Getting Greens Turf That You Can Control

By FRANKLIN HAMMOND

It is generally accepted that we must build into the green all the qualities it should have to maintain itself and to supplement this with as few as possible extra maintenance operations. If we place in the soil materials which when acted upon by the (as we hope) correct weather conditions to produce the results desired what will be the effect if the opposite conditions prevail? If this adverse weather lasts for a long period and is suddenly replaced with the hoped for conditions what then?

For example — there has been built into the green large amounts of compost and other materials so that we think the green has a foundation satisfactory to sustain growth for a long period. The weather happens to be cool and dry all spring. Naturally we have tried to induce growth with supplemental methods with only partial success. These conditions could prevail up to warm weather. Suddenly the weather changes to a hot very wet condition lasting for a long spell. We have an oversupply of moisture, high temperature and the hot part of the growing season at hand. It requires little imagination to realize what will happen to the vegetative material in the green plus the action of the supplemental feedings we have applied earlier in the season to induce growth, and which have not had the correct weather conditions to use up the material. Fast soft growth is started and there is no way to check it. The turf will be susceptible to every grass pest in the neighborhood. We have brought on the very condition to be avoided. Most of the protective measures we may try will have a tendency to increase this growing spurt while checking the pest.

Keep Greens in Balance

If we can build a green which is always in balance between growing and standing still we will always have control of its growth which means its condition. Greens can be constructed so that this control always remains with the greenkeeper not with what has been built into the green. This qualification can be built into the green without sacrificing any of the desirable specifications.

We might compare this condition with a steamship at rest on the water. As long as it is without motion ahead or astern it is out of control of the crew. Give it a little motion ahead under its own power. As long as it moves under the direction of those in charge it is under control. If forward motion is too rapid it can be checked by reducing the power. Should the engine room crew stoke the boilers to the limit and quit then the deck crew will lose control and have to wait for the driving force to burn itself out. If a large enough obstruction (pest) gets in the way at this high speed, it's too bad for the ship.

The requirements of a golf green are:—

Pleasing appearance.

A surface suitable to hold the shot to be played to the green. (Fast or slow.)

Smooth even texture both in turf and soil.

Playable at all times. (Wet or dry.)

Freedom from pests.

Healthy.

The general belief is that a fast green is dry and hard and a slow green is soft and wet. I cannot agree that this is so. The texture of the surface of the grass can be so modified that these qualities can be given the green without affecting the soil.

A hard dry soil surface with the standard type green construction would mean that the whole green is dry to a considerable depth. If this is so then the whole function of the soil turf is upset. Compost will not break down to help feed the grass, fertilizers will lose considerable of their value, soil water for the plant roots will be at a minimum. Packing of the soil will be increased and other troubles brought on.

Water will be the chief material used in controlling a green in this condition. With much water-holding soil below the surface of a contoured green the watering operation will be complicated. No matter how well the soil may have been mixed and spread when the green was built there will be some uneveness in the water holding capacity of that soil. High places will be particularly hard to wet and hold moisture of the same quantity as the low parts. For this reason the surface will be uneven in softness. The grass in the hollows will be growing faster than on the high spots thus increasing the softness in texture at these

points. By trying to maintain uniformity of texture by the use of water on such a green we are bringing about just the wrong conditions.

When soil below the top inch of the green is sand, a little water, either more or less, does not affect hardness of the surface one way or the other. A thin layer of sod, on this sand base, consisting mostly of roots and stems of living plants with just enough sandy loam to bind them together provides a growing strip of sod which will absorb a small quantity of water quickly. Hard dry spots in this sod can be watered without affecting other areas and growth can be maintained more uniformly over the whole surface. Control of growth is in the hands of the operator.

Velvet bent can contribute to the texture of the green in another way. When grown on the "dry side" and cut short it produces short stiff upright blades of grass and short dry overground stems which have the effect of making a stiff turf and a hard surface. On the other hand if this grass is grown rapidly it produces soft blades of grass which are inclined to lateral growth giving a soft texture to the surface. Its thick fibrous root system, when growing in sand with plenty of moisture adds to the softness of the surface.

Control of Softness by Grass

Making a green soft to hold a pitch shot by the use of wet soil is not correct either for the golf shot or the turf. The proper material for this purpose is grass. The soil condition should remain as near constant in its growing capacity as possible. Texture with regard to softness should be the function of the grass alone. Control of this factor is entirely in the hands of the greenkeeper and can be changed at will.

