



# The Soilsmart Newsletter

Issue 10 June 2009

## INCREASING ENVIRONMENTAL PRESS NEEDS DIRECTION.

It seems that with every new turf journal that crosses my desk, there is a much higher concentration of opinion, research and interesting articles about environmental management and climate change. Many of these reports talk about getting back to basics and discuss, amongst other things, the management of organic matter in the soil. It would appear however, from many of these articles that there is a general lack of understanding about organic Carbon levels in turf soils, and how best to manage it.

In most cropping industries it is generally well accepted that soils with a higher organic content will grow better crops. In the turf industry however organic matter is often referred to in negative terms, largely because it needs to be managed quite differently in sand based turf soil.

One can only assume that it's a lack of understanding of how organic matter can be managed that causes the negative press. In fact in one recent article, the author went to the trouble of explaining how thatch and organic matter is decomposed by soil organisms, but then had no real answers as to how these organisms should be encouraged and promoted.

I guess that is the main issue, like many things in life turf management, particularly at the intensive end, is about living with compromise. We are trying to grow grass in an unnatural way and putting unnatural pressure on it, we're not complaining about it, it just happens to be the reality we have to deal with. When we talk about managing soil organic matter we should also be talking about managing soil biomass, not just dusting, scarifying or coring.

In fact when it comes to beneficial soil organisms, we need to realise that many of the processes and products we use in the normal course of managing turf have a detrimental affect on them.

We need to understand just how important soil Carbon and soil biology are because as global warming continues, and the pressure on our water resources increases, the importance of increasing managing these two vital pieces of the soil management puzzle may mean the difference between being able to maintain sportsturf or not.

## POST RENOVATION - A CRITICAL TIME FOR STRESS

The renovation process can be stressful time for turf, stressed plants quickly becoming targets for insects and disease. Naturally there is a tendency to throw lots of chemicals at the various problems as they arise however this often adds to the stress that turf has to deal with.

There are a number of 'softer' more natural products that should be considered as you plan your renovation program. **NemaGo Plus**—stressed turf is an easy target for Nematodes however using strong chemicals only damages beneficial soil biology, and promotes anaerobic conditions favouring the return of anaerobic organisms (including root feeding nematodes and pathogens). NemaGo Plus however is a softer, natural product which should be used as part of the renovation process, it will suppress root feeding nematodes and allow the turf to recover from the renovation process without putting undue pressure on the beneficial organisms that you have in the soil.

**OC KP**— rapidly growing turf needs an adequate supply of Phosphorous at the growing tips to facilitate the growth of roots, shoots and stolons. Trouble is that in many of our turf soils, a significant amount of the Phosphorous is locked up and largely unavailable to the plants. Most Phosphorous fertilizers added in the renovation process aren't immediately available to plants either (needing to be transformed into plant available forms) and in many instances they will also 'lock up' before this is possible.

There are a couple of strategies worth considering, firstly using Soilsafe Activated P which is a natural product that will not lock-up. Secondly consider supplementing the Phosphorous in the plant by using OC KP (an organically chelated food grade nutrient) for foliar application.

## ONE SYDNEY TURF MANAGER IS TAKING CLIMATE CHANGE SERIOUSLY AND HAS ADOPTED SOME SIMPLE STRATEGIES TO HELP REDUCE HIS ENVIRONMENTAL FOOTPRINT.

Matt Hamilton from Elanora Country Club has made a concerted effort over the past three years to minimise his chemical inputs, believing that they were actually contributing to many of the environmental and turf management issues he was experiencing.

Like many turf managers Matt was diligently managing pests and disease, however deep down Matt knew that the chemicals he was using were simply masking the symptoms, and not really addressing the causes of the problems. After discussing some of the possible options, Matt adopted an integrated approach to managing the greens at Elanora, taking a much bigger interest in managing beneficial soil biology.

He realised that the use of toxic chemicals was in fact having a negative impact on the life of his soil, and that reducing this impact could result in healthier turf. Not only did he want to change this environmental degradation he also wanted to reduce costs and minimise the chemical exposure for himself, his staff and the clubs' members. Three years ago Matt started using Soil & Plant Tonic to build biological activity and soil health. There was an immediate and positive impact during the first growing season (Spring/Summer 06/07) but he discounted the result because of the dry year and lack of humidity.

The (29007-08) Summer however was a much better test and the greens have come through in a disease free state with little or no chemicals needed to control disease.

In fact when Matt sat down in June 08 to review his actual chemical use over the past year, Matt even surprised himself at what he has been able to achieve. Comparing the years' chemical inputs with what they had been prior to beginning the program, he had reduced;

- fungicide use by 76%
- pesticides by 85%
- fertilizers by 72%.

Impressive numbers particularly when you consider that the greens have genuinely improved in quality terms as well as being more manageable. The greens are not only improved significantly in terms of disease, the root systems have never been better and Matt has also noticed a

reduction in the build up of thatch as well. The root systems are so good that Matt had been able to rely on rainfall and hadn't needed to turn the irrigation system on since the previous January. In fact the savings in water alone would more than justify Matt's approach from a climate change perspective.

Last year (Spring/Summer 08/09) was an even harder test, being quite a wet growing season and from most reports a difficult year for disease in the area. Again Matt has recently sat down to review his inputs and has only applied fungicides on three occasions and pesticides once in the past twelve months.

Matt uses monthly applications of Soil & Plant Tonic to build the biological health of the soil, and this is backed

up at renovation by GranoVerm and OziVerm to build soil Carbon levels. Matt also uses a combination of BiSect with Eucalyptus and Tea tree oil to suppress insects such as couch fl, cut worms etc.

Of course Matt isn't on his own, there's a similar story coming from many turf managers using Soilsmart products, be it on bent or couch. We take our hats off to these turf innovators and hope that their achievements draw some general attention from the turf community because they are proving in a 'real world' situation that turf management can be adapted to the pressures being imposed by climate change and possibly giving new hope for the future of our industry

### **IT'S NEVER TOO LATE - 100 year old figs benefit from a biological soil rejuvenation**

We recently conducted a series of soil tests (Physical, Biological and Chemical) to address a problem with a group of fig trees in Victoria Park in Sydney. The trees had suffered during the drought were under a considerable amount of stress, with die back having to be regularly pruned. Tests revealed that the soil around the drip zone of the trees had become severely compacted, Soil compaction levels were tested using a Penetrometer and were confirmed by the biological assay which showed a predominance of anaerobic organisms, as well as a distinct lack of beneficial fungal resources in the soil. Interestingly soil chemistry analyses revealed very little (showing only minor deficiencies), and were not able to provide any tangible explanation for the problems being experienced.

As a result of the tests the trees were treated with a biological 'maintenance program' which included GranoVerm, Soil & Plant Tonic and BioGrow. The program was targeted at rejuvenating the beneficial soil organisms capable of rebuilding soil structure and thus relieving compaction and anaerobic conditions.

Following the completion of the treatment penetrometer analysis was conducted to verify soil structural changes (these results are summarised in the adjacent table).

Following the results of the initial work we were asked to conduct a similar process at Observatory Park, on a stand of 100 year old figs also suffering the effects of drought and soil compaction. Not surprisingly these have responded in a similar fashion to improved soil conditions.

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