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The science of turf stress

New research at Harper Adams University College has revealed the potential to reduce the effects of stress and enhance turf plant health with the use of Primo Maxx and Heritage Maxx.

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Enhance the Playing Experience

Keeping players coming back for more is vital for business success. Producing consistently higher quality turf all season long, and the creation of a more enjoyable environment in which to play, is key.

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Integrated solutions for sustainable turf

New integrated course solutions could help golf courses reduce costs and simplify course management, and contribute to an enhanced all round playing experience to attract more players - and their money - to the game, according to Syngenta Global Head of Turf & Landscape, Mike Parkin. He believes this approach will be crucial for golf businesses to fight back from the effects of the economic recession.

He sympathises with golf club managers who are under extremely tight financial constraints. Mike cites recent reports that 50% of UK golf courses were believed to be operating at a loss in 2010. "With the changing dynamics of the industry we envision a much more holistic solutions approach to turf management, rather than a utilitarian product focus," he says.

"These solutions will be based around tools to allow more efficient course management and the potential to improve overall aesthetics, as well as enhance turf quality and playability, which will drive more player rounds and raise revenues."

With turf disease control, for example, Mike believes course managers will look to focus on integrated techniques including nutrition, drainage, aeration and Primo Maxx to produce healthier

and less stressed turf, with greater vigour, better colour and longer roots. Combined with a new generation of turf treatments it will ultimately provide a much more consistent playing surface.

“Adopting integrated course management solutions will ensure inputs are targeted more effectively and at the optimum opportunity, with the aim to get better results from every investment.”



Mike Parkin, Syngenta Global Head of Turf & Landscape

The Business of better turf



The business performance of today's golf club is reliant on turf quality, says Ian Streeter.

West Sussex Golf Club Head Greenkeeper, Ian Streeter, is under no illusion about the constant pressure on turf managers to deliver a high quality playing experience, and the reliance of the whole economics of the club on turf quality to maintain incomes. He is only too aware that the demands of players are changing and, to attract new club income as well as retain members, requires year round better playing surfaces.



Photo: leaderboardphotography.com

The 2011 English women's amateur championship played out on the high quality greens of the West Sussex, created by Ian Streeter and his team.

When the Club questioned its members about investment and future direction, it was clearly apparent the overriding message was that they wanted turf quality; it was the playing surfaces where they wanted the money spent.

For Ian and the team it was extremely reassuring to hear and gave them the confidence to get on with the job. Investment in

water storage and irrigation has already paid dividends over the dry spring, in combination with a return to using wetting agents and a Primo Maxx programme across the whole course to make better use of the resource and to create better playing surface conditions.

Read the full story of Ian Streeter's experience on www.greencast.co.uk

Attractive proposition

Operation Pollinator offers golf clubs an exciting proposition to attract new players and involve existing members more closely in environmental initiatives that enhance their golfing experience.



Operation Pollinator Workshops, led by Bob Taylor of STRI (centre) have provided over 200 greenkeepers and club managers with a detailed insight into the project and its potential, along with practical advice and demonstrations on how to achieve the results.

Operation Pollinator Club

There will be an 'open house' Operation Pollinator Club at BTME on Wednesday 25 January. The Club will give both participating and interested clubs the chance to meet and share experiences of what they have learnt and best practices developed. If you have not yet signed up, but would be interested in attending the meeting, please email:

operation.pollinatoruk@syngenta.com

For more information go to www.greencast.co.uk/uk/environment

Not only does Operation Pollinator give greenkeepers and club managers the technical guidance and training to successfully establish and cost effectively manage the dedicated ecological habitats on their golf courses, but the GreenCast website hosts a suite of ideas and tools to help clubs market their involvement in the project.

Syngenta Turf & Landscape Market Manager, Rod Burke, highlighted the Operation Pollinator logo and project is a widely recognised brand through extensive media coverage. "Golf clubs can take advantage of the ecological empathy of players who want to be involved with clubs that actively promote their environmental credentials.

“With the GreenCast 'Marketing your Club' resources we aim to provide ideas and tools to help clubs develop a stronger business through their involvement.”

Paul Worster, Course Manager of Minchinhampton Golf Club in Gloucestershire welcomed the valuable information and advice provided. "The workshop was fantastic", he reported. "We will certainly be signing up and already have some plans as to how we plot out the site."



