

## Dry Patch and Soil Moisture Management

Symbio combines the latest wetting agent, microbial and mineral technologies to help you provide the best possible playing surfaces.

### Symbio Incision

A polymer water retention agent that combines penetrating surfactant technology with the water retaining power of polymers. Symbio Incision is used to retain water in the rootzone during the dry summer months, maintain airspace around soil particles when waterlogged and ensure even distribution of fertilisers and pesticide throughout the rootzone.

### Symbio HydroAid Plus

A budget penetrating agent suitable for all sports turf applications.

### Symbio Supa Yucca

A non phytotoxic natural extract alternative to synthetic wetting agents which can be tank mixed with compost teas and other microbial solutions.

*"Since I started applying Symbio's microbial inoculants and biostimulants and spiking, not coring, we are producing much healthier, stronger and greener grass. We did not need to irrigate for three weeks during the drought of summer 2018 so I'd say Symbio and solid tine aeration are a winner."*

**Paul Fiske** | Head Groundsman –  
Formartine United FC

### Symbio Aquacept

An established biological solution to the hydrophobic layer caused by fairy rings and fungal dry patch.

### Symbio TraceOlite

A zeolite that holds 40% of its weight in water to dry out wet surfaces and increase CEC.

### Symbio Mycorrhizal Fungi

Perennial grasses associate positively with mycorrhizal fungi to access more nutrients and water. Mycorrhizal grasses are up to 30% more efficient in taking up water than non mycorrhizal plants.

*Give your grass the mycorrhizal advantage*

*"Working with Symbio since 2015 I have been amazed by the excellent results through the hot summer of 2018. Combining Symbio Incision with converting thatch to humus, allowing increased root mass and sward density I experienced very little dry patch and excellent moisture management."*

**Robert Lydon** | Head Green Keeper – Sandwell Park Golf Club

**SYMBIO**


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## Reduce Turf Disease

Creating resistant, disease free rootzones is one of the most important skills in the turf managers repertoire as many fungicides are being withdrawn.

Healthy rootzones suffer much less from plant disease because the soil microbiome has evolved four ways to protect its host plants from disease.

- Competitive exclusion
- Forming a barrier around the root system
- Predation
- Antibiotic production

Symbio helps you build up a healthy soil microbiome with its compost teas or range of liquid and granular microbial inoculants and biostimulants to remove the problems that cause disease.

Add biology with – **Symbio Thatch Eater, Green Circle, Mycorrhizal Inoculant and SeedCoat, Compost Teas, Fungi Booster, Vermi Extract or BioTabs.**

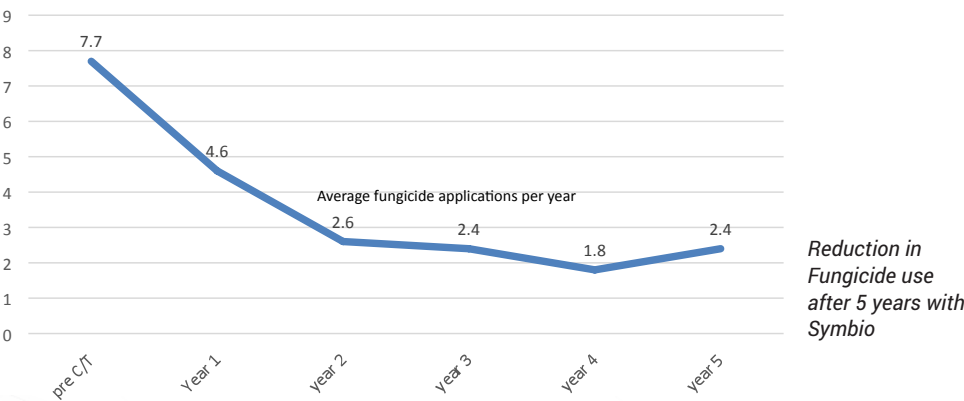
*Working with Symbio compost teas and biostimulants has taken a lot of the stress out of my job, I can now manage disease without chemicals. Over the last four years we have seen a massive improvement in perennial grass quality and a great reduction in Poa seed-heads*

**Scott Corrigan** | Course Manager  
Greenburn Golf Club



*Your Symbio technical advisor will help you decide on the best option.*

Most Symbio customers benefit from a profitable reduction in fungicide use.



## IPM – Integrated Pest Management

Creating a microbially rich rootzone is just the start. Symbio employs sophisticated chemistry to ensure optimum plant strength.

