

GRASS CLIPPINGS

NO 24

SWEET THOUGHTS

Television has made us more aware of major disasters. We have become accustomed to the sight of paramedics helping the injured and seen them setting up an intravenous drip of glucose dissolved in water before they move the patients.

The thinking behind this is that when the human body is subjected to trauma the Defence Mechanism will seal off all open wounds and immediately start repairing the damaged tissue.

This process would use up a lot of energy which would have to be derived from the Carbo-hydrate (CHO) reserves stored in different parts of the body. Depending on the extent of the trauma these reserves might not be sufficient and the repair process compromised.

It is in these instances that the glucose so conveniently provided by the intravenous drip might not only hasten his recovery, but, maybe, save his life.

Bearing in mind the similarity between the grass plant and a human being, the question must arise – are there not occasions where the grass plant would benefit from an “injection” of glucose ?

The answer must be “yes” - I have, for many years supported the principle of making Glucose available in the root zone at times when the grass plant is unable to produce sufficient CHO.

I have applied molasses and Seaweed to the green during renovation when much of the plants natural reserves of CHO have been destroyed by the scarifier and the plant is not able to produce it's own CHO until the first leaves appear and become photosynthetically active.

If the renovation coincides with early spring it would also be advantageous to the plant to be provided with a little glucose after the rigours of winter

Two recent articles in the Internet have raised the question of whether CHO should be supplied routinely or only in emergencies **i.e. to “jump start” the plant in an emergency.**

Having decided that there is a place for the provision of CHO artificially to the grass plant two questions have to be answered –

1) The first question would be –

Which form of CHO would you apply?

The make up of the sugars in the grass plant are fructose and glucose but the CHO reserves in our warm-season grasses are long chain glucose polymers called “starch” which is only converted when put to use.

The easiest and most likely to be converted into starch is Molasses – cheap, very soluble, and freely available

One researcher also advocated unrefined brown sugar but in the RSA molasses applied at the rate of 1 litre in 200 litre water per green (or a teaspoonful mixed with water per 5.0 sq. m) would appear to be the CHO of choice.

Note The GKP must remember that when Glucose is given intravenously the doctor knows just how much glucose has been given

The most the GKP can do is to make it available in the root zone without being able to make an accurate guess as to how much the plant has actually absorbed – there are a lot of predators waiting to “share the spoils”.- the worst being some virulent pathogens just waiting to invade the plant.

It has, also, been proved that by maintaining a high level of glucose in the root zone nematodes will not attack the roots of the grass plant- a type of peaceful co-existence where the nematodes prefer to consume the glucose in the soil than to by having to “suck” it out of the grass plant.

The benevolent micro-organisms and Mycorrhiza in the root zone would still receive their CHO directly from the roots and not take that which is available in the root zone

2) The next and most important question which has to be considered would be-

Under what circumstances would you apply Molasses ?

If one compared the grass plant with the human being as outlined above then molasses would only be given when there is a call for additional CHO – usually following extensive trauma or when CHO reserves are depleted or when the

production of CHO is compromised and the grass plant needs a “jump start” of CHO to survive. Such occasions could be any of the following –

- a) Bare or Sparse Areas There might be a few small areas which are slightly raised above the level of the rest of the green. Scalping will occur. By removing all the leaves scalping will remove the photosynthetic potential of the grass plant. The plant must “borrow” energy from its reserves to maintain respiration and initiate regrowth. If the GKP continues mowing that area the CHO reserves will become depleted leading to poor health and possibly death of the plant as the energy to “push” the new leaf upwards has been used up.
- b) Note This same scenario can apply to any part of the green where the growth is sparse and repeated mowing is aggravating the situation.
Cessation of all mowing and a soupcon of molasses would restore the grass cover.
- b) During Renovation During Renovation when the green has been scarified and some of the reserves of CHO have disappeared into the mower bin as scarifyings. Given time there would still be sufficient CHO reserves to push the emerging leaves through the top-dressing but a little molasses would have hastened the emergence of the new leaves.
This situation usually arises if the green is being renovated in early spring when “root die back” has occurred and there is only the minimum of CHO reserves – a good case can be made out for renovating when there are ample CHO reserves (November or March)
- c) Most GKP’s seem to forget that photosynthesis takes place during the daylight hours and plant growth takes place at night. If overcast weather and lack of sunlight - prevent the production

of CHO for a number of days (or shorter daylight hours) and plant growth continues unabated then CHO depletion can occur.

