



Greenkeepers Training Committee

In a new series, the GTC has invited representatives from its Quality Assured Centres and Training Providers to discuss their particular specialism within the sports turf sector



In this first month, Martin Ward, Managing Director of Symbio, explains the basics of good greenkeeping practices and how the company is intent on helping course managers and greenkeepers understand what happens below the surface. There is also a series of workshops planned...

20 years have passed since the first products containing soil microbes became available for turf managers. In the early years they were designed to solve specific problems like black layer, nutrient retention and thatch degradation, based upon easily observed actions of common soil bacteria.

The early results sparked off a wave of research initially by professors interested in microbial reactions on turf with Professor Alan Gange at Royal Holloway College, University of London at the forefront. Latterly colleges offering degrees in turf science have played a practical role guiding students through research into a range of topics for their degree theses.

Dr Andy Owen and his colleagues at Myerscough College, a leading GTC Quality Assured Centre, have played a leading role in this respect.

Specific turf research in the UK and the USA has increased our understanding about the myriad of relationships between the grass plant and the chemistry, biology and physical properties of sports turf rootzones. So how does this information affect the daily management practices of the course manager?

The main areas where healthy soil allows management practices to improve to help produce fast, even, low thatch greens are:

Reduced Physical Aeration (it is still needed but in less disruptive form)

Reduced Fungicide Use

Reduced poa annua - improved perennial grass growth

Reduced fertiliser input

The main change is the treatment of organic matter. Organic matter comprises of dead grass i.e. thatch which is generally considered bad and roots, organic nutrients, soil

biomass (bacteria, fungi, protozoa, nematodes, arthropods and worms), humic compounds and organic acids which are essential for healthy plant growth.

Thatch is also the primary food for fungi. Traditionally thatch has had to be physically removed with costly invasive practices, deep scarification and hollow coring, however aeration provided by micro tines into the thatch layer is sufficient if it is to be degraded by fungi and bacteria.

Thatch is converted to plant food and humic compounds which increase cation exchange capacity (CEC) and reduce fertiliser inputs but more importantly, the rootzone develops a fungal biomass which we now know is needed if perennial grass is to be grown instead of poa annua.

This means that less top dressing is required to maintain a fast surface, less fertiliser is required for more consistent surfaces and you do not need to starve greens to reintroduce bent and fescue.

Percolation rates are also a function of the biological activity in the rootzone. Practically all beneficial microbial activity is undertaken by aerobic microbes but it is perfectly possible to manage many golf greens without large tine hollow coring, because bacteria, fungi and beneficial nematodes all maintain friable, fast draining, aerated soil.

Regular microtining and occasional vertidrainage should be all that is required for all but the most compacted, thatchy greens.

Disease management is now high on most people's agenda with the cost and gradual reduction in available fungicides.

The basic premise is that healthy grass is less susceptible to disease but the stresses put upon greens, tees and fairways means that the grass is always susceptible to pathogen attack.



The GTC is helping to organise a series of seminars around the UK this autumn to explain the practical aspects of making soil biology work for you.

For further details visit: www.the-gtc.co.uk

Also contact Symbio direct for dates, venues and to book your place on a workshop:

Tel: 01428 685762
Email: polly@symbio.co.uk

The good news is that there are four natural methods that greenkeepers can employ to manage disease.

All require a healthy population of bacteria and fungi around the root system. When the microbial population is in place: -

1) The beneficial microbes form a protective barrier around the roots and leaf lesions.

2) Some produce natural antibiotics to kill pathogens.

3) Pathogens become a food source for the beneficial microbes.

4) Some microbes and biostimulants encourage the plant to produce hormones called phytoalexins that help it fight off disease.

Fertiliser requirements are also reduced, microbes are made from carbon, nitrate and phosphate so they live on and hold applied nutrients in the soil but more importantly they help convert the proteins and carbohydrates produced by the grass during photosynthesis and are the driving force behind the nitrogen cycle.

Apart from reduced physical disruption the key changes to management practices required by the modern greenkeeper are to introduce the correct microbiology to the rootzone and to keep it alive by the correct use of biostimulants, aeration, fertilisers and fungicides.

If you want to manage poa annua greens you will need a bacterial dominant rootzone that supports annual plants and feed the biology simple sugars and carbohydrates.

If you want to grow and manage perennial grasses, a balanced fungal bacterial mix is required that is fed by more complex carbohydrates, seaweed, humic and fulvic acids.



The GTC is funded by:



Contact Details

David Golding
GTC Education Director
and Standards Director,
Greenkeeper Training-Europe

01347 838640
david@the-gtc.co.uk

GTC
Aldwark Manor
Near York
YO61 1UF

www.the-gtc.co.uk
www.greenkeepertraining.com



You can follow the GTC on
Twitter @TheOfficialGTC