

TIMELY TURF TOPICS

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CONTINUED DROUGHT DURING WINTER: In spite of the drought of last year, January was characterized by a widespread deficiency in precipitation. In fact, according to the Weather Bureau statistics, in no other January since 1886 has there been nearly so universal a shortage in precipitation, on the basis of state averages. Florida with 140 percent of its normal rainfall was the only state in the Union to have more than average precipitation during that month. The Dakotas, with 11 and 16 percent of their normal precipitation, experienced the driest January on record, and Texas had the driest January since 1914, having only 35 percent of its normal rainfall.

During February the country as a whole continued to have deficient precipitation. The middle Atlantic section was relatively the driest, decided deficiencies occurring from the Ohio River southward, eastward, and north-eastward, except for continued heavy rains in Florida. More than normal precipitation occurred in the states from Ohio westward along the northern Ohio and central Mississippi Valleys and in the central Great Plains, while the states both north and south of these received much less than normal amounts of precipitation. All states west of the Rocky Mountains except Utah and Oregon were drier than normal.

TURF RESEARCH IN SOUTH AFRICA: It is interesting to note that in South Africa in spite of the war, a fund was established last year to ensure a permanent extension of the turf research work which is being done at Frankenswald Experiment Station with the cooperative efforts of Witwaterstrand University and African Explosives and Industries. The underlying idea was to create a fund subscribed to annually by all sporting bodies and other turf users, such as municipalities, business concerns, or private individuals, in South Africa. The discussion of the advisability of attempting to raise this fund during the war resulted in the conclusion that "at no time would the results of research prove of greater value, than when the time came for the re-conditioning of existing courses and the construction of new ones. Many of the achievements of science are only gained after years of patient work. If started after the war, results would not be available just at the time they were most needed."

KEEP TOOLS RUST-FREE: The life of tools which will be progressively more difficult to replace may be lengthened by keeping them free from rust. Even heavy deposits of rust can be removed easily and economically by the use of a paste made from the following ingredients:

Glycerine	1 part
Oxalic acid	2 parts
Phosphoric acid	2 parts
Ground silica	5 parts

The tools should be coated with the paste and allowed to stand in a warm place for about 20 minutes, after which the paste and the rust with it can be washed off, and rust preventive applied.

March, 1942

WAR TIME MAINTENANCE

Turf maintenance practices commonly in use on golf courses, parks, cemeteries, and even on private as well as public lawns, in many cases will have to be drastically modified for the duration of the war. Shortages in materials going into commonly used fertilizers, insecticides, fungicides, and herbicides, as well as reduced supplies of new equipment, rubber, and possibly gasoline, will mean adjustments both in the recognized standards for turf and in the maintenance methods used. With inadequate and inexperienced labor as well as sharply cut budgets in many cases, the maintenance of even passable turf will necessitate the maximum in efficiency and planning on the part of those responsible for its condition. The following suggestions are offered as guides for planning the war-time turf maintenance program.

FERTILIZING PROGRAM REQUIRES CAREFUL CONSIDERATION: The war-time policy regarding the application of fertilizers will have to be developed in each case after all the complicating factors have been given due consideration. A dense stand of grass such as is encouraged by proper fertilization is the best insurance for turf against the invasion of weeds and clover. On the other hand, heavy fertilization to develop this dense stand produces increased leaf growth which necessitates increased mowing. Also, the lush growth of heavily fertilized grass is more susceptible to disease. The fertilizing program which will be economical from all angles, therefore, must be determined after a careful consideration of the prevailing turf conditions and the money and labor available for mowing and other maintenance practices. Generally speaking, the initiation of any new large scale fertilizing programs will be discouraged.

The problem of availability of fertilizers may not become acute this season. According to the National Fertilizer Association, we may "squeeze through with only minor shortages". It is anticipated that some price rises may be occasioned by increases in transportation costs, labor, and expenses incident to war-time adjustments, but it is anticipated that "these should be only in proportion to the additional costs and difficulties of war-time production".

REDUCING FAIRWAY MAINTENANCE COSTS: The suggestion is heard repeatedly that fairway maintenance costs may be reduced by making them narrow and permitting the marginal areas to grow to rough height. This policy might be satisfactory on unfertilized fairways, but it should not be followed where fairways have been well-fertilized over a period of years. Grass on such neglected sides of fairways will grow more vigorously and inflict a greater penalty than in the adjoining unfertilized rough.

On courses where fairway fertilizing has been included in the maintenance budget, however, both materials and labor might be saved without great sacrifice either to the grass or the player, by fertilizing at the customary rates only the center strips of fairways or only the principal landing places. The remaining portions might be left unfertilized or, at the most, given applications at materially reduced rates.