Some GKP’s apply molasses on a monthly basis. They argue that in the management and preparation of a green plus the passage of players there is so much damage done to the grass plant that the CHO reserves should be supplemented by adding a little additional CHO every month.

I do not subscribe to this policy – it is the GKP’s responsibility to provide a decent playing surface. That surface is the grassy mat, which is spread evenly across the green. By doing that he is actually providing the leaf area required to produce sufficient CHO to meet the energy requirements of the plant – on a well-covered green the plant will not need any additional CHO

Greenkeeping is not an exact science. When applying Fertilisers, Pesticides, or Sugar to the surface of the green we have no assurance how much of the medication is going to be absorbed – we can only take note of the result,

We can assume that when growth is sparse or weak and there are very few emerging leaves that sugar in the root area might be of help, but it is difficult to justify applying sugar to a grass plant which is healthy and photosynthetically active.

There is, also, the odd GKP who is so obsessed with “speed” that he reduces his leaf area to a dangerous level and relies only on molasses in the root zone to supply the additional CHO.

Comments

I believe that there are times when a little sugar can hasten the recovery of the grass but it should only be applied when the plant is unable to produce enough of its own, - this would apply to shaded areas or those areas where the micro climate is not favourable to strong growth. But, it also applies to seasonal times of the year. For example, when temperatures drop sugars can help the plant sustain growth or after heavy rain periods when the soil can become exhausted and out of balance, or as we change from winter to spring conditions it can be used to give the plant a boost. **Applying sugars in optimum**

growing conditions has little, if any, affect and is a waste of time and money.

NEWS BRIEF

The Stimphmeter

Some time ago the Greens Standing Committee of Bowls SA (GSCBA) decided to incorporate the stimphmeter in the evaluation and grading of a Bowling Green.

The Stimphmeter would enable the inspector to determine the Speed, Draw and Weight of a green and make it easier to pick up discrepancies on the greens.

A standard stimphmeter was designed and the funds were obtained to provide each District with, at least , one Stimphmeter.

This was two years ago !

The saga of the stimphmeter is a story on it's own and suffice it to say it seems as if a willing manufacturer has now been found.

Once these are readily available standardisation .will take a few months after which the new norms will be incorporated in the new grading book.

Hold Thumbs – this is not the end, it is not even the beginning of the end, but, it might be the end of the beginning..(Churchill 1943)

Please note that the old grading book is still in force.

The Scoring Sheet

The GSTSA also decided to scrap scoring in the first Section of the Scoring Sheet Banks, Ditches and Equipment will no longer be awarded points.

They will still be inspected and the inspector will be expected to comment on any abnormality or deficiencies.

In the meantime the scoring of the other two sections has been changed slightly and the grading will be based solely on –

- the Health of the green
- Draw, Weight , and Speed.
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RANDOM THOUGHTS

The Ides of March

While the words “Ides of March” evoked terror in the minds of the ancient Romans it should only serve as a reminder to the GKP that if he has not adapted his greens programme by the 15 th of March then a long and lonely winter might await him.

March is the month of change – it is the last month in which the GKP can prepare for the winter or carry out any major works on his green.

Let us look at a GKP called Arthur.

Arthur brought his green through renovation and in mid-December he was ready to prepare his green for the coming season. He reduced the leaf area because he had 15 – 16 hours of sunlight.

His green ran well and the members were happy .

In early March he remarked that the green looked jaded, the grass tired, and weeds had appeared. Arthur had forgotten the basic equation in Greens management i.e. – CHO Production = Leaf area X Sunlight Hours.

Arthur did not adapt his leaf area to the reduction in Sunlight hours

He was simply starving his grass by maintaining the same leaf area while the sunlight hours had reduced by 20 %,

There was, now, a daily deficit. All the CHO reserves were depleted and the plant was surviving on the CHO as it was produced. There was no CHO to meet the needs of the Defence Mechanism. Resistance to infections and repair of damaged tissue was non-existent.

Weeds and fungal infections were seen.

Instead of being able to build up CHO reserves to take the grass plant through the rigours of the winter he now had none.