The green will be playable after heavy rains as soon as the surface water has drained away. The sand base will remove surplus water from the soil at once and no damage will be suffered from packing by traffic while the green is wet. No more water will be required to maintain the green than is required by any other green. Applications of water may need to be more frequent but will not require any more time and labor. Heavy night or early morning watering will not be needed. Mowing three times a week wil keep the grass surface smooth and uniform. Daily mowings are not required.

Freedom from pests is a relative quality. Some grasses are more free of certain pests than others. Likewise some strains of a grass are more resistant to certain diseases than others. Velvet bent is very resistant to large brownpatch but susceptible to dollar spot. The health of the turf has more to do with pest control than any other factor. Healthy grass is resistant to insect and disease troubles and recovery is more quickly made if the condition of the turf is good. For example, velvet bent will recover at once from dollar spot if a light application of sulphate is made as soon as the disease is detected on the turf. This is not so if the green is soft and wet but if the turf is in good health and has been maintained on the dry side of the moisture factor it will work every time.

Sandy soil is a poor place for most insects (except ants) which work in the soil. Insects prefer soils with more moisture and food in them. Acidity can be corrected much more easily in the soil if there is a very small amount of heavy loam. Less arsenate of lead is required for soil protection. No more fertilizer is required for the sand base green and we may be fairly sure that whatever feeding we give the green is used not lost by delay in availability.

The health of the green is always in the hands of the greenkeeper. He will be able to supply the various materials needed at will because the thin turf will respond without delay.

Sodding the Green

The green can be sodded and put in play within a week to ten days after the sand base is completed.

The sod pieces used must be identical in every respect and must meet some very exact requirements. They must be accurate in length, width, and thickness; particularly thickness. The sod must not be rolled for transportation. Rolled sod stretches so uniform laying cannot be accomplished. Workmen must be instructed to hold the pieces of sod flat when they carry them. Holding a sod by the edge or corner will distort its shape and cause delay in laying. If cut 12½" x 24" x 1¼" thick it will handle easily and stay in place after being laid. Uneven lengths upset the routine of laying. All traffic over the base should be on boards or planks to preserve the grade of the base. By using two sets of plank the workmen will not have to dodge each other. The lines of laid sod must be kept straight. Curving lines will necessitate stretching the sod or leaving gaps to be filled in by small pieces. Laying the long dimension in the line of play is good practice. Each piece should be firmly fitted to the others, without any hollows or high spots which will make trouble and expense later. Do not cover the joints with loam while laying the sod. It produces a messy surface when the green is watered and rolled. A topdressing at a later time will take care of filling any cracks which may develop.

The whole green should be sodded and the edges finished before rolling. There

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Not to be outdone by the males, the distaff side of the New York City Police Department organized its own golf team last season and competed against a feminine contingent from the Sheriff's office led by the comely Helen Gilligan, a member at Plandome.

Walter Grego, Bayside Links pro, was host to the inaugural party of women police golfers and all agreed it was a pronounced success. Mrs. Irene A. Peters, Mrs. Gertrude Winterhauter and Mrs. Marion C. Mullen are the officers of the organization that intends to conduct six tournaments during 1948.

"We have had the police golfers here every year ever since we opened up the course," said Grego. "In fact, the tournament is one of the big events here, rivaling in interest the annual World-Telegram Hole-In-One tournament."

So, with policemen, firemen and thousands of other city employees flocking to the fairways, Father Knickerbocker's boys and girls should be getting their share of the sun rays and develop into A-1 divot diggers.

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should be enough men to sod the entire green in one day. A heavy roller is required. If a three unit fairway roller is available it is satisfactory, provided the tractor is equipped with rubber tires. A power roller such as is used for tennis courts or light sidewalk work is ideal. There must be weight enough to press the sod firmly into the base. The weight will not harm good quality sod. Plenty of water should be applied just ahead of the roller. Do not soak the sod first but deliver water immediately ahead of the rollers so they push a wave of water ahead of them. Roll lengthwise and crosswise, once each way. More rolling than this may displace the sod pieces.

