

Ham Manor's 18th green after 12 weeks of establishment

What lies beneath?

How better balance creates healthier rootzones

Laura Prior, Technical Sales Manager for Symbio

After a long, wet winter the vast majority of golf courses are suffering from saturated and anaerobic soils.

Setting your soil biology back on the correct path is more important than ever.

Natural soils should consist of soil, airspace and water.

Oxygen is vital for healthy rootzones, so aeration is essential to opening up air space for drainage and root development. It's not just roots that live in the airspace, however; there's also soil biology. Microbial populations are responsible for degrading organic material, suppressing disease pathogens, supporting fine grasses and keeping soil friable and aerated as they grow and move.

The surface standards required for golf mean turf professionals use a variety of practices known to slow microbial activity, including compacting the soil, the use of synthetic high-salt fertilisers and chemicals to enhance growth and control pathogens. As a result, greenkeepers then need to mechanically intervene to

relieve compaction. The biology in rootzones is varied and different populations can be influenced, so they can support diseases and weed grasses too. Where microbiology is lacking or imbalanced, problems are evident. To assess your soil health, question:

- / Are your soils anaerobic?

- / Are you soils compacted, suffering from excess water so you are relying on drainage?
- / Has thatch built up to an undesirable level?
- / Do you have dry patch on your greens through the warmer months?
- / Do you experience thatch collapse on your greens?

“Soil biology and grass plants live symbiotically, each reliant on the other to sustain and thrive



Core taken from Ham Manor's 18th green after 12 weeks

- / Do you have annual plants and constantly strive for finer grasses that won't establish and grow?
- / Do you overseed with finer grasses only to see it take, then die back?

Restore the balance

Adding biology to micro-managed soil will go a long way towards fixing problems and must be complemented by sensible cultural practices and a consistent feeding pattern, using low-salt fertilisers and biostimulants. Compost teas and microbial inoculants add life and restore biological balance.

Soil biology and grass plants live symbiotically, each reliant on the other to sustain and thrive. Balanced soil biology feeds from the exudates that plant roots excrete and surround those roots like a wall. This wall of good fungi and bacteria acts as a barrier to pathogenic fungi that want to attack and feed upon them. This doesn't mean your turf isn't

susceptible to disease outbreaks, as we know many uncontrollable factors can influence attacks, including weather patterns. However, if the biology is balanced it will afford your turf greater protection, and in the event of an outbreak it is more likely to be able to fight off disease naturally without chemical intervention.

Testing the effects of mycorrhizae on sports turf establishment

Paul Brown, course manager at Ham Manor, was an early-adopter of Symbio's products and ethos as a career-long advocate of holistic, natural turf management. When he took up his role four years ago, the greens at the West Sussex course had the highest percentage of organic matter recorded by the STRI — 28% in the top 20mm. For three months of the year they were unplayable and regularly closed. A programmed approach, including Thatch Eater and compost teas



Unlike the new 18th, the chipping green was established without Symbio products. There was a marked difference

combined with regular dressing and aeration, has enabled him to reduce thatch levels to just 5%.

However, Paul said that an excellent opportunity to really test the full benefit came in 2018 when the course layout was reversed and the 9th green was rebuilt to become the 18th, providing a fitting finish to the Harry Colt-designed course outside the club's historic manor house. A 900m² chipping green was also built just

weeks later. Both were USGA construction with rootzone produced from cores taken from the existing greens and overseeded with creeping bentgrass.

In a test, Paul applied mycorrhizal inoculant underneath the new 18th before the seed was sown, but it was not applied on the new chipping green. In the weeks that followed, Paul noticed a marked difference in the progress of the two surfaces.

On the 18th, in an exposed

location and sown in very dry weather, the new grass established strongly and uniformly and was playable in 12 weeks with core samples showing rooting of between 12 and 15 inches.

Conversely, the chipping green, which grew in during almost optimal conditions, had much shorter, weaker roots and a thinner sward that took significantly more effort to produce a putting surface.

"I was expecting to see a difference, but I didn't expect such a significant difference," Paul admits. "Plant and soil health go hand in hand, so it makes sense to optimise soil health before trying to produce and maintain high-quality sports surfaces."

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