

## Grass Clipping - 7

### **PART TWO**

#### **RE-PLANTING A BOWLING GREEN**

Re-planting a bowling green should be a common occurrence in the RSA but it is actually a rarity. Although 90% of our greens qualify to be replanted very few clubs (or GKP's) are prepared to undertake such a major operation.

In Australia greens are replanted regularly - mainly because their green has been invaded by an unsuitable grass variety or they might have discovered a more suitable strain which they are keen to introduce.

In the RSA there are many reasons why a green should be replanted

#### **OTHER REASONS FOR RE-PLANTING**

## **1 Levels**

It is surprising how few Club Green keepers know whether their greens are level or not and yet variations in the levels can have such an enormous impact on the reliability of the draw - especially on a fast green.

It has always surprised me how easily our players accept inconsistencies in the draw and weight without complaint (unless they have lost the game)

In previous years some of the Municipalities levelled the greens every year with renovation. Now that this service has been discontinued many clubs have not attempted to level their greens again.

Each club should have a level profile of their greens This should be done by a competent person and plotted at intervals of not more than 2.5 m

For International matches a variation of up to 2.5 mm over 2.50 m is acceptable. In the RSA we allow variations of up to 3.00 mm over 2.50 m for our Championships...

A green can be levelled by Rails or Wires stretched across the green or using a large Jackson Scarifier (Used mainly in the Border area) to remove the high spots

If the variation in the levels is not more than 10 mm then the green can be levelled within one season.

It is widely accepted that it is easier to level a green devoid of grass than to level it when there is grass cover.

A variation of 40 mm over the whole green with a gradual slope is acceptable as long as there are not acute variations over a short distance .

What the club must ask itself "Can we level this green within one year or not: If the answer is "no" then the club must seriously consider - removing the old grass – levelling the green and then re-planting. It is the quicker alternative.

## **2 Wrong Grass**

It may happen that a club originally planted a certain grass only to find after some time that the grass is not performing satisfactorily If another acceptable grass is available and suited to the local conditions then the Club might decide to re-plant the green..

One must accept the fact that we have not, yet, discovered a grass which meets all the criteria for a Bowling Green grass.

In other parts of the world there is a continuous search for new strains or new hybrids which can be developed.

It is only recently that a nursery in the RSA has actively joined the search for new strains with a fair amount of success

## **3 Wrong Soil**

We are well aware of the fact that many of our greens were originally planted by levelling a piece of ground and planting whatever grew in the vicinity. It might take the club a few years to realise that the soil is unsuitable and incapable of supporting the vigorous growth required for a bowling green. The commonest problem would be bad drainage because the soil is too clayey. Attempts by the Green keeper to introduce new sandy soil while there is still grass on the green have too successful and the club might have to resort to a much more drastic solution – that of removing all the grass and tilling in sufficient suitable sandy soil to reduce the clay content and improve the drainage with a rotovator

## **4 Changed Circumstances**

It might happen that conditions have changed since the original grass was planted on a green. These will probably be due to changes in the environment. The commonest example would be where the club originally relied on Municipal water for the greens . Due to frequent restrictions on water use and uncertainty as to how long the Municipal water would still, be available the club started using borehole water which might have a high salinity. The original grass might not be able to tolerate such a high salinity and the club might have to resort to planting a saline-tolerant grass like Paspalum.

On rare occasions it might happen that the Municipal supply has changed. In the same way as a club using borehole water should regularly have the water tested for salinity or other impurities so should the club have the Municipal water tested if they have embarked on a new water scheme

## 5 Infections

It can happen that a club has been invaded by organisms for which there is no cure and the only remedy might be to fumigate the whole green and re-plant

## 6 Other Considerations

Thatch Formation However particular the Green keeper might be about removing last years growth there will still always be a build-up of some thatch in the upper layers of the soil. This will thicken up the mat and affect the speed of the green. It is advisable to remove that thatch every 6-7 years by removing the upper layer (about 20mm) of the green with a sod-cutter. When contemplating whether a green should be re-planted or not the presence of this thatch could influence the club in favour of re-planting.

Compaction – Compaction is a constant threat on any bowling green especially if the clay content is in excess of 10 %. One cannot “un-compact” a green which is already compacted. If the club is considering re-planting the green then an additional argument in favour of re-planting would be that it gives the Green keeper an opportunity to till over and loosen the soil.

