

TURF MAINTENANCE — NOW AND LATER

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★ Turf on golf courses has been better this year than players had a right to expect. With unavoidable wartime shortages in labor, fertilizer and supplies, some deterioration was inevitable. Of necessity greenkeepers focused attention on greens. That was logical and as it should be. At a few clubs putting surfaces were as good as ever before. But generally greens were not up to pre-war standards. Tees, fairways, traps and bunkers received little or no care. As a consequence they will need extra attention when labor becomes more plentiful.

The labor situation was considered bad in 1943. It has been even worse this year; the principal bottleneck of maintenance everywhere. Clubs in metropolitan areas and war production centers depended mainly upon school age boys. Some were good, but very few could be trusted with exacting tasks. The mowing of greens seemed to be their most creditable job. Now that school has started, labor will be even more scarce. The shortage is apt to continue acute for the balance of this year. Effective relief is not likely before hostilities cease in Europe.

Except for a brief trying spell of hot weather in August, climatic factors have been generally favorable for growth. The late fall and winter was unseasonably dry almost everywhere. Consequently, the subsoil was deficient in moisture when growth started. Dry spots began to develop in greens and around the edges on elevated ones. Had hot humid weather, accompanied by drenching rains prevailed, considerable turf would have succumbed to scald. Matted turf aggravated dry spot development on many of the afflicted greens. The entrance and deep penetration of water is impeded by a heavy blanket of grass.

From reports, New England had one of the driest years on record. The drought started in the fall of 1943 and persisted in 1944. Apparently fairway turf has deteriorated and weeds increased. Drought conditions prevailed during spring and summer in the Cincinnati and Louisville regions. On the other hand, Iowa was visited with very heavy rains in spring and early summer. Water soaked soil slowed early growth and floods taxed greenkeeper ingenuity to repair the damage.

Grubs of the May and June beetle were

prevalent in most parts of the Midwest. In some sections they did more damage to fairways and lawns than in any season for a decade or more. Before the war the green section staff suggested that arsenic acid and sodium arsenite treatments for weed eradication seemingly controlled grubs when the accumulated concentration approached or exceeded 2 pounds per 1,000 square feet (80-90 pounds per acre). Evidence in Milwaukee and Chicago tends to support this view. The only injury at Brynwood in Milwaukee occurred in the roughs. There was no sign of damage to fairway turf. Fairways have been treated twice each fall for the past three years. Chicago courses that have sprayed roughs and treated fairways systematically during the past three to four years, are singularly free from damage. Arsenic acid and sodium arsenite will never be used primarily for grub control. Benefits in that respect are secondary because several years elapse before a lethal concentration is attained. However, the regular use of arsenicals for weed and clover control will eventually solve the grub problem and also eliminate worm casts.

The results obtained in Chicago and Milwaukee with arsenicals for weed control have been outstanding. In both places their use is no longer on an experimental basis. On many watered courses knotweed, chickweed, clover and poa annua have increased tremendously. There are more plantain, buckhorn and dandelion in unwatered fairways because of the short supply of fertilizer. To transform unwatered fairways into good turf by higher cutting and fertilization is possible. It takes more time than impatient golfers will tolerate. The job can be done quicker and better by using an arsenical along with fertilization and reseeding if necessary. Labor and material shortages will prevent clubs from attacking the fairway problem until after the war. In the meantime chairmen and greenkeepers should become familiar with the pros and cons of this comparatively new development.

Before attempting to formulate a post-war fairway program it would be well to collect representative soil samples and have them tested for acidity and content of available phosphorus, potash, calcium and magnesium. The tests should be made this fall. Then a program spanning several years can be formulated during win-



Grub damage in rough at Brynwood in Milwaukee, but none in adjoining fairway treated twice each fall for weed control. Milarsenite was used at 300-350 lbs. per acre each time.

ter, put in outline form, and placed before the directors or governors for approval with the understanding that it will start when wartime restrictions on labor and material are lifted.

For the balance of this year greens should continue to receive first call on labor and fertilizer. Then, if at all possible, tees should have sorely needed attention. Any time left should be devoted to fairways, traps and bunkers.

All greens should be fertilized this fall, preferably during September. Besides nitrogen, phosphate and potash are needed on greens that have received little or no top-dressing. During a single growing season greens should receive the equivalent of 20 to 30 pounds super-phosphate (20 per cent grade) and 10 to 15 pounds muriate of potash (60 per cent grade) per 1,000 square feet. These quantities can be applied as equal monthly doses or they can be halved and applied twice a year, once in early fall and again in spring. By using larger amounts at any one time, deeper penetration is likely before fixation occurs. The cooler weather in spring and fall minimizes the chance of scorching the grass. Interim feeding becomes a matter of furnishing nitrogen as needed. Clubs possessing reserve supplies of phosphate and potash are fortunate. Others should procure specialty fertilizer having as high content of potash as is obtainable.

Before growth stops this fall, representative soil samples should be drawn from some or all greens and tested for acidity and content of essential plant food elements. Then a sensible fertilizer program can be formulated for 1945.

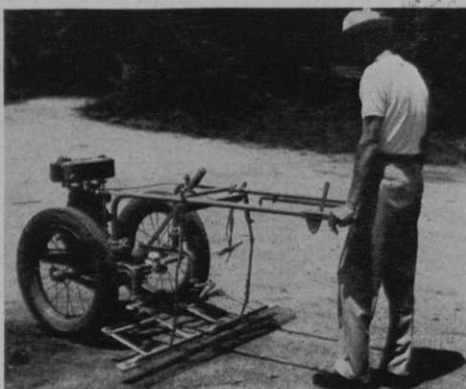
The brown patch season is about over. From now on dollar spot is the disease to guard against. Effective fungicides are

available and should be used regularly to prevent disease rather than wait for attacks and then treat to stop them. The relation between dollar spot and nitrogen has been pointed out before. Nitrogen hunger promotes dollar spot. By keeping grass healthy and in active growth, disease will be less frequent and individual attacks milder. Fungicide will be more effective; the rate can be slightly less, and the interval between treatments somewhat longer.

