

BOWLS SOUTH AFRICA GREENS STANDING COMMITTEE

GRASS CLIPPINGS 4

October 2005

“What’s in a name? A rose by any other name will smell as sweet”

Yet ! for a number of years some green keepers (GKP) have questioned the use of the word “Spring Treatment” as opposed to the term “ Annual Renovation “ to describe those procedures which the GKP has to carry out each year to prepare our greens for the coming season.

Their argument, quite rightly, is that the use of the word “Spring” does limit the whole operation to a certain time of the year whereas there are many reasons why it should not be performed in “Spring” and as “renovation is described in the Dictionary as “to restore to good condition or vigour” it does seem the more apt description.

As long as the GKP provides a reasonable bowling surface throughout the year Mr. Average Bowler is happy but when the GKP suggests that he should take out the green(s) for their annual renovation and Mr. Average Bowler sees himself sitting at home doing domestic chores on a Saturday afternoon then it becomes a major issue and he will spend his time convincing the GKP that he should curtail his programme to minimize the time the greens are out of commission.

We all agree that during the year various things happen to the grass covering the green which, if left untended, will eventually lead to a gradual deterioration in the quality of the turf and playing surface. With each passing year this deterioration is exacerbated by the fact that remedial action was not taken annually or that the green had not fully recovered before it was opened again.

The actual changes which might precipitate this deterioration are -

1. WEAR AND TEAR

Wear and Tear are constants on a bowling green. From the moment the GKP opens the green for play the turf will be subjected to damage brought about by the players and the machines the GKP uses to prepare the green.

The most constant “damage” occurs around the mat – more commonly referred to as “ mat wear” It is not only a question of the player who is actually delivering the bowl but is also the place where the players stand, where they write on the board and where they “look for something in their bags” – have you ever noticed how often women “vroetel” in their bags while playing bowls.

Assuming the greens are not over utilized and the GKP moves his rinks regularly he usually has enough time, during the growing season, for the grass to recuperate before that part of the green is used again. But, as autumn and winter dormancy sets in worn and weak areas will appear on the green.

What the average bowler in the RSA does not realize is that we in Southern Africa and Australia are the only major bowls-playing countries where bowls is played outdoors in the winter. This means that whereas most Green Keepers (GKP) can cope with wear and tear in the growing season it takes a considerable amount of expertise to take a green successfully through the winter when the damaged leaves cannot be replaced or repaired.

At some time or other the green will need to rest

2. PROLIFERATION OF THE MAT

To most bowlers, grass is grass, and its appearance on our sporting surfaces is taken pretty much for granted.

It is therefore a rather sobering thought that of the 7500 species of grass we have on this planet of ours only two dozen of these specie form contiguous plant communities tolerant of mowing and traffic which, therefore, makes it possible to adapt them for use as sports turf.

The grasses used on our Bowling greens are selected because of the fact that they form a mat which provides an even covering over the whole green. This occurs because 80 % of the growth is lateral or horizontal and only 20% of the growth is vertical.

Therefore apart from using the horizontal mower to curtail the vertical growth of the grass the GKP must use the vertical mowers to cope with the proliferation of the mat.

In Grass Clippings 2 we took note of the fact that the grass plant has to produce it's own food in the form of carbo-hydrate. This process can only take place in those leaves which are exposed to sunlight – most of them lie in the mat. Thinning out the mat must be done with the utmost circumspection.

Control of the thickness of the mat is one of the most important aspects of good greens management.

Another possible reason for the mat getting thicker is that when the green is mowed a proportion of the cut leaves do not fall into the bin and are left on the green. These dead leaves will lie in the mat and can become a haven for fungi and insects.

Whatever the GKP has done to his green during the year it is important that once a year **the previous years growth must be removed.**

3. COMPACTION

To understand compaction it is necessary to understand the structure of the soil and soil texture.

Soil is composed of millions of particles. These particles may vary in size from the larger 2 - 3 mm particles down to particles smaller than 0.02 mm. To make it easier to describe soil it is divided into categories according to the size of the particles e.g. Coarse Sand = 0.5 – 1.0 mm , Fine Sand = 0.15 – 0.25 mm and Clay smaller than 0.02 mm.

It must be appreciated that while the particles in the soil provides physical support and anchorage to the grass, the GKP is more interested in the “pore” spaces between the soil particles. Not only are the roots to be found in these spaces but there must also be enough room to provide passage for water ,nutrients and air (Oxygen). Even the micro-organism (Bacteria and Fungi) which help to break down the fertilizers (Nutrients) into an acceptable form will be found in these spaces

Under the influence of the forces of gravity the water applied to the surface passes through these spaces and "drags" fresh air (oxygen) from the surface to fill the vacuum left by the water

As both the roots and the micro-organisms cannot survive without oxygen it follows that the roots and micro-organisms will only be found at that level in the soil where oxygen is still available

It is easy to understand that if the soil is composed mainly of larger particles then the spaces between the particles will also be large. But, if the soil is composed mainly of small particles then the pore spaces will be minute and slow down the passage of water, air and, nutrients

Compaction can be defined as the condition resulting from the compression of the particles which make up the soil into a dense mass obliterating the spaces between these soil particles

On a bowling green (**especially on the perimeter**) the compacting forces – players and machines ill inevitably compress the particles together thereby reducing the size of the air spaces or even obliterating them.

