

GRASS CLIPPINGS 34

“BACK TO BASICS”

-HORIZONTAL

MOWING-

My friend Jack appears to have responded well to what I told him in the first instalment of my new series on “Back to Basics”. but he has now come up with another problem -

From Jack

“I visit quite a number of other clubs and usually I see a smooth green and the bowl runs without any deviations or bumps but at other clubs the grass appears to be fluffy, there are mower marks and even some bare areas as if the grass was shaved. What can cause these variations?”

Hi Jack – What you are seeing is the result of good and bad mowing practises.

In the previous instalment of my “Back to Basics” articles I promised to devote my next instalment to Horizontal Mowing because it is the most important of all the procedures any Greenkeeper (GKP) has to undertake – so – here goes.

Curbing the vertical growth to provide a surface on which the game of bowls can be played is as old as the game itself. Originally a scythe was used to keep the grass short but in 1830 Edwin Budding developed a mower which moved forward while a rotating reel equipped with blades guided the leaves on to a stationery bottom blade.

While the modern Bowling Green mower is substantially changed from the 1830 version the principle whereby the grass is guided on to the bottom blade remains the same

The quality of the surface you provide is as much the function of the sharpness of the cutting edges, the proper adjustment of the cylinder on the bottom blade, and the expertise of

the operator. The term “Horizontal Mowing” encompasses all of the above.

To the layman all this might appear to be a simple procedure - nothing could be further from the truth as it involves mowing techniques, mower care, and a realisation of what you are doing to the grass every time you cut it. Failure to pay particular attention to every facet of the process can result in a playing surface which is flawed and unsightly even to the most casual observer - including your members.

Mower Care -The mower is the most essential and probably the most expensive item of equipment the club has to purchase. You are the custodian of that mower and the frequency of such purchases is a reflection on how you have looked after it.

One of our mowers is 40 years old and still functioning well but I am also aware of clubs where they have to buy a new mower every 6-7 years because of mower- abuse.

While you may have a club member to handle the more involved procedures e.g. rotating the cylinder, fitting new bottom blades and bearings, you, as the GKP, should handle the daily adjustments, lubrication and maintenance of the chains.

Daily Adjustments

When it comes to adjusting the mower there are no short cuts. Precision mowing requires precision adjustment – remember – **a mower only cuts as well as it is set to cut.**

Mowing Height – The mowing height can vary according to your needs. If the mat covers the whole green there will be sufficient live leaves lying in the mat to provide all the “food” the plant needs without you having to rely on the vertical leaves to provide additional leaf area. The front and back rollers of the mower will be running on the mat and you can afford to mow at 3.00 mm.

If there are any weak or bare areas where the number of horizontal leaves will not produce sufficient “food” to maintain growth in the grass plant then you would have to allow for the vertical leaves to provide the additional leaf area until the weak area has covered completely. Under such circumstances you would be mowing at 5.00 mm.

Having decided on the mowing height the Setting Bar screw should be set at that height and the front roller adjusted accordingly at both ends and in the middle.

Never reduce the height by more than 33%. Not only is it not good for the turf to have more than 33% of it’s photosynthetic capacity suddenly being removed but the amount of grass “grabbed” by the revolving blades might put a severe strain on the motor.

While most modern bowling green mower reels have 16 blades it is always advisable for a club to possess a mower with a 10-blade cylinder for the “dirty” work.

Cylinder / Bottom Blade Adjustment -

This is what horizontal mowing is all about – cutting the vertical leaves. The appearance of the green and the health of the grass will largely depend on how well you have adjusted the cylinder to the bottom blade.

The first requirement is that the leading edges of both the cylinder and bottom blades must be sharp. As the cylinder rotates while the mower is moving forward the blades will “pull” the leaves against the bottom blade and cut them - hopefully along the whole length of the bottom blade.

The next requirement is that the cylinder must be adjusted down on to the bottom blade. If both edges are sharp then there is no need for the two surfaces actually to touch each other as long as even the thinnest leaves can still be cut. It is most important that the “approximation” between the cylinder

and bottom blade should be absolutely equal along its whole length.

You should use a sheet of paper or some long leaves taken from the bank and check the cut along the whole length of the cylinder while rotating the cylinder manually. You should do a test run yourself to confirm that the “cut” is even along the whole length of the mower.

It is inevitable that sand on the green e.g. worm casts or any other abrasive substance will wear away at the two edges. As the steel of the bottom blade is softer it should wear first.

In time the bottom blade will show wear and indentations and you will eventually come to the stage where the area of contact between the cylinder and bottom blade is quite substantial. It is time to fit a new blade. **Never try to save on bottom blades.**

By this time the leading edges of the cylinder will also show some rounding or bull-nosing whilst the back edge is sharp and it is time to rotate the cylinder.

This can be considered as a single operation so that very time a new bottom blade is fitted the cylinder should, also, be rotated.

Eventually it will be necessary to have the cylinder machined at a reputable engineering works.

Note It is now possible to obtain screws for the bottom blade which fit an Allan Key.

A GKP should be aware of the fact that every time he adjusts the cylinder on to the bottom blade he is, also, tightening the chain driving the cylinder which, in itself, might need adjustments.