Green keeper Expertise There is no doubt that managing a green with one or more of the above deficiencies require a much higher level of expertise than managing a green which has been laid down correctly and planted with a single variety of suitable grass. It is difficult enough for our Green keepers to keep up with modern trends without loading them with additional burdens.

## Conclusion

It is obvious from the above that there are a number of reasons why a green should be re-planted. Usually there is more than one on the same green which make it easier for the Club Committee to come to a decision.

While there is no doubt that it is a major operation it does not have to be expensive if the members are prepared to throw in their weight behind the Green keeper.

## " GRASS CLIPPINGS 9 "

To re-plant or not to re-plant is a question which should be occupying the minds of many Club Committees. After all about 90 % of the greens in the RSA qualify for re-planting. In "Grass Clippings "8" we examined the circumstances under which a Bowling Club could consider re-planting their greens.

The advantages were well tabled and it only now remains to study the disadvantages.

These are - -

- Can the club afford to have a green out of commission for up to 4 months
- The financial implications -
  - If the work is undertaken by a contractor.
  - If the work is done by Club Members.

Having decided to proceed the club must still decide on a number of issues

- 1 Grass - Which grass to Plant - will be discussed later
- 2 Planting Height of new Green

- Ditchboards- As a result of top-dressing every year the green is usually higher than the ditchboards. The GKP either has to lift them or install new ones.

When planning the replanting of a green it is important that this be taken into account.

It is important that the "new" green should be completely level which means that the ditchboards should also be level - if they are not level - then they should be removed or replaced at a level which is 8.00mm higher than the proposed planting height

- Upper 20mm - In an old green there is always an accumulation of "muck" (mainly undigested organic material) in the upper 20 mm of an old green. This consists mainly of husks of roots which have not been digested.

As the speed of a green depends, to a certain extent on the "hardness" of the upper layer the presence of these husks will "soften" the green and slow it down. The upper 20 mm is also the site of maximum compaction and removal of that 20 mm will enable the GKP to plant the new grass in an environment free of any compaction.

Note - When planning the re-plant the removal of the upper 20mm should be part of the equation.

After the upper 20 mm has been removed the

Planning Committee must determine whether the grass can be planted directly onto what is left or whether new soil should be brought in (20 mm of soil +28 cu. m.= about 6 X six ton loads)

### 3 Timing

By using a cloth like crogard to cover the whole green the newly planted grass will grow at any time of the year eg. a new green can safely be planted in the winter. As the festive season is normally the period of lowest usage it might be advisable to include the December / January period in the whole operation - bearing in mind that a newly planted green must be "played in" before the onset of winter.

It is up to the Planning Committee to decide when to start the whole operation.

## **The Operation**

### 1 The Top 20 mm

If a nurseryman dealing in "Instant Lawn" is available the easiest alternative is for him to remove the top 20 mm and take it away at no cost to the club.

If nobody wants it then it must be left until all the grass has been killed off and only then removed.

### 2 Killing off the Existing Grass

The safest method is to use a substance which will sterilise the soil for a period instead of using a Herbicide like Glyphosate (Round Up) which only kills off the grass and weeds and tends to allow some of the "killed" grass to return at a later date.

The grass should be killed off by applying Herbifume in liquid form and watering it in very well or by arranging with a contractor to use Methyl Bromide gas in which case the whole green must be covered with a tent.

The soil remains sterile for at least 3 weeks and this period should be used to level the green and generally to prepare the green for planting.

If the top 20 mm has not been taken by a nurseryman then it must be removed now and sifted for later use to level the green or later as top-dressing.

If new soil is to be brought in it should also have been sterilised when the green was done.

The GKP must have 10 cu.m. of soil available for top-dressing after the grass has emerged.

Any new soil brought in must be of the same texture as the soil in the upper layers of the green.

At this stage, before levelling, it is advisable to loosen the upper 25 - 30 mm of the soil left after the 20 mm had been removed.

### 3 Levels

The eventual playing level of the green must be 3.00 mm **below** ditchboard level.

Planting level is 5.00 mm below playing level (i.e. 8.00 mm below ditchboard level).

About 7-10 days after the application of the Herbifume the Committee can proceed with levelling of the green

#### 4 Levelling the Green - Two Methods

- 1 Rails - Using rails on level pegs with a screed is an old and trusted method which has been used often in the past.
- 2 Wires - Using level pegs ( every two metres and two metres apart) wires are stretched very tightly across these pegs and the green levelled by pulling a light screed resting on the wires.