The moral of the story is “Remember that it takes two to tango”

No caring GKP would deliberately deprive his grass of the means to make it's “food” , and yet, by not taking note of the movements of the sun that is exactly what Arthur was doing.

If the amount of CHO required by the grass plant is constant then the GKP must adjust his leaf area according to the sunlight hours available – a commodity which is constantly changing.

Note There are many articles on “Summer Stress” .All of them submit that drought conditions towards the end of summer contribute to the difficulties experienced by the plant with irrigated water not being the perfect substitute for rain.

While there is, obvious, merit in their submission the GKP forgetting to adjust the leaf area in line with the sunlight hours

would also contribute towards the stress experience by the grass.

Ground Temperature

The most pleasing feature about March is the fact that root growth is re-activated when the ground temperature drops to 22 Degrees and will stay active until the ground temperature drops to 18 degrees towards the end of March or early April.

Major works can be undertaken during this phase - Many Aussie GKP's renovate their third green in March

Even if no major procedures are being undertaken in March it is still the time to build up the CHO reserves and not to thin out the mat so that, even in those areas where frost occurs the thicker mat will take them comfortably to August before it becomes a bit threadbare.

Mycorrhiza Fungus

In Grass Clippings 23 I mentioned the fact that I had introduced Mycorrhiza Fungi to my "A" green and was awaiting results

It was, obviously going to be difficult to make a scientific assessment of what had happened to that green since Mycorrhiza was introduced but in this particular case I have no doubt that the "experiment" has been a success.

The "A" green was renovated in the first week of August

Mycoroot was introduced after hollow-tining and before top-dressing. The green was open for play in the first week of October.

Thereafter the "B" green was taken out. Renovation was very protracted and due to a unique set of events the green could not be opened for play before Mid-February.

This meant that "A" green was used constantly for 4 ½ months.

The average monthly traffic for that period was 550 players per month. (Normally 400 players / month is regarded as the upper limit)

The fact that full water restrictions were in force and that we were obliged to use only our well water (Salinity 1600P.P.M.) did not make Greens management any easier

In spite of this the green came through this period unscathed with never a sign of "mat wear"

Many knowledgeable visitors who were aware of our problems remarked on how

healthy the grass was throughout this period

I have worked on this green ever since it was constructed and planted with Bayview in 1984. Over the years a greens management regime has evolved which has proved to be successful.

This year I could not but wonder why, in spite of the enormous load, the green was performing so much better than expected

I was convinced that the green, as I had known it through the years, would never have come through this period without showing definite signs of stress.

We had, obviously done something that we had not done before. And, yet, the only difference between the green of 2010 / 11 and the previous 20 years was the fact that we had given it Mycorrhiza Fungi in August 2010.

Our objective in applying the Mycorrhiza fungus was that we knew the fungus would extend its threads into the soil environment far beyond the area normally reached by the roots- the nutrient uptake would increase

This would make nutrients available from areas not normally reached by the roots of the host plants.

The anticipated increase in the nutrient uptake made it possible for us to reduce our fertilisers by 10 %.

I have no doubt that the Mycorrhiza helped to bring my green through this trying period and I am, also, convinced that by reducing the fertiliser the cost of the Mycoroot would be defrayed by the savings on fertiliser.

Comment If a GKP intends building up the Mycorrhiza Fungus population in his soil by adding this product (Mycoroot) he also undertakes not to use any Systemic Fungicides as they would kill off much of the fungus and the whole operation would be counter-productive.- but – with environmental concerns becoming increasingly commonplace and pressures increasing on GKP's to produce the best possible surfaces with minimal usage of fungicides "Hard" chemistry is being replaced by more acceptable environmentally safe options

Integrated Pest Management will be the only way in the future – Let us start applying in now.

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SUMMARY

The first part of GC24 is devoted to the vexes question of whether a GKP should supplement the diet of the grass plant by making “sugar” available in the root zone. The pro’s and con’s are discussed and the consensus is that there are times when a little sugar (in the form of molasses) should be made available in the root zone.

A few decisions taken at the recent meeting of the Bowls SA Green Standing Committee are mentioned plus the imminent arrival of the Stimphmeter.

In the latter part of GC24 the significance of the month of March is discussed. Any GKP ignores it at his peril. Probably the most important feature being the fact that when we come to March there has been a significant reduction in the daylight hours and it is up to the GKP to adapt his leaf area accordingly.