John O'Gaunt Golf Club in Bedfordshire was the first club to sign up for Operation Pollinator. Greenkeeper Steve Thompson (above) was presented with a Bee Hotel by Rod Burke, to create a new nesting habitat for Mason Bees as an additional focal point for club members.



Interpreting disease forecasts

Knowing when there is a high risk of disease infection can help to better time fungicide application ahead of attacks, and provide the optimum protection through key high risk periods to maintain turf quality.

GreenCast uses a combination of local weather forecasts

and proven disease models, tested by STRI, to predict the risk of infection for a range of common turf diseases. The system creates a daily risk forecast for the following five days, with progressive categories, from low to high risk.

Where there is a series of medium to high risk days

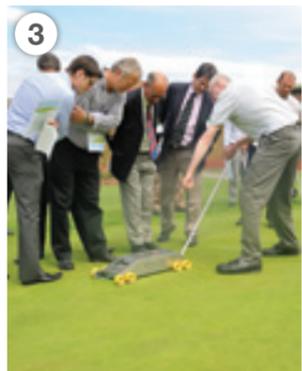
predicted, application should be considered, taking into account prevailing conditions and risk on other days. Remember, that disease pathogens will build-up in conducive conditions, so a week of continuous medium risk, for example, may see damaging infection occur, especially on more susceptible surfaces. Using GreenCast on a daily basis will generate a picture of how seasonal disease pressure is developing, giving greenkeeper's the



power to adjust their spray programmes accordingly.

To view your free local disease risk forecasts, logon and register at www.greencast.co.uk or www.greencast.ie and view 'Five day disease and weather forecast' from the top menu bar.

Turf Science Live report



Turf Science Live 2011, organised by Syngenta and Everris (formerly known as Scotts), was hosted at The Belfry in the West Midlands. Greenkeepers, turf managers and agronomists had the chance to see some of the latest innovations in turf science research and developments being put into practice in a series of demonstrations and practical stations, with the chance to question presenters and discuss with other greenkeepers.

1 Syngenta Application Specialist, Tom Robinson, highlighted the importance of sprayer calibration to ensure consistently accurate results. He demonstrated how the Calibration Checker System (pictured) can be used to check and adjust sprayer output in

just a few minutes. He also showed the Syngenta Turf Foliar Nozzle in operation and, using water sensitive paper, explained how the angled spray tip can provide better all-round coverage on an upright grass leaf, as well as improving penetration of the thatch

layer that could help target better results with Medallion TL application this winter.

2 New over seeding techniques for faster transition to desirable turf grass species and the quick restoration of playing surfaces were demonstrated by R & K Kensett Sports and Everris turf consultant, Simon Barnaby. Research for the Everris iTurf programme has created new recommendations for over seeding operations, including the use of wetting agents to improve water holding capacity for new seedlings, ensuring the correct nutrient availability with slow release fertilizers and Primo Maxx applications

to suppress completion and encourage seedling rooting.

3 Greenkeepers need to look for new techniques to sustainably manage faster surfaces more effectively, as well as focussing on the quality of ball roll and, most crucially, the trueness of the surface, according to STRI agronomist, Henry Bechelet (pictured). At Turf Science Live he demonstrated that Primo Maxx treated greens cut at 4mm and rolled with a turf iron could run faster and smoother than when cut at 3mm alone. Co-presenting the demonstration, Ed Carter of Everris, added:



“



The beauty of Primo Maxx is that it can relieve pressure at almost every point of turf surface

management. Not only does it improve the turf plants' ability to withstand the impact of stress through improved rooting and physiological effects, but it will also enhance turf playing quality. It also gives greater flexibility and cost savings for cutting and turf management.”

4 Greenkeepers could manage stress in turf plants more effectively with well-timed applications of Primo Maxx growth regulator and Heritage Maxx fungicide, according to initial indications of a Harper Adams University College research project. Turf specialist, Dr John Reade, reported the project is giving a valuable insight into the reaction of turf plants to stress. “Excitingly we are looking to see what is going in the plant before we get to a situation where it is visibly suffering from the effects of stress. That could give greenkeepers and agronomists the chance to act and alleviate problems before they arise. It may be that timely applications of Primo Maxx and/or Heritage Maxx may be a viable route to maintain plant health and turf quality”. PhD researcher, Harry Mbah, will also be undertaking further

studies with greenkeepers, to look at the primary causes of stress in practical golf course management, along with looking at the implications for playability and the delivery of high quality surfaces.