Teasing Rake The teasing rake is set just behind the front roller. Jack, you must understand that when the mower moves forward the front roller will push most of the vertical leaves down and, unless there is something to raise them again the rotating reel will not

“grab” them and guide these leaves on to the bottom blade.

This will mean that many of the vertical leaves will not be cut. But, 2 hours later, after you have finished mowing these leaves will again become erect and your green will appear fluffy.

The teasing rake is, therefore very important and must be set in such a way that it will raise, not only, those leaves which have been pushed down by the front roller, but also, some of the horizontal leaves lying in the mat.

Originally the teasing rake was made up of many fine steel pins but more recently these steel pins have been replaced by brushes. Brush rakes are more efficient except for the fact that you must regularly clean the brushes and remove all loose tissue or old leaves from the brush.

The bottom of the rake should project 0.5 mm below that of the bottom blade.

Speed of the Mower - Most new mowers have a two-speed gear box. Unless there is a special reason why the green should be mown quickly the mower should always be set at the slow speed.

Shaving - A small high spot might develop on a green – probably from a hump left after top-dressing. When the mower goes across such a spot part of the mower might be on the high spot while another part might be off it. This might result in the edge of the high spot being “shaved”. If you persist in mowing over that spot the grass in the shaved part will die leaving a bare area. You should recognise this development and stop mowing over that part. At the same time, you should do something to reduce the high spot – either the scarifying or hollow-tining it.

The Operator

A well-trained operator is worth his weight in gold. He must not be in a hurry. Turning the mower is, in itself, an art. On the one hand you might have

the cowboy who spins the mower round and slams it down on the green. On the other hand, you have the slow-coach who lingers on the turn and keeps the front roller raised for so long that the bottom blade heats up leaving scorch marks on the green where he started the run.

The operator should be careful when he moves to the next cut to avoid too much overlapping and at the same time ensure that he is not leaving a ridge of fluffy grass between cuts.

Always double cut and change the direction of cut every time. He must, also, cut parallel to the side every 3rd or 4th time he mows the green.

The Grass

Mowing is a traumatic experience for the grass. Every time the green is mowed the tips of the leaves are severed. These severed ends must first be sealed off to prevent virulent organisms from gaining entry to the leaf and then heal up as quickly as possible before the next mowing.

The sealing and healing process will be influenced by –

- 1 The accuracy of the adjustment of the cylinder on to the bottom plate. As in human beings a clean cut will heal quickly while an abrasion or a torn leaf leaving a wide area of trauma will take much longer to heal and use up more precious energy.

- 2 The production of the Amino acids, Enzymes, and Proteins which make up the defence mechanism and the availability of Carbohydrates to provide the energy for the healing process to take place.

Another consideration is that photosynthesis (as explained in the previous article) will only take place in daylight. Every time you mow the green the grass has been damaged and the healing process must take precedence over the production of food. You probably lose about 2-3 hours of carbohydrate production every

time you mow. These are the basic rules you have to observe every time you use the horizontal mower.

From Jack

Well! That was quite a mouthful. Last Question - Bearing in mind club commitments how do I fit mowing into my greens management program?

Hi Jack – There is no hard and fast rule for all this. Each club has its own playing programme. All the procedures involved in managing a bowling green must be planned around the club days. It is universally accepted that Mondays belong to the Greenkeeper and there will be no organised club activity on a Monday.

Your problem is really in the summer when the longer daylight hours give you greater photosynthetic activity and more vigorous vertical and lateral growth. It is important to remember that each week you must remove what grew that week. You are not only controlling the vertical growth but, also, the lateral growth.

Then, there is the need to irrigate the green at least once a week.

All this must be carried out between club playing days. In the summer you will have to mow at least 3 times a week. Two of these mowings should be on club playing days.

You could use the vertical mower followed by the horizontal mower on a Monday or irrigate on a Monday and mow on the Tuesday. Note that if you last mowed on the previous Friday waiting till Tuesday might be a bit risky.

Between all this you have to fit in fertilising the green every 2 weeks - this would be done on the day you irrigate the green.

As the daylight hours decrease so the urgency in planning your programme will ease somewhat and you will have more time to plan your work.

Conclusion

Dear Jack – These two articles make up the first part of the “Basic” series.

You are reminded of the important part mowing (vertical and horizontal) play in your greens management.

A GKP is obliged to produce **and maintain** a bowling surface which meets the requirements of the sport. i.e.

a) The whole green must be covered by a mat of healthy grass which allows the bowl to run freely at a reasonable speed without anything on the green causing it to deviate from its intended course.

b) The mat must be of even thickness and there must be no weak or bare areas on the green.

c) The surface must be smooth with no tufts of grass indicating that the operator has missed out on some areas or there should not be lines of lighter areas where the operator has overlapped his lines.

Having produced such a surface you must be aware of the fact that it does not remain static – every day there will be some vertical and horizontal growth.

To do all this your mowers must always be in perfect condition and well adjusted

As mentioned in the articles it is easy to control the vertical growth by mowing regularly but it is the insidious lateral growth which thickens the mat where your expertise will be tested.

At the same time there is the ever-present spectre of not leaving sufficient leaves to ensure that the grass is producing enough “food”.

The last gentle reminder is that when you eventually relinquish your post you will hand over to your successor a green which is in the same condition, if not better, than when you took over.

Good Luck!

CHL