

Feature



GOLF BUSINESS SUSTAINABILITY SPECIAL

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STRESS RELIEF TO ENHANCE TURF...

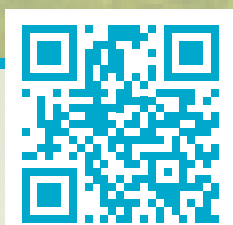
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ATTRACTING WOMEN TO GOLF...

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Quick link to the GreenCast website.

Scan using a QR Code reader on your iPhone, Blackberry or smartphone to be instantly connected.

Stress relief to enhance turf health

Turf stress has a major impact on plant health, and turf playing quality. Understanding the causes and effects are key to managing stress, and minimising its impact. ▷

Turf stress factors

Biotic stress



Disease

Abiotic stress

Physiological



Drought



Heat



Cold



Shade

Environment



Nutrient



Air pollution

Mechanical



Turf maintenance



Heavy play

New combinations of turf agronomy tools could help to alleviate many of the factors that cause stress and enhance turf quality, to deliver consistently improved playing conditions right through the year.

Syngenta research has identified stress relieving properties of some key products that, individually, contribute to improving plant health, but collectively show cumulative synergistic benefits that significantly enhance turf health.

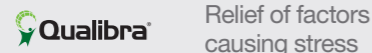
Many of the management practices necessary to create playing surface quality demanded by today's golfer imposes immense stress on turf, along with tough environmental conditions including heat, cold, drought, waterlogging and air quality.

Adopting exciting combinations of new technologies and agronomy techniques can further enhance turf plant health and surface quality to maintain the player satisfaction that is essential for a sustainable business operation.

ENHANCED TURF HEALTH



Direct increase in antioxidants
Relief of factors causing stress



Relief of factors causing stress

Taking the stress out of turf maintenance

A more aggressive summer maintenance programme is now paying dividends of improved playing performance of greens' surfaces and healthier turf on the two 18-hole courses at John O'Gaunt Golf Club, near Sandy in Bedfordshire. ▷

However, Course Manager, Nigel Broadwith (left) warned there are potential repercussions.

“It is a Catch 22 situation, in that we need to do the maintenance to rectify a long-term build-up of thatch that is a key cause of disease, yet the very process puts immense stress on the turf that can itself trigger a disease outbreak.”

To pre-empt the risk of disease and relieve stress on the turf plants he has used an application of Heritage Maxx ahead of the planned maintenance.

“It appeared to instantly stop fungal disease developing, and the turf stayed free of further infection right through the recovery period. In fact, it stayed absolutely clean through to the autumn – with little or no signs of any disease symptoms affecting playing quality.”

Nigel also plans to integrate the maintenance timing into the scheduled Primo Maxx programme, which ensures plants are better prepared to counter any stress imposed.

“We have seen a magnificent result in terms of improved turf health and playability with the Primo Maxx and liquid feed on fairways, especially through the dry weather in the summer,” he reported.



Read more of Nigel's experiences and the science of turf stress on [GreenCast](#)



Managing turf stress more effectively is helping produce consistently better conditions for golfers, reports Nigel Broadwith.

Coping with heat stress

Greenkeepers along the East Coast of Scotland had the chance to experience the potential stress relief offered by Qualibra last season, with a series of user trials during a wet start to the year, followed by a drought period through the summer. ▷

At the Royal Dornoch Golf Club, Deputy Course Manager Scott Aitchison, reported some of his new greens, on the Struie Course, had become hydrophobic and prone to drying out, with intensive aeration the only way to ensure water movement away from the surface. But, following the Qualibra programme, he says: “they have performed their best this season.”

“As the greens matured they may have improved on their own, but maybe not to the same extent or in such a dramatic fashion. The surfaces were firm and the grasses looking as they should. Even better, underneath nothing was arid or powdery, which avoided us having to do a mid-season aeration.”

He also noted a green-up of the surfaces after the first application.

150 miles south along the east coast, Alister Matheson at Cruden Bay Golf Club undertook a comparison trial between a Qualibra area and untreated from the beginning of May through to September. The results showed that whilst hydrophobic dry patch built up to 15% of the surface area on the untreated turf

over the summer, there was no incidence of dry patch in the Qualibra treated area.

