Managing Golf Greens with Reduced Fungicides

History

Over the last 30 -40 years, the demand from the golf industry has been to recreate the image of lush, green courses seen on television on a weekly basis on the USPGA and European Tours. Not only is appearance important, but green speed is often pushed to the top of the agenda at many clubs who feel that fast greens are very appealing to casual green fees, societies and members.

Problems with 'Modern' Management

In order to satisfy this twin demand of green colour and fast greens, golf greens must be regularly fed and watered and cut very low. It creates an environment where *Poa annua* thrives, as this species is very tolerant of low cutting heights, and traditional golf green grasses like bent and fescue struggle to survive.

Golfers often perceive 'Augusta-style' turf as the ideal.

Poa annua can produce a good surface at times, but it has many problems; it is very hungry and needs regular fertiliser, it is very thirsty and needs regular irrigation, it is disease-prone and often needs regular fungicides, it produces seed-heads which disrupts surface smoothness.

Bents and fescue are much more adapted to dry, low nutrient conditions and, fescue particularly, prefer a slightly higher height of cut. Green speed is easily achieved with a reduction in mowing heights, but it can also be achieved at higher cutting heights that will not promote *Poa annua* and reduce fescue growth.

Some greenkeepers have tried to resist this trend by presenting traditional golfing surfaces using minimal water, fertiliser and chemicals and focussing on firm, smooth putting greens composed of bent and/or fescue grasses. Some have succeeded, but many more have come under pressure from golf committees who want the 'TV look'. Some have even lost their jobs trying to manage greens in a more sustainable fashion.

This has left most golf courses in the UK with *Poa annua*-dominant greens. Up until now these have been kept alive and healthy using fungicides to cure disease outbreaks, when they occur in our damp, mild autumns and winters.

ADVANCE GRASS SOLUTIONS

Changing Pesticide Rules

Recent legislation has banned the use of these products which can cure disease when it occurs. The only fungicides left now must be used before disease can be seen on the greens. This means fungicides are applied regularly over the whole autumn and winter to guarantee no disease. Many golf clubs were spraying one or two applications of fungicide per year will now need five, six or even more to keep disease at bay to the same standard. At around £750 per application it's an expensive business. Due to environmental legislation fungicides are becoming weaker and arguably less effective over the years. This legislation is vital to protect our green spaces but leaves the golf industry with a big problem to solve.

***Poa annua* suffering with disease**

Creating an Action Plan

We know powerful curative fungicides will never be allowed again and that future fungicides are likely to become less effective. What is the way forward for golf courses?

We need to be able to produce putting surfaces that reward good approach shots, punish poor shots, putt well and can maintain good grass coverage all year round without a reliance on high irrigation and regular fungicide applications. Ultimately, this means producing greens dominated by the 'fine grasses' rather than *Poa annua.*

Changing from *Poa annua*-dominant surfaces to bent or fescue-dominant will take a little time and patience on behalf of the golf clubs and golfers themselves.

Firstly, any thatch build-up needs to be reduced as bents and fescues struggle to grow in the wet environment thatch creates. Thatch can be controlled by mechanical means (hollow coring/scarifying), but also by creating a healthy, microbially-rich soil that degrades thatch at a quicker rate.

Thatch build-up on a golf green

To create this type of soil, the use of carbon-rich organic products to boost soil microbe populations is very helpful. Converting thatch into a rich, beneficial humus will provide numerous benefits such as increased water and nutrient holding capacity without affecting drainage qualities. The soil is a huge untapped resource – a living, breathing,

dynamic biological entity that can help improve plant health and reduce plant stresses and diseases if nurtured and managed well. We cannot rely on the current method of diluting thatch with regular inputs of sand top dressing as quarries are running low on sands suitable for sports turf.

Actively managing soil health by reducing high-salt inorganic fertilisers, less chemical inputs and increasing good-quality organic, carbon-rich products will provide a diverse, microbially-rich soil that is naturally healthier for plants.

It is not easy to break away from the cycle of low-mowing producing *Poa annua,* which in turn increases inputs of irrigation, inorganic fertilisers and a reliance on fungicides to keep this species healthy. In order to get away from use of costly preventative fungicides, we need to look at changing the grass species on our greens.

By reducing surface growth with lower fertiliser inputs thatch production is reduced – only apply fertiliser to maintain surface smoothness – no more! There needs to be an understanding by golfers, committees and management that presenting the current 'norm' of uniformly green, 'lush' turf is not financially or agronomically sustainable for the majority of golf clubs anymore. A move towards, firmer, drier turf that may be a little 'off-colour' is a goal fine turf manager should be aiming for.

The Future

Quality of turf needs to be judged by its playability, rather than purely it's colour. Creating a turf that requires low fertiliser, irrigation and chemical inputs whilst maintaining or improving current playability standards should be the goal.

Golf surfaces don't need to be bright green to play well

Independent research suggests golf greens consisting of bent and fescue provide better year-round playing surfaces than those dominated by *Poa annua.* There will be a few bumps along the road moving away from *Poa*-domination, but the long-term rewards will be a financially more stable industry that manages golf courses in an environmentally beneficial manner.

The next few years will be crucial. Fore-sighted greenkeepers and golf clubs will persist through the transition period towards grasses far less reliant on chemical inputs. There may well be more disease to put up with for a few years, and times when surfaces are not perfect. Complete eradication of *Poa annua* from all golf surfaces is virtually impossible, but domination by finer grasses is. If the ultimate long-term goal is kept in sight, these improvements are achievable.

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