pile can be hastened by the addition of fertilizer materials. One of the combination of materials frequently recommended for this purpose is the following,- 70 pounds of sulfate of ammonia, 25 pounds of superphosphate, and 55 pounds of finely ground limestone, to each ton of leaves. The leaves should be spread in a layer 6 inches deep, treated with this combination of fertilizers and watered before the next 6-inch layer of leaves is added. Such material, when well decomposed, makes excellent topdressing for turf.

SCREENING COMPOST: Since compost must be screened before it can be applied as a topdressing to turf, this should be taken care of when the compost is relatively dry and easily pulverized. Usually the compost is in this condition in late summer, but the pressure of other work which is more immediately necessary frequently makes it impossible to screen a good supply of it at that time. Hence, too often the screening is postponed until spring when it is needed again. Unfortunately at that time of year the compost is likely to be wet and soggy so that screening is impossible. It is wise, therefore, as soon as time permits in the fall, to screen enough compost and soil for next year's demands for topdressing. Where practicable, a covering for such screened material is desirable during the winter months.