More information on the Harper Adams turf stress management research will be published on the GreenCast website during 2012.

5 Over 70 greenkeepers and agronomists who attended Turf Science Live took the opportunity for a course walk around the infamous Belfry Brabazon Ryder Cup course, in groups led by Kenny McKay, Director of Golf Courses and Neil Smith, Head Greenkeeper.

Companies and researchers presenting at Turf Science Live included:

- Syngenta
- Everris
- Kensett Sports
- Ransomes Jacobson
- Harper Adams University College
- Complete Weed Control
- STRI
- Rainbird

Syngenta and Everris would like to thank The Belfry for hosting Turf Science Live and the greenkeeping team for preparing exceptional facilities.

ITM plans for better turf health

In the first of a series of Turf Talk ITM features, Dr Simon Watson explains the principles of programmes, and how it can help to deliver better results:

Integrated Turf Management (ITM) gives greenkeepers and sports turf managers the chance to maintain turf in optimum health and achieve the maximum playability – in terms of surface quality and resilience to damage.

be used to reduce the turf plant's susceptibility to the effects of stress, disease and pests. ITM options include aeration, organic matter control, irrigation, drainage and the manipulation of light and/or air movement. Two key areas of ITM are nutrition to keep the turf healthy and fungicide application to protect the turf from disease infection.

There are many conventional agronomy tools and techniques in the ITM 'toolbox' that can all

Providing adequate nutrition to the turf is about finding a balance; too much nutrition can result in a turf that is more susceptible to diseases, whilst too little can also leave turf vulnerable to disease infection. Nutritional programmes have to achieve the balance that delivers turf in optimal health, but without over-feeding or under-feeding.

GreenCast ITM advice for Fusarium Patch

- Remove surface moisture
- Reduce thatch
- Improve airflow
- Discourage *Poa annua*
- Avoid lush growth



New trials by Syngenta, in conjunction with the Everris iTurf programme, will demonstrate how appropriate nutrition combines with fungicide applications to deliver an integrated programme to disease control at vulnerable times of the year.

However, there will be times during the year when disease pressure will be such that turf will need to be protected with fungicide applications. The key is to understand the particular risks for each disease, knowing which fungicide to use at the appropriate times of turf growth, and ensuring it is applied at the

right time and in the right way.

If you get all the facets of ITM right, turf will be healthier, less susceptible to disease and better able to recover from attacks. Furthermore, when a fungicide is applied during high risk conditions, it will work more effectively and give longer lasting protection.

For ITM advice and information to tackle specific turf diseases, visit the GreenCast website Disease Notes.

Root out water use

Water use efficiency will be one of the major factors influencing turf management over the next decade.

Wetting agents are now a routine management aide for greenkeepers to mitigate the effects of damaging dry patch and make better use of increasingly scarce and costly water resources. And trials have shown that using Primo Maxx in conjunction with a wetting agent can improve water efficiency, by fully utilising the enhanced rooting it promotes.

Dr Simon Watson reports exceptional improvements in turf plant root development with applications of Primo Maxx – creating deeper and denser root systems.

“Stronger rooting enables the turf to seek out available soil moisture more efficiently and from deeper within

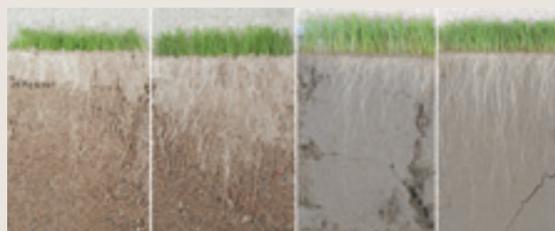
the root zone – making more effective use of irrigation and rainfall.”

“Coupled to that, the physiological effects of Primo Maxx means the plant is not only able to utilise water more efficiently, but is also rendered more tolerant of the effects of dry weather stress”. Greater root mass means Primo Maxx treated turf is better able to recover from drought effects or traffic and wear stress from heavy play.