The green should be puddled several times on the following day. Watch closely for surface runoff of water. It may seep between sods and wash out the sand base. Let up on the amount of water applied each day for four days when the green will be dry enough to roll with a hand roller and topdress. Then apply a heavy dressing of topsoil, not compost, and mat it in with a steel door mat. A liquid feeding of sulphate should be made and watered in well. Mowing starts the day after feeding. The greens mower should have the front roller attached to prevent scalping and set at three-eighths of an inch for the first cutting. The height of cut should be reduced in stages but as soon as possible to ¼ inch. Topdress again when the grass is growing well. A green so sodded should be ready for play a week after laying with first class sod if the work is done carefully. Sprinklers which will cover the whole green at one setting are the most satisfactory means of applying water. They give uniform coverage.

Velvet bent is a very fibrous rooted plant. As a green becomes older the root mat, and the partly decayed roots of other years, gradually choke the soil when the grass is growing on a deep rich bed of loam. The mat of roots and stems may be very thick, reaching to a depth of three inches below the surface. It fills the soil so completely that it is difficult to get water down through the green to the growing roots. Bacterial action is retarded as the years

go by, because of the accumulating residue of decomposed vegetation.

The sand-based greens are very open in texture and will not fill up with dead roots faster than soil organisms can destroy them. New plants are constantly being established on the surface. If the green is regularly topdressed there will be a continuous development of new grass plants throughout the growing season.

I am not convinced that deep roots are essential to the health of the grass if food and water can be secured close to the surface in amounts sufficient to sustain growth. I am sure they can be supplied as needed. We are operating a manufacturing plant, not following crop production methods, and can control the growth of the turf. Weather conditions in New England are constantly changing throughout the growing season. If we can supply food and water effectively to the turf we can meet these changes in weather as they come.

The question of cost will be raised by many. Fertilizer requirements will be less than for other types of greens, because velvet bent requires less food to maintain it in good health than most grasses. The amount of water required will be less than for the average green because we depend upon frequent, light waterings. A good sprinkler system cuts the cost of watering, particularly if the watering system is designed so one setting of the sprinkler will cover the whole green. This type of equipment has been so well developed that such a design is possible. Heavy night or early morning watering will not be required. Mowing will cost less than for creeping bent because three mowings a week will keep the surface of velvet in first class condition.

The cost of construction will be way below the cost of building the customary type green of today. It will be possible to locate greens on sites where other types of construction would be impossible, or prohibitive in cost.

Weed control is positive. There is no need of tolerating weeds in properly managed velvet bent turf. Proper height of cut and good condition of turf are the controlling factors in weed regulation. Weed seed in topdressing, or crabgrass seed carried on to the green will not germinate and grow. This seed is buried by the topdressing. Before the seedling has a chance to become established it is smothered by the dense new growth of the velvet bent. The only time weeds have an opportunity to develop is the first season after seeding when the stand of grass is thin, or when the turf becomes unhealthy due to neglect. The remedy in either case is to improve the health and condition of the grass.

New plantings will become weedy if cut at ⅜ of an inch or higher and maintained at this height of cut. By lowering the cut to ¼ inch the weeds will depart. I have tried this program many times and the results have always been the same. Several times a nursery seeded in August has come up as a solid bed of crabgrass with a few spears of velvet showing around the edges of the crabgrass plants. One grower told me that I was wasting time letting the crop occupy the nursery. The next season the same man was pleased to accept some of that same sod to patch one of his greens. There was not a weed in it and we did not weed the nursery.

Topdressing Material

Open field top soil of light sandy loam is recommended. The topdressing material should meet these requirements:

It should level the surface of the green.

Provide an open soil in which new grass plants may root and which will not be congested with the accumulation of dying plants and roots.

Make the soil open to the easy passage of air and water.

There is no need of elaborate methods of sterilizing the soil to eliminate weeds, or of building up expensive compost piles. It may be true for other grasses but is unnecessary for velvet bent greens.

An open field of light sandy loam can be used as an almost inexhaustible source of topdressing material if correctly managed. When soil is taken from the soil bed the entire layer of top soil should not be removed. Some of it should remain to help make new soil. After the required amount of dressing has been removed the area should be used as a dumping ground for all kinds of vegetative material, grass clippings, leaves, old sod, and the surface trash cleaned from gardens each spring and fall. If this material is harrowed into the soil several times a season and a cover crop of rye is seeded in the fall the area will supply topsoil for many years.