DON'T NEGLECT THE ROUGH: If the usual dense stand of vegetation in the rough is not cut, the cost to the members of an increased number of lost balls will probably soon outweigh the money saved by less frequent mowing of these areas. Where power equipment can be used, the intervals between mowings should not be so long that after cutting enough hay is left behind in clippings to conceal balls. Under present conditions, members are most certain to look with disapproval on any reduction in maintenance which increases the menace of the lost ball.

SAND TRAPS: Raking of sand traps is one part of the maintenance program which can be neglected without affecting the condition of the course after the war. If they are to be neglected, it is better to eliminate raking the sand or to rake it at irregular intervals than to contemplate seeding the traps with some ground cover unless they can be altered easily to make it possible to use power mowers in them. Unraked sand is certainly to be preferred to uncut, undesirable vegetation which is certain to increase the lost ball menace. Where traps are so placed that sand persists in washing out onto fairways it would probably be better to remove it permanently than to return it to the traps.

BY-PASS THE WATER HAZARD: Many balls are lost in large water hazards. If, through a war-time reduction in maintenance costs, banks around the hazards are permitted to grow up in tall grass they are likely to be responsible for as many lost balls as the water itself. Players will probably welcome, therefore, any war-time modification which will enable them to by-pass these hazards and conserve their present supply of balls. In many instances, the building of a new tee on one side of, or across, the water will make possible such a by-pass and will result in a decided saving in the cost of hand labor which is required to maintain the banks around the water. Where such by-passes are not practicable, protective screens no doubt will be appreciated by the players.

CONSERVE FUNGICIDES: Since the availability of the mercurials for use as fungicides to protect turf during the coming season is already limited, clubs are urged to conserve their supplies and use them only as necessary. Judicious watering of the grass, that is watering the grass according to its needs rather than according to a schedule, may help prevent heavy disease attacks. Such preventive measures will, if successful, reduce the amount of mercurials necessary to control the diseases once they have gained a foothold.

In order to conserve fungicides and reduce the cost of control, many mild cases of disease may be overlooked safely. When a mild attack of dollarspot, for instance, appears in a scattered way on a few greens, it is a common practice to treat all the greens as a precautionary measure. Rather, than making such general applications, single greens or even parts of greens may be treated with fungicides as needed. If reduced funds or a shortage in available fungicides necessitate limiting the treatments more sharply, such a mild attack may be ignored safely the first time. It would be false economy, however, to spare the fungicide if severe or frequent attacks develop.

VIGILANCE FOR TURF PESTS NECESSARY: In order to reduce the expense of extensive control measures, turf must be watched even more carefully than usual for the first evidence of an insect or grub attack. Immediate treatment of the pest in the early stages of the attack may prevent serious damage to the turf or the necessity of extensive control measures. Information will be given from time to time in **TIMELY TURF TOPICS** concerning the availability of insecticides, and if some of them cease to be available, the possible use of substitutes as they are developed to take the place of the customary remedies will be discussed.

CUTTING GREENS: In England where no one but old or physically handicapped men and boys under 18 are available for turf maintenance work on golf courses, it has been necessary to give up mowing the greens by hand and to use gang or power mowers. In this country, the question of whether to use motor-driven or hand mowers will have to be answered on each course by which is least available, motorized equipment or man-power.

CAN WATERING BE REDUCED? This question must be answered for each course. No recommendations for reduction in amounts of water used can be made which will hold throughout the country or any one section of the country. In many cases, the fairway turf will be distinctly benefitted by reducing or even completely discontinuing the watering. Where excessive amounts of water have been used over a period of years, however, the plants which predominate in the turf are likely to be those which require abundant water. On such courses any sudden reduction in the watering program may result in the death of these plants and the loss of large areas of turf. Also on some courses under certain conditions of soil and climate even when the turf has never been watered excessively, drastic cuts in the amount of water used may be expected to result in the loss of turf. Where an intermediate watering policy has been followed, however, definite reductions in the amount used can be made with a distinct permanent benefit, and at the worst, only a temporary injury to the turf.

REDUCE THE SIZE OF GREENS: On courses where drastic cuts in maintenance must be made, a reduction in the size of the greens will account for appreciable cuts in labor and cost of maintenance. With equal amounts of labor, money, fungicides and insecticides, smaller areas can be kept in better putting condition than can the entire original greens. Particularly where greens are larger than average, therefore, it would be wise in the double interest of maintaining the best possible playing conditions and of reducing maintenance costs and labor, to maintain only a portion of each green under putting conditions. The greens should be carefully considered before deciding which parts are most desirable for play and what is the minimum area which must be kept under good putting conditions on each.

