

# A matter of course

Prompt action helped a club when its grass turned orange after insecticide had been wrongly applied, as well as others dealing with more typical golf course problems, writes **Tom James**

**W**eather forecasters predict a hot summer this year and the June / July months are proving their estimates pretty near the mark to date.

Water management is likely to be on many greenkeepers' list of priorities as turf toughs it out during months when the tally of rounds rockets and wear and tear can take its toll on even the most resilient courses.

Part and parcel of healthy turf is sound soil but knowing the best ways to achieve and maintain it may remain elusive at sites beset with challenging subsoil structures and differing maintenance regimes.

The prestigious Royal Automobile Club in Epsom, Surrey, for example, has seen the highs and lows of course conditions in the last few years but is back on track with a pioneering programme of organic soil treatment that had brought its greenkeeping staff such success with transforming unyielding sub-surface conditions.

The club features two 18-hole courses – the Old and Coronation – both set in mature chalky parkland. The site also houses a sports complex and driving range, with some 50,000 rounds completed annually.

A team of 15 greenkeeping staff, including

three full-time mechanics and a course manager, is steering the turf back to prime condition after an uncertain two years of shifting management priorities.

Head greenkeeper Darren Farley described how from 2003 the club had pioneered a programme of microbial soil conditioning in the UK, designed to increase friability, encourage stronger rootzone development and combat fungal infections such as fairy rings.

The Symbio compost teas, organic fertilisers and biostimulants that the club used improved conditions progressively over a number of years, he explained. "Our best year with it was in 2007," he noted, "and was the culmination of a lengthy and carefully-managed process. But management changes saw a shift in maintenance priorities at the site, our turf care regime fell by the wayside, we cut down on the organic approach and soon started to notice the difference."

Fortunately, another change of manager signalled a return to the tried and trusted regime.

"We received our best results with the Symbio products and since implementing the programme again, we are returning to the levels of success we enjoyed previously. It does go to show that not aerating and maintaining healthy soil can have serious long-term effects."

Symbio is a UK biotechnology company established in 1990, predominantly supplying the microbiology and nutrients to create healthy soils in the amenity turf and horticulture sector. The Royal Automobile Club was the first course in the UK to use compost teas in conjunction with a complete Symbio programme that is now in its seventh year of use there.

"It took a while for results to show but once they did, the changes were



Royal Automobile Club course manager Bob Wiles on the fairy ring-free 18th green

unbelievable. Most greenkeepers who visit us can't believe the quality: we get lots of compliments," said Farley. Our compost tea is brewed for 18 hours using water, a bag of the specially-prepared compost containing bacteria fungi, protozoa and nematodes plus biostimulants and a fungi booster, if desired.

"We simply give clubs the ability to have healthy soil," said Martin Ward, Symbio's managing director. "Building up healthy soil through good microbes helps to lay solid foundations for really healthy turf." Soil friability has been shown to be one of the key benefits of creating a complete soil food web. "Golf course soil is often compacted grey or black because of chemical build-up and compaction over time, and is not good for healthy grass," he explained.

Aside from the quality benefits, cost saving is also an issue, especially in the current climate. When the Royal Automobile Club took on the programme in 2003 it saw a dramatic reduction in its pesticide bills.

The club sprays the greens every other week with compost teas, which works well with other fertilisers and growth retardants, he said. "It works best alongside a good maintenance programme and our new general manager David Renton, who was previously a director with American Golf, has really helped us get back on track to instill our routine again.

"By 2007, our greens were up to 90 per cent bent, now after a wet autumn and year with little aeration they are only 40 per cent bent and 60 per cent poa annua, demonstrating how vital it is to not let standards slip and let disease get the better of you."

Like many greenkeepers throughout the UK, dealing with turf disease is often an unavoidable headache for Farley and his team. Fusarium and fairy rings were two of the most common and require "well-planned solutions", which Farley and Ward both advocate.

"Fusarium has reduced but can be problematic in the winter months here, although patches can crop up at any time of year regardless of how good the maintenance programme is," Farley said.

Fairy rings can pose summer problems on

turf. Basidiomycetes, a type of fungi, of which there are some 400 varieties, are the culprits and some 60 can cause the effect. The fungi live deep in the soil and the long strands of fungal hyphae react with organic matter and begin to degrade it, releasing nitrogen, which the turf takes up, developing the characteristic deep green-coloration of the ring.

"There are three types of fairy rings," Ward explained. "The first and most serious occurs in dry soil. The fungi release nitrogen to create green rings and generate a

**"THE GREENS HAD BEEN SPRAYED WITH AN INSECTICIDE AND ACIDIFIER, AND THE GRASS STARTED TO SHOW SIGNS OF STRESS. WITHIN THREE DAYS THE GREENS HAD BECOME HEAVILY BLEACHED AND HAD STOPPED GROWING. WE THOROUGHLY IRRIGATED THE AREAS, BUT TWO DAYS LATER THE GRASS TURNED ORANGE"**

hydrophobic, water-repelling, layer around soil particles. The second causes green rings but very little dry patch and the third only leaves a ring of mushrooms without any damage to the soil. You can also get dry patch without the green ring. Mostly, the fungi do not invade the grass but it is the hydrophobic layer that weakens the grass by depriving it of moisture.

"When two fairy rings collide, they will disappear as the fungi are weak and non-invasive. Colonising the organic layer with good fungi will also banish the ring as good fungi competitively exclude the bad fungi in the same way the rings break up when fairy rings collide."