Note - Personally I have found the wires more reliable - this opinion is shared by many overseas GKP's

The most important aspect of whichever procedure is used is that the green **must be absolutely level before planting i.e. to the nearest millimetre.**

If a contractor has been employed to undertake the whole operation then an independent surveyor must be brought in to certify that the green is completely level before permission can be granted to proceed with planting.

#### Planting

Just before planting the GKP must apply 50 kgms of 3-1- 5 (or 5-1-5) to the green.

If the grass was obtained from a nursery it will probably have been delivered in the form of "super sods" ( Each sod plants 10 sq .m.)

The sods must be broken up with a machete or equivalent instrument and the roots and stems teased apart into small pieces which are then planted. The soil is lifted to a depth of 10 mm and each sprig placed under the soil with nothing showing above the ground.

If a neighbour supplied the grass as "scarifyings" then these must be spread evenly over the green . If the green had been levelled with rails then the procedure is to scarify the recipient green in one direction leaving grooves on the green

The "scarifyings" from the donor green are then spread (or sown) over the green - the green is irrigated and then rolled.

If wires are used they must remain in situ while planting and the screed continuously pulled over the wires. If scarifyings were used then a little soil must be spread over the sacifyings and the screed used to cover the "scarifyings"

The grass will emerge within a few days and after 2-3 weeks runners (or stolons) will start spreading across the green.

The GKP must, during this period, watch out for any spots where the grass has not come through and plant new grass immediately.

The initial growth will be vertical until the grass plant is self-sufficient.

Once stolons or runners start spreading from the original bud the GKP may consider mowing at 10 mm. This will stimulate tillering which will almost double the number of vertical leaves

Soon the runners will meet up and cover the green with a thin mat.

The green should be mowed regularly with the mowing height being reduced gradually from the original 8-10 mm to 5.00 mm

At this stage the whole green should be top-dressed lightly for the first time to fill in the odd hollows

Once the grass has emerged through the top-dressing and mown a few times at 5.00mm the GKP should open the green for the first time so that the green can be "walked in " - the members might not be happy but it is an essential part of the preparation of the green

Having played for a few times in both directions the green is lightly top-dressed again and mown again.

Play is resumed again and the whole process repeated until the GKP is satisfied that the green is now ready for regular play.

### **SELECTION OF GRASS**

Apart from the decision to re-plant their green selecting the correct grass is the most important decision to be taken by the Planning Committee. Yet, it is surprising how often clubs decide on a certain variety of grass without any form of consultation. Of the 7500 types of grass found on this planet less than 20 are suitable for planting on a bowling green.

It is also rather terrifying to find how many nurserymen are not aware of the difference between the requirements of bowling greens as opposed to golf courses and have recommended grasses for bowling greens which can only be used on golf greens.

#### **Requirements for a Bowling green**

- Supine growth habit - lateral spread to form a "thin" mat.(the thicker the mat the slower the green)
- Many small leaves will produce more "food" through photosynthesis than larger but fewer leaves
- Tolerance to low Mowing Height
- Thin Stolons with short inter-nodal length more desirable than long thick stolons.
- Rapid Growth to cope with "wear and Tear" - especially where there is heavy traffic.
- Disease resistant
- Indigenous if possible.
- Deep root system

Remember that, as yet, we have not found a perfect grass which meets all the requirements

#### **Local Requirements**

In addition to the above requirements there are a number of conditions at the club which have to be considered.

- The Texture of the Soil (How much Clay)
- The expected traffic and wear ?
- The Water Supply - Availability and Quality (Salinity). Are there frequent interruptions in the water supply and has the club got to rely on borehole water
- Climatic Conditions
- Is an indigenous variety available?
- If not - Is there a non-indigenous grass with a good track record in that area - or - does the club have the funds to create the environment a non-indigenous grass would require
- Is the GKP capable of handling a non-indigenous or exotic variety
- Availability of new grass

The Club might be lucky and have a benevolent GKP in a neighbouring club which has the variety of grass the club intends planting. He might offer to scarify or hollow tine his green to supply the grass for the new green

Alternatively the club might decide to obtain the new grass from an established nursery. Here the cost of the new grass might be a factor and the club might decide to order a small quantity of the new grass a year in advance and establish a nursery which would later provide sufficient grass to plant a whole green

#### **Research**

In the RSA the genera *Cynodon* is the prominent grass with *Cynodon Dactylon* (often referred to as Bermuda Grass) being the commonest. We in the RSA are also very fortunate to have the *Cynodon Trnsvalensis* (Florida, Bayview, Skaaplaas, Harrismth and Elliot) varieties available. The *C. Transvalensis* are characterised by their finer, smaller leaves, and short inter-nodal length .