AVOID ALTERATIONS: In planning the turf program for the year, any major alterations to greens, fairways, bunkers, etc. should be avoided except where such changes definitely reduce future maintenance costs. This will conserve the maximum amount of labor and money for the maintenance of existing turf in as healthy, weed-free condition as possible.

MOWING HEIGHT: Golfers who are anxious to have a playable turf for the duration in spite of drastic cuts in vital materials and labor, must give more consideration to the growth requirements of the grass. The shorter the grass is cut, the less food will be manufactured since the leaves are the sugar factories of the plant. This means a more poorly developed root system and consequently less resistance to unfavorable environmental conditions and a thinning out of the stand of turf grasses. As they die out in spots, weeds, clover, and the coarser leaved species of grasses will quickly take their place.

The close clipping of grasses such as is the common practice on golf courses is particularly hard on the erect growing grasses such as Kentucky bluegrass and the fescues which spread by underground runners or rhizomes. From the standpoint of the grass, the proper height as well as the frequency of cut should be determined by the time of year, climatic conditions, and the kind of grass in question. If turf is to be cut less frequently than usual, it is not wise to make up for this change by setting the mowers lower. Serious injuries from scalping are more likely to result from infrequent mowings when the machines are set to cut close than when set for a higher cut.

LICENSE NECESSARY TO POSSESS OR USE SODIUM CHLORATE: Sodium chlorate, which is used in the control of weeds, formerly was imported in large quantities from Japan, Sweden, and France, one company being the sole producer in this country. Recently, a second company began manufacturing it in sufficient quantities to take care of the needs on the Pacific coast. Although it will not be obtainable on the market until after allocations have been made it appears now that sodium chlorate will again be available, perhaps in somewhat limited quantities, for weed control.

Sodium chlorate, however, is included in the Federal Explosives Act as one of the ingredients of explosives. According to this Act, therefore, it cannot be sold, purchased, used, or possessed in time of war without a license. The system for licensing this material has been set into operation and there are at present distributed throughout the country some 3,200 licensing offices where licenses can be obtained. In many cases these are located in the offices of the County Clerks. At least, it probably will be possible to obtain from the County Clerk information as to where applications for licenses may be made. Further information can be obtained by addressing inquiries to the Bureau of Mines, Washington, D. C.

Since five different kinds of licenses are available, depending on the way in which the material is to be handled, it is important to know what kind to apply for. It is suggested that golf clubs which have any sodium chlorate on hand at the present time apply for a "purchaser's license" which will permit the club to purchase, use, or possess it. In addition, if it is to be used on the course, a "foreman's license" must be obtained in the name of the greenkeeper. This latter license makes it possible for the greenkeeper to have any of his help apply the sodium chlorate under his supervision. Without this second license, it is necessary for the person whose name appears on the purchaser's license to apply the material himself. Licenses cost only 25 cents plus a notary fee.

Other materials which are covered by this Act and which may be kept on hand around golf courses for the removal of stumps, etc. are blasting powders, blasting caps, detonators, dynamites, electric blasting machines, fuse of all varieties, gunpowder (except small arms or shotgun cartridges) and ammonium nitrate. The same regulations hold for those materials as for sodium chlorate.

Important regulations are also given in the Act for the storage of explosives and ingredients. They must be kept securely locked and protected against theft. Containers holding small amounts up to 25 pounds may be stored in strong boxes which must be kept locked and these boxes in turn should be kept in a securely locked building. It is important, therefore, if sodium chlorate has ever been used on the grounds for weed control or any other work, that a thorough check be made and if any material remains that it be put under lock and key and a license be obtained for possessing it. The purpose of such rigid regulations is to make certain that none of these potentially dangerous materials get into the hands of saboteurs.

BAN ON MERCURY FUNGICIDES FOR TURF: During the first 3 months of 1942, manufacturers have been permitted to manufacture 50 percent of their usual output of mercury fungicides for turf purposes, but after March 31 none may be manufactured for that use. After that date mercury fungicides can be manufactured for use on food crops only. This order does not, however, prohibit the use on turf of supplies already on hand.

CLEAN UP WOODED AREAS: The leaves and underbrush in nearby woods may be responsible for an unnecessary loss of many balls. It would be very helpful, therefore, to clean up the wooded areas by burning out the leaves and cutting away the underbrush promptly this spring.