In bowls compaction is mainly confined to the surface layer to a depth of about 30 – 50 mm

The following statistics on the forces exerting pressure on a bowling green are significant -

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| - | A standard greens mower | = 2.0 Kgm / sq.cm. |
| - | A standard 1.8 m roller filled with water | = 2.0 Kgm / sq.cm. |
| - | A player weighing 75 Kgm | = 5.7 Kgm / sq.cm |
| - | A Roller Polisher | = 0.8 Kgms/sq.cm. |

As high quality sports turf surfaces are dependent on the correct relationship between the moisture and air being maintained within the root zone any diminution in the pore spaces will upset this delicate balance. Roots and micro-organisms which previously had penetrated to a depth of, say, 100mm now suddenly find that the oxygen is no longer available at that level. The roots die or retract to that level where the oxygen is available, say 30 mm. The ability of the roots to provide sufficient water and nutrients to the leaves is now seriously threatened.

Other plants e.g. Weeds which did not have a chance while the grass was growing vigorously can now compete on equal terms with the grass - The ecological responses would be a dramatic shift to the compaction-tolerant weeds and the grass would suffer.

In those parts of the country with a high percentage of clay (e.g. Durban) shallow rooting, can result in the roots falling victim to drought, heat and diseases plus further compaction.

A GKP should look at his green and see if there are areas where the weeds seem to grow more easily - those areas are more likely to be compacted

From the above it is obvious that compaction is an insidious process which poses a serious threat to the health of a green yet it is amazing how few GKP's take the trouble to ascertain the classification of the soil (Sand or clay) or check the depth of the roots regularly.

The most important thing to remember is that once soil has become compacted it is impossible to "un-compact or loosen it. The GKP can only create new channels for the air, water and nutrients

COMPACTION MUST BE RELIEVED ANNUALLY AND NEW AIR SPACES CREATED

4. INDENTATIONS OR BUMPS

It is inevitable that during the year the playing surface becomes dented – every club has the odd player who "fires from the hip" and leaves a few indentations on the green wherever he plays. Faulty greens management might also leave the odd bump on the green.

Both the above could cause the bowl to bounce and divert it from its course.

BUMPS AND HOLLOWES MUST BE ELIMINATED AND SMOOTHED OUT

5. ANALYSIS

From the above it is obvious that a number of unrelated changes take place on the green during the year.

If left untended each one would, on its own, or, in combination with the others eventually lead to a gradual deterioration in the quality of the turf and the playing surface

Each change has its own remedy and could be applied on its own but it has become the custom to carry out all these procedures at the same time – the whole operation being called "renovation"

Before discussing the timing of renovation one should first consider what is involved:

- Wear and Tear – Rest – it is most important that any weak or bare patches should be replanted or given the opportunity to re-cover before the green is opened again
- Proliferation of the Mat – Removal of last years growth – usually by Scarifying
- Compaction – Aeration in order to create new air passages to enable the roots to penetrate to the same depths as before. This normally would involve – Hollow - tining, verti- drain or Hydro-tining
- Bumps and Hollows – The surface must be smoothed out again – Top-Dressing

The whole operation can actually be divided into two –

- **The Active Phase** – this is the period in which all the procedures are carried out.
- **The Passive Phase** – This is the period after top-dressing has been completed during which the whole club waits for the grass to come through so that play can be resumed

If the club has all the necessary equipment or has access to a contractor who can carry out all the above procedures quickly then the active phase need not last more than a week. If this is not the case and the GKP has to struggle with a small scarifier and has to do all the hollow-tining by hand then the active phase can last more than 2 weeks.

The length of the passive phase will depend on the time of the year. Renovation done in August/September will have a long passive phase (easily 8 – 10 weeks) because the roots are not active at that time whereas a green renovated in November or March when root growth is at it's maximum will limit the passive phase to 3 – 4 weeks.

Another thorny question would be whether all the greens should be taken out at the same time or one at a time.

Because most of the clubs in the major cities inland enjoyed municipal assistance all the greens were done at the same time – usually in August. At the coast where the municipalities were not so well disposed towards the bowling clubs renovation was done by the clubs themselves and with the preponderance of retired members there was no ways that they were going to countenance all the greens being out of commission at the same time.

It was therefore well known that, in terms of membership, a two-green club in Johannesburg would be the equivalent of a three-green club at the coast.

It is up to the GKP, in consultation with his committee, and bearing in mind any major club events which might involve the use of all the greens, to arrive at a date(s) for renovation which would give him ample time to ensure that the greens are fit for play without having to endure the pressure from the members who want him to open the greens prematurely

In our next issue we will be discussing all the factors relating to the timing of renovation and perhaps resolve the question of the name.