Clubs in the more northerly regions should not overlook the snow mold menace. Now that calomel and corrosive sublimate are available, this disease can be controlled. The $\frac{2}{3}$ calomel, $\frac{1}{3}$ corrosive mixture should be used at 3 to 4 ounces per 1,000 square feet in November or early December before the first fall of snow. Dry sand can be used to provide the bulk needed to insure even distribution. Besides the putting green, proper adjoining banks and slopes draining onto it should be treated. Greens of seaside or other especially susceptible strains, should be treated again in spring right after snow disappears. The rate then should be 1 to 2 ounces per 1,000 square feet.

Fall is a good time to start removing surplus grass from heavily matted greens. Brushing or light raking before mowing is good practice and will not interfere with play. Drastic treatment is best performed in early spring when grass starts to grow. At that time one can't be too rough. Raking and close cutting should continue until the mat is removed. Then the green should be fertilized and top-dressed. Severe raking in the fall should be done sufficiently early so grass can recover completely before cold weather stops growth.

Immediately after labor becomes more



Don Strand, examines homemade power rake for removing surplus grass from matted greens. Bill Stuppel, greenkeeper, Skokie CC, Chicago district, designed and built it utilizing two Delmonte rakes and an Overgreen.

plentiful, greens should be mowed daily. This is especially true for greens of dense growing, creeping bent. It is impossible to prevent mat formation on them by mowing three or four times a week, especially during the seasons when grass is growing rapidly.

Most turf nurseries have been sorely neglected. A few are in deplorable condition, beyond redemption. Some have a fair stand of good grass but are infested with clover and weeds. These can be revived by using arsenicals to kill weeds, and fertilizer to promote turf growth. The bad ones should be replaced, and planted or seeded with good strains of grass.

Tees should be fertilized generously this fall if there is any permanent grass on them. A rate of 40 to 50 pounds per 1,000 square feet is not too much provided the nitrogen is organic and mostly insoluble; otherwise the suggested rate should be halved. Some tees are in need of a good top-dressing and seeding.

Resodding with turf from a weed-free nursery is one way to restore grass on tees after the war. Another is to kill weeds and clover with arsenic acid or sodium arsenite and re-seed. This is a simpler method which is feasible on tees where play can be confined to one-half the area while the work is in progress. That is from August until play stops that fall.

Labor is going to be high priced even after the war. Courses can't be kept with present skeleton crews. By the same token a force of 20 to 30 men is equally absurd. Plans should be formulated now to make changes needed to permit the maximum use of mechanical equipment. Among other things there should be a critical survey of traps and bunkers. There are some on every course that can be eliminated without affecting play. The ones to be retained can then be put in shape for use. Tees and greens should be eyed critically. The aim should be to mow tees and the aprons around greens with fairway units. A special committee should be chosen to undertake the task. The greens chairman, the greenkeeper, the professional and several members should spend enough time to explore the problem thoroughly and make a formal report. They should enlist the services of a competent architect if many changes are needed. The plan finally approved by the membership should be started at the earliest moment labor can be obtained to do the work.

TURF DISEASE BULLETIN

The Greens Section of the USGA, Beltsville, Maryland, has a supply of a section's bulletin on turf diseases now available at \$.85 a copy. Orders for this bulletin should be addressed direct to the Greens Section, and accompanied by payment in full.

Midland Hills Meets Maintenance Emergencies

While wartime shortages and restrictions are producing varying individual problems in maintenance for each greenkeeper, generally speaking the over-all problem is being solved by the uncanny knack the upkeep experts have developed in making far less do far more. Yet, in many cases acknowledgment of the greenkeepers' loyalty, resourcefulness and substantial savings to his club has been down-right unappreciatively slow in taking the form of financial reward. However, from the way the wind is blowing, this situation is subject to sudden change without notice.

Writing of his experiences at Midland Hills (St. Paul district) CC, Emil Picha, greenkeeper, first points out that the club's grounds department has been operating the past two years on about half the money budgeted in prewar years. Considering the increase in wartime prices for material and labor, it boils down to operating on nearer one-third their prewar annual budget. And, according to Picha, they have made a fairly good go of it.

"We reduced the size of our greens to an average of 4,800 sq. ft., mowing them three or four times a week. We did no top dressing but applied chemicals as needed, keeping our watering and fertilizing at a minimum. Result: Somewhat excessive mat and more 'grain'. Our fairways were greatly enlarged, adding more area to be covered by our biggest production machine, a seven-unit fairway mower. Fairways received no watering or fertilizer. Rainfall was above normal for three years with some drought periods of short duration. Result: Loss of all poa annua which weeds replaced, but bluegrass also increased.

"Players are permitted to improve poor lies through the fairway. Traps weeded once but not raked by crew. Regardless, playing conditions and scoring have been good. While many things have been neglected it will not be difficult to bring the course back to first class condition when labor and money again are more plentiful."

GI Pro in Iceland

Robert O. Waara, Mich. PGA member, formerly at Meadowbrook and Western clubs, Detroit, is a staff sergeant with the Base Command at Reykjavik, Iceland. He reports that golf is comparatively new up there being introduced only ten years ago, but he finds an avid interest in it by the Icelanders. The army boys have built a 9-hole "golf course," cow-pasture style, on the outskirts of the city and it is enjoyed by civilians as well as GIs. Bob is keeping his game in tune, having shot four "30's" and has even made a hole-in-one.