Symbio's IPM programme combines a range of essential biostimulants and trace elements without which grass is more susceptible to disease –

**Symbio PhytoGro, Phosphite, Chelated Iron, Silicon, Fulvic Booster, Root Repair, Defender, Trace Elements Cu, Zn, Mn, B, Mg, Ca.**

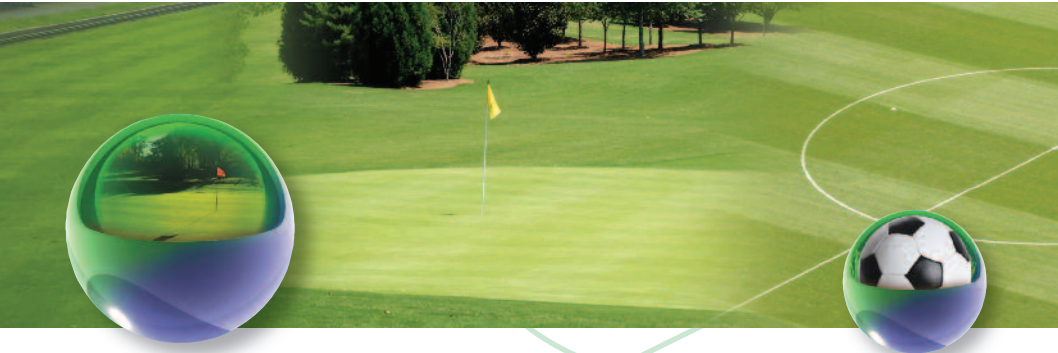


*Your Symbio technical advisor will help you decide on the best option.*

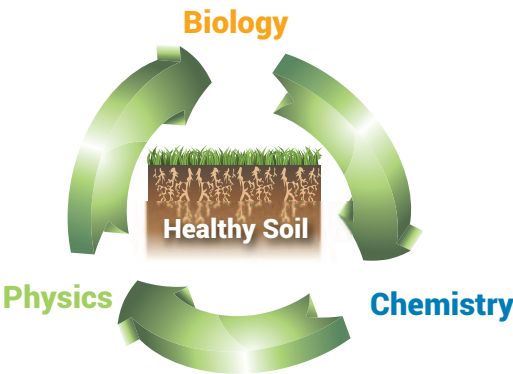


*Improving soil and plant health since 1990*

# Solving Sports Turf Problems



**Symbio helps sports turf professionals create healthy rootzones to grow superb grass for excellent playing surfaces**



**If you suffer from any of the following symptoms of unhealthy soil**  
**Thatch   Disease   Compaction   Poor drainage**  
**Black layer   Fairy rings   Fungal dry patch   Dry patch**  
**Poor germination   Poa Annua   Nematodes**  
**Slow growth   High nitrogen input**

**Symbio can help you cure the problem not just mask the symptoms**

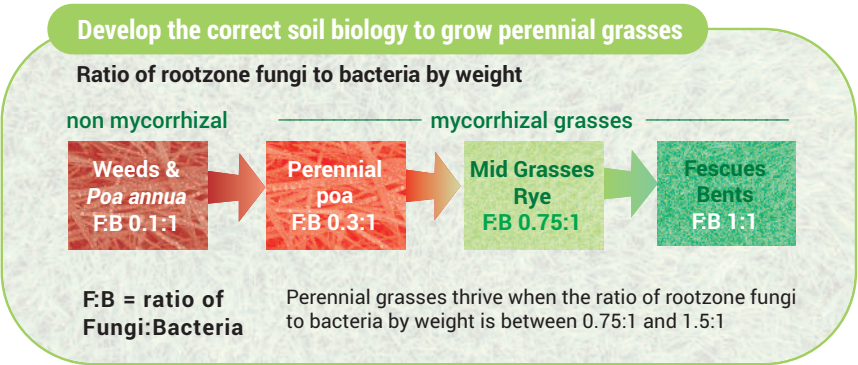


## Grow fescue, bent and rye swards not *poa annua*

Are you fed up with over seeding with expensive fescue, bent or rye grass only to see *poa annua* recolonise the sward next year?