It has a supine growth habit with 80 % lateral growth and only 20 % vertical leaves (This specie is not found anywhere else in the world).

While the rest of the world was looking for and developing new specie we sat back and basked in our good fortune and for a long time did not try to look for, or develop, new specie,

For a few years now one of the major nurseries has been actively encouraging clubs to send in samples of grass found to be performing well in their area and propagating them at the nurseries.

Of these the most notable "discoveries" were-  
Silverton Blue - origin Silverton Club - Durban  
Gulf Green - Found on Scottburgh Golf Course

#### **Available Varieties**

*C. Transvalensis* - well adapted to use on a Bowling green. Quick growers and adapt well to any environment. Fairly resistant to Disease

Strong unbending leaves, pronounced NAP

Bayview and Skaaplaas probably the most versatile

Harrismith rather underrated and m merits consideration

#### *C. Dactylon*

Royal Cape / Outeniqua- Finest variety of this genus. Can be fined up still further but still forms a mat which is thicker than that produced by the *Transvalensis* - Very disease resistant.

Safe, easy-to-handle grass - Not easy to produce a fast surface

Silverton Blue - Small fleshy leaves lying very close to the ground - possible to mow at 2.00 mm without affecting the leaf area. Very slow grower with a long dormant period in the colder climates

#### Hybrids

Tifdwarf - *C. Dactylon* X Florida - Dwarf Variety with soft less rigid leaves - produces a fast green but very prone to fungal infestations (a new hybrid -Tifeagle has been imported and produces a very good golfing surface - has not been tried in a bowling green yet.

Note - Gulf Green has a very marked vertical growth habit. Very fast grower but most of it is vertical with restricted lateral spread. Needs to be mown frequently and is not recommended for bowling greens

*Paspalum Vaginatam* - Origin Western Cape - called "vleigras" because it grew in the "brak" saline areas. Now refered to as "Country Club Grass because of it's success at Durban County Club on the golf course.

It was first planted on the bowling greens at Koeberg power staion near Cape Town but, unfortunately they irrigated with fresh water instead of sea water with the result that other *Cynodons* invaded the green and eventually took over.

It's ability to tolerate very saline conditions (it even flourishes in sea water) makes it the grass of choice where the club has no alternative but to use saline borehole water

It has a supine growth habit. Initially it has very thick stolons which have to be verticut frequently after planting. Once the thick stolons have disappeared it will form a thin mat which has spread across the whole green. Because the leaves are soft and bend

easily it will produce a faster surface than the *C. Transvalensis*. It has a "Hockey-stick turn.

Unlike the *Cynodons* it has no NAP.

The grass has a dormant period of about two months in the winter. Growth resumes in August.

Players who have played on it are very enthusiastic about the surface and are actually thinking of creating a *Paspalum* - friendly environment by feeding the green with ordinary coarse salt.

There is a new variety available which is much finer and still more adaptable

Remember *Paspalum* cannot compete with the other *Cynodons* if there is no salinity. The other grasses will take over.

### **CONCLUSION**

I have made re-planting a green sound very involved but once you decide to re-plant there are a number of extraneous things which must also be done to restore your green to its original glory.

One does not re-plant a green every day but at the same time most of our greens in the RSA are "tired" and in need of re-juvenation

Probably all of them have a certain amount of muck and compaction in the upper 20 mm and the green will be better off without it.

One can also be fairly certain that any old green will be a Heinz green.

The obvious benefits which will arise from putting down a new grass have been mentioned

Unless the GKP has been particularly diligent about it one can also assume that the levels on the old green are not as consistent as they should be.

Therefore all in all the advantages of re-planting a green far outweigh the possible annoyance the members might have to endure while having a green out of commission for four months.

These two offerings of Grass Clippings have given clubs some insight into what is involved when re-planting a green and how to set about it. If the club intends using a private contractor to undertake the work then I would suggest they spend some time on the contract before signing. I have seen too many clubs "caught" by unscrupulous contractors.

**GO FOR IT - GOOD LUCK.**