For clubs wanting to improve the quality of their soil on a smaller budget, easy ways are on hand to encourage beneficial fungi – by aerating regularly and adding good fungi from compost teas or an inoculant," added Ward. "But it's important not to flood the soil with water and kill the beneficial fungi, just enough to maintain growth," he added.

Preemptive use of wetting agents is helpful for all soils prone to dry patch, to remove the hydrophobic film in soils and the waxy proteins that build up around the plant to reduce transpiration.

By combining the right organic matter, and, with a carefully-controlled programme, a course can turn around the quality of its soil in a relatively short time. But if the wrong products are used or in the wrong quantities then its can have disastrous affects.

Meltham Golf Club, near Holmfirth, in the heart of the Pennines, has recently recovered from just this sort of disaster after a contaminated spray application decimated the greens.

The problem occurred at the 700-member club in mid-September 2007. "It couldn't have happened at a worse time," recalled Roger Heeley, the newly-installed course manager. "Not only was the autumn rapidly approaching, the following year was our centenary.

"As soon as large areas started to die off, we realised that we had a major problem. The greens had been sprayed with the insecticide Cyren (chlorpyrifos) along with an acidifier after which the grass started to

## ▶ cutting and course maintenance

show signs of stress, leading me to believe that the application had been made at the wrong rate.

"Within three days the greens had become heavily bleached and had stopped growing. We were advised to thoroughly irrigate the areas to try to negate any overdose, however two days later the grass turned orange and it became clear that more serious damage had taken place".

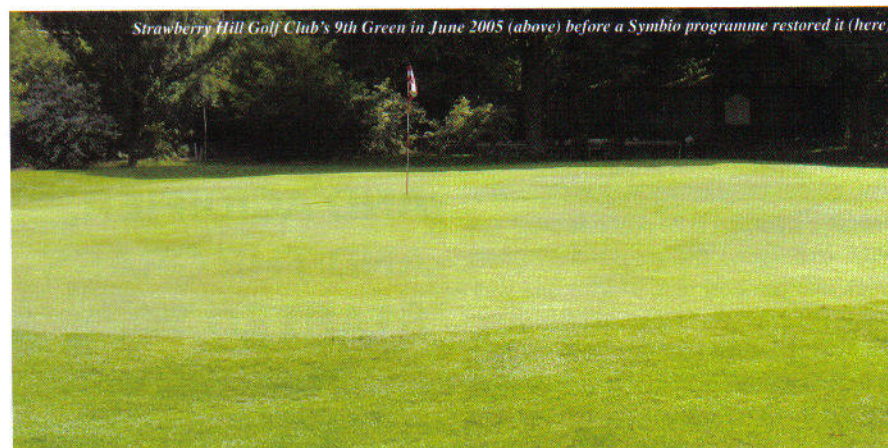
Leaf tissue samples were taken six days after the chemical application was made and samples were sent to a laboratory for analysis. Results confirmed the presence of residues of contact and residual herbicides.

"We contacted local Sherriff Amenity representative Rebecca Turner for advice," said Heeley. "She visited the course with turf grass agronomist Joe Kinder to establish the condition of the greens and to take soil samples for nutritional analysis.

"It was concluded that the main focus should be on rapidly re-establishing the sward," said Turner. "We put together a fertiliser programme that conformed to a low nitrogen input strategy, as recommended by the STRI."

The recovery programme put in place has certainly reaped rewards – the greens returning to use at the end of May 2008, said Heeley. "We have learnt a number of valuable lessons. First, the importance of working with knowledgeable and reputable companies such as Sherriff Amenity. Second, whether damage is caused by accidents, negligence or vandalism, by the time the grass begins to dieback it is often impossible to discover the true reason for the problem and to prevent complete dieback of the sward. Third, prompt action, such as introducing a specific fertiliser programme, and working with a committed team, is the key to a successful outcome."

Such cases where clubs respond positively to problems can stand them in good stead when the green shoots of economic recovery appear, believes Henry Bredin, John Deere's products marketing manager for turf equipment in the UK and Ireland, who offers tips for how clubs can get the best out of their maintenance programme.



*Strawberry Hill Golf Club's 9th Green in June 2005 (above) before a Symbio programme restored it (here)*

"The equipment market is down 37 per cent this year, evidence that the industry has definitely been hit by the downturn," he stated. "Clubs need to be proactive through the recession. Those that confront it face on will be those that are successful. Buying machines at this time might seem a bad move but in the long run it can pay off."

Keeping old machinery may save money now but when times improve and clubs want to sell it for new items, they may well find there's little part-exchange value, he added.

Frequent relief grinding is advisable, Bredin said, "to help keep the cut quality high and increase machine lifetime as always having a perfect cut makes for a quicker job.

"One of the most effective but simple maintenance tips is to use a mower that throws the grass forward when cutting. A similar process to mulching but for a cylinder mower. This means the course can

be cut earlier in the day when the grass is dewier, especially in the morning."

Greenkeepers can be sure of a quality presentation without harming the turf, he added, and tees do not need to be boxed off when cut, saving time and increasing productivity.

"Perhaps the best tip I can give at present is to not be scared of purchasing even in these turbulent times. There are some really good deals around at the moment, the worse thing to do would be to cocoon away from spending. Large repair bills can become significantly bigger than purchase options so buying can sometimes be more cost effective in the long run."

Alive to market conditions, John Deere is developing a system to allow "much more flexible purchase options", Bredin disclosed, which could mean clubs will not have to work solely with their local dealer. Watch this space.