Turf managers report Primo Maxx programmes can increase root penetration by over 50%, with even greater responses in stressful growing conditions. Alan Ferguson, who now manages the England training ground for the FA, recalls his experience of Primo Maxx use at Ipswich Town. He saw rooting on the main pitch increase over 75% and

Primo Maxx enhanced rooting

New work at the Syngenta Turf Research facility at Stein in Switzerland has shown the root enhancement effects of Primo Maxx treatment on establishing seedlings. The research has shown significantly greater root mass and rooting depth in both sand construction and loam soils. The studies looked at turf plant performance under drought stress conditions and the results for nutrient uptake. Also notable was the improved soil stability with greater rooting, along with the colour and compactness of the treated turf. Further research is being conducted to assess the combined effects of Primo Maxx programmes and wetting agents.



Untreated Primo Maxx Untreated Primo Maxx

Dr Simon Watson will be conducting a BIGGA Continue to Learn seminar on enhancing water use and wetter technology at BTME 2012, on Wednesday, 25th January at 2.40pm.

extend to well over 250mm on all of the club's training pitches - a sure sign of good plant health.

Simon believes that taking stress off the plant with Primo Maxx will also enable it to support a greater root mass through the summer – when wetting agents can have the greatest effect.

STRI trials results have identified up to 20% greater water efficiency with Primo Maxx, citing improved rooting for access to deeper soil moisture, along with smaller leaves with less surface for transpiration, giving improved drought tolerance.

Proven winter disease control

Greenkeepers and sports turf managers could target the most damaging winter disease attacks more effectively and preserve their turf quality by hitting Fusarium Patch pathogens before they have the chance to cause damage, advises Syngenta Technical Manager, Dr Simon Watson.



Jim Brown, DeVere Oulton Hall

Simon Watson reports the fast activity of Medallion TL on the leaf, in the thatch and at the soil surface has created the opportunity for exceptional levels of disease control, and new levels of extended protection through the most challenging winter conditions.

applied before periods of high risk show six weeks or more of protection, which was quite exceptional in the conditions.”

Jim Brown, Golf Course and Estate Manager at DeVere Oulton Hall (above), was one of those who had the chance to trial the innovative new fungicide. He grabbed the chance of a thaw in the cold weather as a window for fungicide application, under high Fusarium risk conditions.

The Medallion TL greens stayed checked and controlled,” reported Jim. “I was very impressed by the control of the disease present and its performance in such low temperature.”

“The experiences of last winter, where surfaces may have been covered in snow for weeks at a time, revealed terrible losses on unprotected turf when the snow cover melted. However, the reports from trials with the new Medallion TL fungicide



John Parr's experience at Exeter highlights the ideal potential for Medallion TL through December or January, during periods of high disease risk to prevent attacks and protect turf quality.

At the Exeter Golf and Country Club in Devon, Course Manager, John Parr, found that Medallion TL applied at the very first signs of infection immediately stopped further disease development. On the untreated green, infection continued to spread on untreated greens. Both sward density and turf quality

were maintained at consistent 9/10 on the treated greens.

Find out about the experiences and read comments of the user trialists on golf courses and sports pitches last year on <http://www.greencast.co.uk/uk/news/product-news/medallion-tl-user-trial-report>

Sprayer set-up calculators



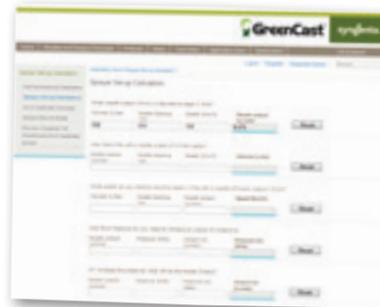
Calculating your water volume application during calibration is critical for accurate spray application.

The GreenCast Application Zone has a clever set of automatic calculators where, if you know your forward speed, nozzle spacing and required water volume, it

will instantly tell you how much output you should collect from a nozzle during calibration. Also, if you know the output from the nozzle and your forward speed, it will tell you exactly what your water volume application rate is. Using the calculator, you can then infinitely adjust your forward speed and/or pressure, to deliver precisely the right water volume.