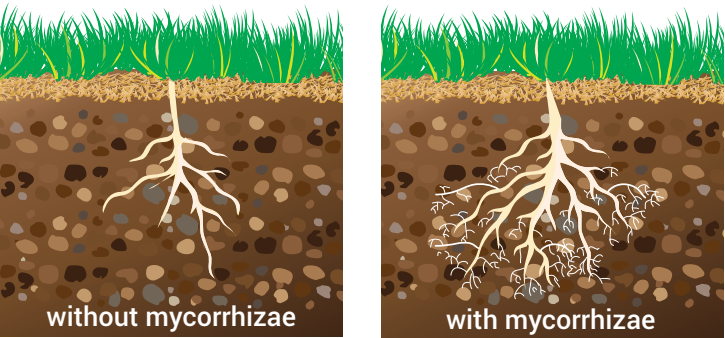
Do you have to quickly grow in a green, tee, fairway or pitch?

The key to success is in the soil biology, *poa annua* favours bacterial dominant rootzones, while perennial grasses form beneficial associations with mycorrhizal fungi and thrive in a balanced fungal bacterial rhizosphere.



Get more from your over seeding by creating the correct conditions for perennial grass to grow and bring your dormant seedbed of perennial grass back to life.

Simply mix **Symbio Mycorrhizal SeedCoat** with your seed and add **Symbio BioTabs** and **CMS Shoot 5.0.2** to your spray tank to fertilise organically and replace the lost soil microbiome and be amazed by the power of soil biology to improve the grass in your sward.



Mycorrhizal fungi extend the root systems of the plant

For rapid grow in of new swards we recommend **Symbio Mycorrhizal Inoculant**

*“Working with Symbio compost tea and biostimulants has resulted in a huge increase in bent grass, without overseeding, and a dramatic reduction in fertiliser and fungicide use.”*  
Finbarr Coughlan | Water Rock GC, Co Cork, Ireland

## Thatch removal without hollow coring

Convert thatch into plant food and biostimulants without spoiling the playing surface.

Symbio's thatch removal process is GUARANTEED, and **paid for by savings** on conventional management practices

**Symbio ThatchEater** and **Liquid Aeration** will convert your thatch layer into humus.

You can replace hollow coring and deep scarifying with with regular micro-tinning with 6mm-8mm tines and sorrel rolling and reduce expensive applications of top dressing.

BENEFIT FROM:

- Faster greens
- More friable rootzones for improved percolation
- Reduced expenditure on top dressing, fertiliser and fungicides
- Improved colonisation of fescue, bent or rye grasses
- Increased income

### Convert thatch to humus and plant food



5cm thatch layer remains after 2 years of hollow coring and 200 tonnes p.a. top dressing



2 years after Symbio ThatchEater with hollow coring replaced by sorrel rolling and solid tining. Top dressing reduced to 120 tonnes p.a.

*“We have been using a programme of Symbio ThatchEater followed by compost teas and biostimulants for the past 5 years. Thatch levels are now at the optimum level and the greens are firmer and drier as a result. The reduction in disruptive physical aeration is a positive benefit to our members.”* Gary McKenn | Baberton Golf Club

## Compaction, black layer and poor drainage

Aggressive aeration and invasive scarification is not the only answer.

Physical maintenance in the form of deep scarification, hollow coring and heavy top dressing with 200 tonnes or more of sand per year is expensive, disruptive, uses finite resources, and results in lost play and lost income.

There is a simple natural answer employed by hundreds of golf clubs and sports pitches to return their rootzones to better than ‘as new’ condition.



Improvements in soil quality without hollow coring 2 months after start with Symbio



Healthy grassland soils comprise 50-70% soil particles, 15-25% air space and 15-25% water. This happens naturally when organic material i.e. thatch is degraded and converted to humus and organic acids. Humus supports the micro organisms that make rootzones naturally friable.

Use **Symbio Thatch Eater**, **Green Circle** or **Compost teas with Liquid Aeration** to convert thatch to humus and supply the bacteria, actinomycetes, fungi and beneficial nematodes that create friable, fast draining soil with plenty of air space into which roots can grow.

Regular aeration with 6-8mm tines and sorrel rolling is often all that is needed to create a healthy, free draining rootzone. Top dressing is reduced to the amount needed to maintain an excellent playing surface.

*“Combining regular non disruptive aeration with a Symbio programme has degraded thatch, removed the black layer and created a friable, aerobic rootzone. Roots are now 4-5” and no fungicides have been applied in the 9 months since last autumn. Membership is up, our costs are down and golfers are happy.”* Dave Roberts HGK | Orchardleigh Golf Club

*Increase customer satisfaction with Symbio*