

Preventing Bent Green Damage During Hot, Humid Weather

By O. J. NOER

As this is being written in mid-July the corn crop has never been better because of the hot humid weather but bent greens have not been worse since the memorable season of 1928. From all reports conditions are bad throughout the north. Loss of grass in late June is most unfortunate because there are two bad months ahead. When troubles start in mid-August recovery is favored by longer nights and there is the prospect of cooler and more favorable weather after Labor Day. There will be little or no recovery, and more trouble, if weather stays excessively hot and humid. In seasons like this any weakness in air or water drainage, physical soil condition, inferior strains of grass, maintenance practices and the like, aggravate injury. The immediate problem is to do something to provide players with decent surfaces for putting, but there is the other

bare ground in spots of pure poa annua. Windburn damage was severe at the start of the season in some sections. Then came the unseasonably hot, wet period in late June and early July. Brownpatch was extremely vicious, there was much scald, some chemical burns, and a considerable amount of sickly yellow grass due to a temporary iron deficiency. Root systems were extremely shallow on greens with compacted soil, or with thickly matted turf. The poa annua was shallow rooted as it always is. There was the usual wilting and loss of grass unless greens were watered lightly by hand on hot humid days. Power greens mowers bruised and damaged the grass where they were used on greens when the grass was wilting badly. Cutworms have been numerous and widespread; sod webworms have been bad in some places. There were young white grubs on the courses where the use of lead arsenate has been neglected since the war, partly because of its high price.

In some parts of the country there wasn't any rain this spring. Windburn injury occurred on shallow rooted greens, and on places where the grass was mostly poa annua. Bad damage occurred on greens of compacted soil in heavily matted turf. One course in Milwaukee had no injury this spring, but greens were badly damaged the year before. These greens were aerified twice last year, once in the spring and once in the fall. This spring there were many white roots in the aerifier holes, extending to a depth of 4 to 5 inches or more. They were deep enough for grass to get moisture even though the soil at the surface was dry. Some complained about failure of seed to become established. It germinated but didn't grow. Failure in some cases was due to faulty seed bed preparation. The spots must be spiked enough times to tear out the dead grass. The seed must be in direct contact with soil, otherwise it does not take root after germinating.

Brownpatch Bad

Brownpatch has been bad especially on greens with poor surface drainage. When grass stays excessively wet brownpatch is aggravated by a lot of moisture. Tersan, Calomel-corrosive mixture or Semesan gave best control. Tersan has been the safest. Injury to the turf from using it was not reported but there was chemical burn in some instances with corrosive sub-



This is a severe case of scald on the 13th green at Plum Hollow, Detroit. Chlorosis is bad also. Condition developed rapidly on great many courses in northern states during July.

one of correcting basic faults in order not to have a recurrence in another bad season.

Poa annua was more prevalent this spring than usual, probably because of the long fall with conditions favorable for growth, a mild short winter, and the unusually early spring. Poa annua is sure to wither and die in hot humid weather. Its loss is not noticed when there is plenty of bent grass. There is nothing left but

climate. Grass became extremely thin on greens which had repeated attacks of brownpatch. Then the spots were covered with algae or clover and crabgrass became worse.

The grass on some greens turned a sickly yellow color after heavy downpouring rain followed by hot humid weather. The condition was most prevalent on greens with a high content of organic matter in the soil, either from the use of too much peat or from an accumulation of partially decayed grass in the form of stems and leaves. The combination of readily decomposable organic matter and a water-logged soil produced a weak grass of sickly yellow color. Prompt spraying with not more than 1 to 2 pounds iron sulfate, often called copperas, with 20 to 25 gallons water to an entire green restored normal green color in twenty-four hours time. The secret has been to get absorption into the plant through the leaf. That is why the amount of iron and water must be small. Burning does not occur with 1 to 2 pounds, and even twenty-five gallons of water does not wash the chemical off into the soil.

Need for Hand Watering

The name scald is used to describe widespread damage on greens. It may be



Dry soil along edge of green is reason for loss of turf here. Extent of damage demands corrective measures immediately. Forking, aerifying or drilling with turferator and possible use of sub-irrigator will speed recovery.

caused by a number of things; loss of poa annua, repeated attacks of brownpatch, puddled soil due to poor surface drainage, the presence of tree roots, localized dry spots and faulty watering are the common ones. A green scum frequently appears on the scalded area. It is due to algae. They are green plants and do not grow in a green so long as the turf coverage is sufficiently dense to shade the soil. When

the algae die there is a black skin-like covering over the surface. It seals the soil and retards or prevents recovery of the grass. Algae can be killed by dusting with hydrated lime. Not over 2 to 5 pounds per 1000 square feet is needed. More than that may scorch the turf. The hydrate should be applied in late afternoon and should not be watered in. Amounts of water which keep the algae infested spots continuously wet should be avoided. It will make the algae worse. A better plan is to hand water



Injury to turf along edge of this green has been caused by abrupt turning of power mower. Most damage of this type occurs from mowing when the grass is wilting.

those greens lightly in early morning and several times during the day to give the reviving grass a little water.

Localized dry spots have been bad. They were aggravated by thickly matted turf. These spots have a metallic bluish color and footprint badly. A sprinkler will not correct them. Deep forking followed by several drenchings with water, and the use of a tree sub-irrigator are the customary ways to restore moisture in these spots. However, when there are many of these spots it is impossible to fork all of them promptly. Then the best plan is to hand water during the daytime to keep the grass alive while soil moisture is being restored by deep forking.