To further aid your sprayer calibration, there's an easy to follow Technical Update, downloadable from the website – Sprayer calibration for accurate application

The sprayer set-up calculators are available free to all greenkeepers and sprayer operators on www.greencast.co.uk/uk/application-zone



Reduced water volume applications

Medallion TL is one of a new generation of Syngenta turf products with recommendations for lower water volume applications where appropriate. The label rate is for water volumes from just 125 l/ha, up to 500 l/ha.

Using a lower water volume can improve spray retention on

the leaf surface, according to Syngenta's, Tom Robinson. He reports extensive trials have demonstrated that fungicide application at lower water volumes of 125 to 250 l/ha can actually improve product performance and levels of foliar disease control, compared to conventional water volumes of 500 l/ha or more.



Operating at lower water volume means less fills required and more area covered per tank – which will achieve significantly higher sprayer output per hour, as well as less disruption to play.

Customer care from course to clubhouse

Syngenta may be a young company - not breaking into the UK golf market until 2005 - but in those six years many Course Managers have come to rely heavily on the products that it has developed and services that it provides. Writes BIGGA Communications Manager, Scott MacCallum

With its turf management product range and back up services like the GreenCast website, innovative nozzle application technology and environmental initiatives, the days before their existence already seem like a distant memory to many grateful turf professionals.

Syngenta's Turf Market Manager, Rod Burke, explained: "We have always seen ourselves as solution providers, rather than just selling a product. We work hard to produce good products, provide the after sales care and build relationships with our customers. It also helps us because we get feedback from the customer about where we need to go and the new products we need to research."



Customer feedback is an essential part of Syngenta developing new solutions, according to Rod Burke.

Product innovation

That effort is appreciated by people like Andrew Howarth, Course Manager at Marriott Hanbury Manor Hotel and Country Club. He has used Syngenta products almost as long as they have been available in the UK, and provided one of the trial sites for the recently-launched Medallion TL.

“It snowed the very next day after applying Medallion TL and the course was covered for the best part of four weeks, but when it cleared the treated green was perfect.”

Investing in quality turf

Andrew was also one of the first to use the growth regulator, Primo Maxx, which has perhaps left its mark on the industry more than any other product in the last 10 years.

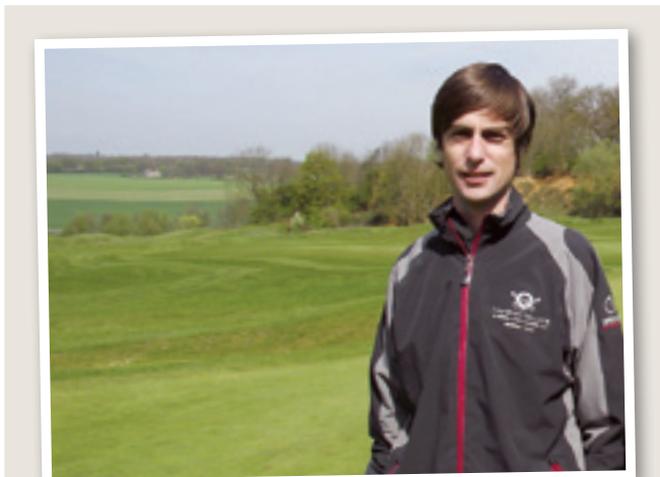
"It has made a huge difference in terms of quality of surface, as well as savings in manpower as a result of the growth regulator element of it. I have to say that it has done everything that we wanted it to do and we've got more out of it the more we have used it and learnt about it," explained Andrew, for whom quality at such a high profile golfing venue is of prime importance.

Rod highlighted that Syngenta has done a significant amount of research aimed at putting together a persuasive case for golf clubs to

invest in turf management - clearly demonstrating the benefits and value created by new solutions and techniques to bring an economic benefit. "We provide the tools for course managers, like Andrew, to take a proposal to their club management to persuade them to move forward on a programme of investment in turf quality."

See Syngenta at BTME

BTME at Harrogate in January 2012 gives you the chance to see how the company's products and services can help to enhance the playing experience for all - and keep them coming back for more. Visit us and talk to the team on stand **B38b**.



Andrew Howarth says he uses the GreenCast website every day.

"We very much operate on a preventative basis, but we aim to be highly targeted so tools like GreenCast are great," said Andrew, who admits to

visiting the site at least once a day. "It's great to have somewhere to go specific for turf management and which has so much useful information."

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