As a result, irrigation input on the untreated control area increased to 50mm in the peak of the summer, but only 20mm was required with the Qualibra treatment. Furthermore, Alister reported that both sward colour and density remained consistently higher, and with virtually no change throughout the season.

It was a view reiterated by George Pendrich at Scotsraig Golf Club, a further 100 miles south at Tayport, close to St Andrews.

“It performed well throughout the year, in a variety of weather conditions. There was minimal evidence of dry areas, and no lying water following heavy rainfall.”

Healthy turf was successfully maintained throughout the year, including recovery from another treatment.

George added there were no problems with tank-mixing with other products or with application, with treatments irrigated into greens immediately after each application.

Girls Allowed

Becoming more female friendly could help golf clubs to build their customer base and grow a more viable business for the future. Research has shown women are more inclined to bring along friends and family, which can all generate essential extra income. ▷

The golf clubs move to attract women is most likely to see significant changes to the club's ethos and approach to coaching and family inclusion. However, there will also be implications for course set-up and the provision of golf facilities designed to attract female and family golfers.

The relatively low level of female participation in the UK - women account for just 15% of registered golfers in England and Scotland, according to the European Golf Association - also offer an immense opportunity to grow the game. By comparison, female participation in some Continental European markets is far higher.

The Syngenta 'Growing Golf in the UK' survey could provide some of the answers to help clubs to attract more women. One of the most eye-catching findings was that, of all the non-players who said they were interested in taking up golf, more than half are women; 56%, in fact, which could be an estimated 4.6 million golfers.

So what would encourage potential female players to give golf a try? The survey identified:

- 55% would welcome easy access to affordable golf lessons
- 49% liked the idea of beginner-only mornings

- 47% said they would be encouraged to try golf if it was with friends and family.

The responses reflect women's preference to play with friends and family, and their importance in introducing children to the game. Attracting more young women is a self-perpetuating circle to grow membership, but equally if existing women members start to leave then the chances are it will be a spiral of decline.

With current women golfers, the results revealed:

- 75% of women said they would play less if their friends stopped playing
- 67% prefer to play with only family and friends
- 48% said their children play golf.

Eric Brown, Global Turf Business Manager of Syngenta, added:

"We hope golf clubs and courses will be able to use some of these findings to inform their own decisions and develop customer-centric solutions and services to encourage more women to play golf."



New Survey Results report

The Syngenta 'Growing Golf in the UK' survey questioned 3,500 UK residents, including 1,477 golfers and 2,145 non-golfers or lapsed players. Participants were questioned on a wide variety of related subjects including:

- social demographics and family
- other sports and hobbies
- membership type and courses played
- prevailing club culture
- customer care and club facilities
- standard of course condition

The purpose was to better understand what players wanted, and to then share the results with golf courses to offer solutions for the long-term sustainability of golf as a sport and business.



To download a copy of the results report survey results visit www.greencast.co.uk

Crown attraction



Being outdoors, in the attractive environment of a well-managed golf course, is a big incentive for women to play, according to Crown Golf.

Most of Crown's clubs have a higher-than-average percentage of women players; with some close to twice the national average.

Ed O'Hanlon is Head Greenkeeper responsible for both the 18 and 9-hole courses at Crown Golf's Chesfield Downs. He recognises that many of the women and junior players nurtured by the coaching team on the driving range and par-3 are now fully participating in club life.

"When we get the women here and playing, then we know the kids are going to be in tow during the holidays and after school, he says. "It is great to see the kids coming through the door and out onto the course. You know it's the future of the club assured"."

The Club's nine-hole course is designed and managed to break down some of the intimidation posed by the longer and more challenging 18-holes. Ed reports the short par-3 helps new players to build up their confidence and gets them feeling capable to play among the established members.

"Having the different options for golf means we certainly get far more families playing now," he adds. "And together they spend far more time at the club; whether that be out on the course, the driving range, gym or in the bar - it's all generating more income for the club.

"It also makes the Club a fun and lively place to work and be around."