From now until cool weather in September it will be necessary to do a lot of hand daytime watering, sometimes three or four times a day, including Saturday and Sunday, to keep the grass alive. This is especially true of greens with shallow rooted turf. It may be necessary to apply a very little water even after a downpouring rain if the upper soil becomes dry. Those who seed bad spots with red top to get temporary coverage will have to do a lot of spot

(Continued on page 57)

The accompanying chart will give a clear idea as to the number of hooks and slices and the number of trapped balls that went into the trap on this hole at the 230-240 yard mark from the tee.

According to our statistics there is a difference of seven yards in the average drive between the test made in 1940 at Canterbury and the test made in 1949 at Medinah.

Variable Factors Considered

The machine tests made for the USGA indicate a slight increase in the ball which could account for this difference. There are other variables that might have a bearing on the difference such as the slight differences that might have been brought about by the velocity of the wind. This was pointed up the second day of the 1949 tournament when, during a dead calm, a check was made on 20 players who had played the day before. During this period with no wind, the drop in yardage was about eight yards per player. This of course would not account for the difference between the Canterbury check and the Medinah check for in both cases there was an aiding wind. The length of the cut of the grass and the hardness of the ground could also be variable factors, but from the appearance and feel of the turf it is our opinion that this variation was very slight.

It may be possible that the longer hitters are now qualifying for the championship in the various sections of the country; although this theory should not be given too much credence. The design of the hole might tend to offset this difference slightly, although it is our opinion that with these two particular holes that this is not the case, as both holes adapted themselves to free lusty swings. The trap on the left at Medinah was more effectively placed, but we doubt that this had any bearing on the results of the survey.

It was interesting to note that as far as the low scoring players and the name golfers of the country are concerned, they are all in the big-hit category, as can be seen by the accompanying graph.

Professionals Acclaim Golf Equipment Inventory Form

Golf Equipment Inventory forms prepared by the National Golf Foundation for club professionals have met with popular acclaim from all who have used them. According to the many letters received the forms make possible a record of the member's playing equipment which has long been needed. Al Braak, professional, Elmwood CC, Marshalltown, Iowa, writes:

"Your Golf Equipment Inventory sheets have made a hit with my members and with several insurance men also. They

have followed up with a letter to their policy holders advising them to have me make a valuation at this time and file it with their insurance papers. Several large Country Club fires in Des Moines the past few years have made all members of Country Clubs in this area insurance wise."

The form enables the professional to provide members with information on the extent and condition of equipment.

The sheets are made up in pads of 50 at 75 cents each or 3 pads for \$2.00 and may be obtained by writing to the National Golf Foundation, 407 S. Dearborn, Chicago 5, Ill.

PREVENTING BENT DAMAGE

(Continued from page 33)

watering on hot days to prevent the young grass from withering and dying. Watering once a day is not enough.

Many clubs would have been wise to close the course for play for a half day when rain on Friday or Saturday made the surfaces excessively wet. In some instances rain stopped at nine in the morning and then players came in droves. No wonder there was no grass around the cups.

Bare ground on some collars or the outside edge of the putting green was due to the bruising action of the power-driven drum on the mower. Damage occurred from mowing when the grass was wilting



Many greens which suffered severe damage two years ago showed no signs of injury this year. This is attributed to a regular schedule of cultivating. This sample shows long grass roots in holes made by drilling green with turferator.

and from making a quick turn. Several greenkeepers stopped their men from mowing when the grass was wilting and were wise in doing so. Several blame corrugations on the drum. They may be bad in the odd spell of severe weather.

Chlordane has been very effective in controlling cutworms and sod webworms.

It does a job on ants, also. Chlordane is safer in hot weather than lead arsenate.

There were several instances of no dam-



This soil sample shows roots starting in hollow tire holes. Cultivation of greens in spring and fall with Aerifier or drilling with turferator may prevent recurrence of injury to greens caused by prolonged hot spells.

age this year where injury was severe two years ago during the hot spell in August. The greens were cultivated spring and fall

with an aerifier on one course, and at the other the greens were drilled six times with a turferator. Plugs taken from both of them showed long white roots in the aerifier or drill holes.

The tendency is for greens to have shallow roots. Soil compaction from traffic, mower equipment, etc., is one cause. Poor soil from imbedded layers of matted grass, from the use of too much organic matter, etc., is another reason. Soil cultivation with an aerifier or turferator in fall and again in spring will do more than anything else to provide better roots.

From the fertilizer standpoint, greens should get enough phosphate and potash to replace the quantities removed in the clippings. On many courses the tendency has been to use phosphate to excess and to apply too little potash. Too much phosphate may be partly responsible for the iron chlorosis. Greens should get about 5 pounds actual phosphoric acid per 1000 square feet and 10 pounds actual potash per season. Then it is a matter of using enough nitrogen to maintain growth.

Mention has been made of tree roots. Greens which are surrounded with elms, poplars, willows, etc., should be examined for tree roots. When they are present in quantity, trenching between the green and the trees is advisable. One face of the trench should be faced with sheet metal before it is back-filled with soil.

Faulty drainage should be corrected be-

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fore another season starts. Pockets which hold water should be eliminated. Surface run-off is the quickest way to remove surplus water. Tile drainage is advisable on greens with heavy compact subsoil. The herringbone system should be used and laterals should be spaced about 15 feet apart. Seepage is often bad in greens adjacent to abrupt slopes. The tile lines should be placed between the green and the hillside slope. The trench must be filled up to within four to six inches of the top with stone or gravel to trap the water and lead it down to the tile. The tile without the gravel backfill will not stop seepage.

PGA URGED TO TAKE STOCK

(Continued from page 29)

questionnaire, I will be glad to make up sample questionnaires for them.

Obviously, serving as assistant to a PGA pro for three or five years should not admit a man into organized golf. He should first be forced to pass a rigid examination. There are many aspiring to be pros who could never pass a reasonable examination even in ten years; but there are others who could do it in a year or two. These men, if they really know their stuff and have the character,

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