Feature



GOLF BUSINESS SUSTAINABILITY SPECIAL

Managing a sustainable golf course means looking after the success of the business economics, the local community and the environment for a viable long-term future.

The greenkeeping team is at the heart of ensuring the complete offer can be achieved.



St.Mellion International Resort is an integral part of the local economy. Significant investment, driven by its world class Nicklaus Course, has evolved it into one of the largest attractions in the South-west. The local community has enjoyed significant financial gains, through employment and increased visitors to the area. Effective business practices and environmental policies ensure we can maximise not just sustainability, but also further economic growth.

Mike Bush, Course Manager,
St Mellion International Resort,
Saltash, Cornwall



The Gog Magog Golf Club has an incredible long history and strong tradition. But it has also grown and evolved over time. The membership is drawn from all walks of life, with a diversity that adds greatly to the relaxed and cosmopolitan atmosphere. The Club has thriving Men's, Ladies', Elders' and Junior sections, and we manage the two courses to ensure all players get the experience they want in an environment that is positively enhanced.

Andrew Howarth, Golf and Estates
Manager, Gog Magog Golf Club,
Cambridge



What was once viewed as a social club, North Foreland has now altered to become a proactive business in what is a highly competitive market. Gone are the old days of maintaining the golf course from tee to green; we now look to maintain from boundary to boundary – and in doing so have created a vibrant environment that is more attractive to wildlife, the community and, most importantly, players. The ecological work undoubtedly has an economic value.

Dan McGrath, Course Manager,
North Foreland Golf Club, Kent



Turf Science Live heads to Scotland

All greenkeepers and turf managers can now apply to attend this year's Turf Science Live - the UK's premier turf event showcasing the application of the latest technological innovation and advances in golf course management. ▷

To be held at St Andrews Bay Golf Club in Fife, Turf Science Live will give a practical hands-on opportunity to interact with leading specialists in many aspects of turf management, and find out how these exciting new techniques can enhance your turf playing surfaces.

- **10th June - Turf Science Live Open - available to all greenkeepers and turf agronomists. 10.00am - 4.00pm**

- **11th June - Turf Science Live Invitational - attendance by invitation only. 10.00am - 4.00pm**



Visit www.greencast.co.uk for more information or to register to attend.

Win a place in a fabulous Wentworth Four Ball including dinner and overnight at the prestigious Wentworth Clubhouse

Visit www.thebiggamechallenge.co.uk to register and play

New drive for sustainable golf

Greenkeepers and golf courses that successfully demonstrate combinations of environmental, financial and social attributes that create viable businesses will be championed as part of a new initiative to improve the overall sustainability of the golf industry. ▷

The Sustainability Drive initiative will focus on promoting the sound business reasons for environmental sustainability across the industry, highlighted through real-life experiences of best practice and acclaimed success stories.

The exciting initiative is being led by the European Golf Course Owners Association (EGCOA) and Club Managers Association of Europe (CMAE), supported by Syngenta and in collaboration with the Federation of European Golf Greenkeepers Association (FEGGA). The implementation of the plan and the delivery of information will be provided in partnership with GEO (golfenvironment.org).

Rod Burke of Syngenta believes that bringing together the knowledge and experience of Europe's leading golf associations to collectively support and promote sustainability in golf club



Rod Burke

management will help to enhance the quality of courses, and reinforce the immense ecological and environmental assets they provide.

It recognises that an increase in business efficiency and profitability is vital for the economic viability that is an essential element of sustainability, and which enables courses to deliver desirable environmental resources to the wider community.

Rod adds that it will also strengthen the environmental reputation and profile of the golf industry. Furthermore, it will highlight successes that clearly demonstrate the contribution a well-managed course provides as a social sporting facility for the whole family and a positive ecological resource.

All those involved are committed to enhancing the playing experience and unlocking golf's true potential – including getting more people to play the game and in optimising the environmental benefits golf courses can provide.



"Sharing best practice across the industry could help all clubs to improve aspects of economic, social and environmental management.

"There are so many instances of golf clubs that are already performing exceptionally well in these areas. The Sustainability Drive initiative will help all involved to share experience across more clubs and enhance the skills of club managers, owners and greenkeepers for the future."

Arnaldo Cocuzza,
President, CMAE



"In challenging times, where sustainability is a high priority on the agenda, we see great value in getting golf courses actively involved with the initiative. We will be able to better help EGCOA members across Europe to get involved in the GEO programmes.

"Syngenta also brings added value with its consumer research, providing insights that helps the golf industry to understand the changing customer in a far better way than ever before."

Lodewijk Klootwijk,
Director, EGCOA



"The Sustainability Drive brings the exciting opportunity for the whole industry to work on a common objective of developing strong businesses - with a positive future for players, owners, managers and the greenkeeping teams.

"The pan-European scale and combined approach of the initiative will ensure we can get more people involved and share the best ideas and experiences wider and quicker."

Dean Cleaver,
Executive Officer, FEGGA



Primo use spreads

Andy Baker frequently refers to the conditions at Ely City Golf Club as a 'grass factory'. ▷

For the past eight years Andy has been using Primo Maxx as part of the ongoing maintenance of the greens, to good effect for sward density and consistency. Golfers have commented on the quality of the greens improving and the reduced difference in putting speed from morning to afternoon.

Last season Andy looked to further extend the use across the fairways. Initially the plan was to carry out a trial on three fairways— two that were very fast growing and one with finer grasses that had poorer sward density.

We treated the three at a rate of 1.0 l/ha to assess the potential. But such was the reduction in growth and easing of the mowing regime that within two weeks we took the decision to spray all the

fairways, which we continued to do for the rest of the season, he reported.

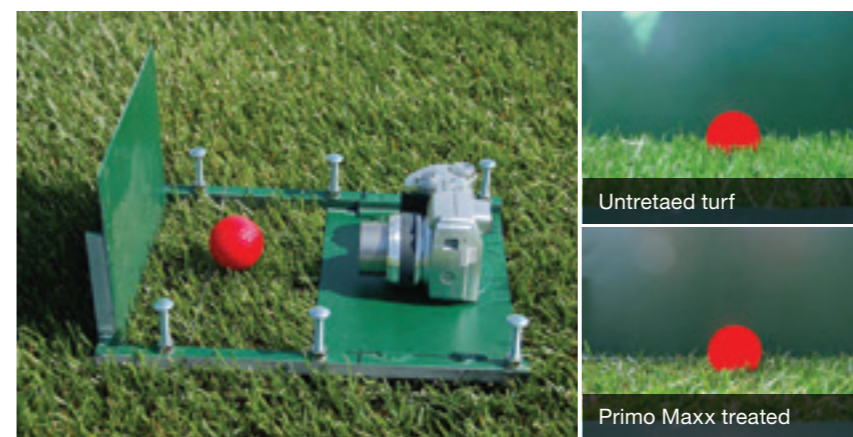
Fairway mowing has typically been reduced from three cuts a week to two. We have also seen distinct improvement in turf density, plant health and rooting – which has been noticeable to us and the players.

Andy calculates that, overall, reductions in labour man hours, fuel use and less wear and tear on machinery cutting servicing costs have added up to savings of around £2000 a year. "The extra hours available were used to carry out the tidy jobs that normally get left – which everybody welcomes."



The fairways at Ely City have been immaculate this summer, with positive comments from the club's members.

Razor-Eye view



Razor-Eye Technology is now being used to assess how a golf ball sits on the turf surface, and how it is presented to players for their shot.

Using a digital image of a golf ball on the playing surface and sophisticated computerized area calculation, it works out how much of the ball is sitting proud of the turf.

This new technique really captures the effect from the players' perspective, rather than simply looking at turf density," reports Rod Burke of Syngenta. "We know from our player surveys that, on the fairway, having the ball sitting up is the number one desirable factor for golfers. Now we can really look at the effect and calculate the benefit."

Results of initial trials in Germany have shown a consistent improvement in ball presentation on Primo Maxx treated fairway turf, with at least 10% more ball showing above the turf, even three days after mowing.

"The increase in turf density from shorter, more compact growth, has always been a key attribute with Primo Maxx to give stronger, more resilient fairway turf.

More significantly, the Razor-Eye has proven that the benefit seen by players is retained for at least three days after mowing. It demonstrates that a Primo Maxx programme creates conditions that will give golfers greater satisfaction.

Razor-Eye Technology is now being utilised in Syngenta research, alongside conventional turf density and leaf turgidity assessments.

Optimum intervals for PGR application

New trials to evaluate the optimum intervals for Primo Maxx application have questioned the practicality of Growing Degree Day (GDD) calculations for use in the UK and northern Europe. ▷

Syngenta Turf Technical Manager, Dr Simon Watson acknowledged that the US model that have advocated treatment when the cumulative GDD reaches 200 should be taken into account with turf growing in perfect conditions. However, factors that influence growth rates, such as moisture availability, nutrition, sunlight intensity and duration all have an impact.

Temperature is one factor in the calculation, but there are many other influences involved that need to be taken into account. Greenkeepers and turf managers should be looking to alter Primo Maxx application rates and intervals accordingly, he advised.

"Assessing growth rates by monitoring clipping yield and visual effects on the turf can develop a more flexible and effective programme through the season," he said.

Syngenta trials by Bioforsk, at the Nordic Stavanger turf research centre, demonstrated a far more complex interaction of temperature, day length and dose rate that all influence the duration of turf grass regulation following PGR treatment.

"Previous experience of using Primo Maxx across Europe has highlighted soil temperatures are the key factor in dictating the start to treatments," he advised. "Proactive programmes can then be tailored through the season according to the interaction of factors that dictate growing conditions in practice."



Visit www.greencast.co.uk or Simon's full advice on Primo Maxx interval timing.

Hold on to water

The reason turf initially starts to yellow off in the summer is typically not lack of water, but most likely restricted nitrogen availability in the leaf, according to Dr Simon Watson. ▷

Since N in soluble form is only available in water, where Qualibra makes moisture more accessible in the soil it should lead to greater nutrient uptake and greater availability in the plant, he says. "This should delay the onset of summer senescence or, where plants have started to suffer, alleviating the symptoms quicker.

"If we can better retain the root structure over the summer - through any combination of actions including Qualibra wetting agent programmes, raising the height of cut, aeration, irrigation, nutrition and Primo Maxx - it should also enhance overall plant health."

Syngenta scientists at the Stein Turf Research Centre in Switzerland are now evaluating the relationship between water retention in the root zone and nutrient uptake. The use of a wetting agent to hold soil moisture more evenly through the soil profile could aide nutrient uptake and the

efficiency of fertiliser applications, reports Syngenta Turf Research Team Leader, Dr Louis Simard.

He reports the enhanced uptake of nutrients could be responsible for the 'green-up effect' seen during greenkeepers' user trials with Qualibra (see page 3); where treated areas have responded with a rapid visual improvement in colour.

"Alleviating hydrophobic pockets in the soil profile, to give better contact between roots and the soil moisture containing nutrients, could improve immediate nutrient availability for the plant," he said.

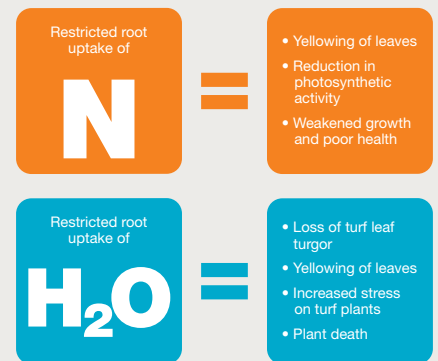
"Over the longer term, better retention of the soil moisture and nutrients in the root zone should lead to greater overall uptake and utilisation," believed Louis. This would also minimise the environmental impact of nutrient loss through groundwater.

More efficient use of available water and fertiliser resources - to get more from less of all inputs - is an important element of golf course sustainability.

Stein Turf Science

New research at the Syngenta Stein Turf Research Centre in Switzerland is looking to assess the effect of soil moisture being distributed more evenly through the soil profile, and thereby increasing the area of root contact with soil water containing nutrients.

The use of Qualibra creates a more even distribution of soil moisture in hydrophobic areas, and thereby along a greater length of the root mass, could lead to a greater nutrient uptake.



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