

TURF Talk

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Head Greenkeeper, Martin Mewett.

Cutting the time of fairway management

Time spent mowing effectively halved, from over 40 hours a week, to between 16 and 20 hours.

COBTREE MANOR PARK, near Maidstone in Kent, plays host to over 40,000 rounds of golf a year, from a combination of members and Pay-n-Play visitors. And with the huge number of other golf courses in the area – some 12 courses in a 15 mile radius – Head Greenkeeper, Martin Mewett, is only too aware of the need to provide high quality playing conditions all year round.

In fact, the turf quality of the Maidstone

Borough Council owned course (above) is quite exceptional and would far surpass many more exclusive clubs, reports John Noyce of Scotts. What is more, Martin achieves it with just four grounds staff – which equates to over 12,500 rounds per man, he adds.

“We have to look for all possible labour saving opportunities,” highlights Martin. “Trials with Primo MAXX have shown we can keep the fairways and semi-rough in better condition with far less cutting, and with greater flexibility in the mowing regime.”

Martin calculates that since starting to regulate the fairways with Primo MAXX

the time spent mowing the relatively short course, of just under 5600 yards and with narrow fairways, has effectively halved, from over 40 hours a week, to between 16 and 20 hours.

“Without using Primo we would be continuously mowing and causing disruption to players. The reduction in mowing means that we can devote more time to other essential course maintenance.” He points out that it also gives the chance to mow when conditions are better, and avoid times of heavy play or competitions.

The additional benefit that Martin has found is the reduction in clippings with each cut. He reports the cut is cleaner and, in wet weather, minimises any balling up and drop off of clipping lumps during mowing. ■

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USER TRIAL

50% reduction in the frequency of mowing

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LABOUR AVAILABILITY
Up to 20 hours per week

FAIRWAY MOWER COSTS
Down £4000 a year

SYNGENTA TECHNICAL MANAGER, Simon Barnaby, reports results of extensive Primo MAXX user trials on golf fairways have shown an average 50% reduction in the frequency of mowing to maintain the same turf height.

Furthermore, the quality of the turf is improved, giving a better ball lie that results in faster play and reduced damage from divots and wear. Improved rooting also makes turf more water efficient and less susceptible to drought.

Simon adds that in addition to the time saving and quality improvement, Primo can bring significant cost savings. With a fairway mower typically costing £9/hr to run, turf managers could save up to £4000 a year through a reduction in fuel, repairs and wear and tear. "Fairway mowers typically using around six litres of fuel an hour, saving 20 hours a week can significantly reduce costs and the carbon footprint of turf maintenance."

He advises fairway growth regulation applications usually start in mid to late April, or once turf starts actively growing – however greenkeepers should be ready to start sooner if spring grass growth is early. Typically the programme continues

every four to five weeks through the growing season, although application intervals may be increased if turf growth slows during dry summer months.

"The aim is to keep fairway turf in regulation right through the season, to maintain the reduction in cutting interval and achieve the greatest quality enhancement," he says. "Where fairways are being cut down to 10mm or 12mm, trials have shown that Primo MAXX is best applied more frequently, but at a lower application rate; overall the season-long total dose will remain broadly the same."

Simon points out that further benefits noted by turf managers are a distinct reduction in the stalking of turf grass species in the summer, and that stripes and patterns cut into the slower growing treated fairways remain clearly visible for longer. ■

Application recommendations

<p>For fine fairways</p> <p>Primo MAXX at 0.8-1.6 l/ha</p> <p>Maintain cutting height at 10-15mm</p>	<p>Predominantly Rye-grass fairways</p> <p>Primo MAXX at 1.6-2.4 l/ha</p> <p>Maintain cutting height at 12-18mm</p>
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ALAN FERGUSON, award-winning head groundsman at Ipswich Town FC, is more confident than ever about the success of the forthcoming turf rejuvenation at the club's training ground and Portman Road pitch.

Over seeding success for pitch renovation



Hosting some 1,600 training sessions and 200 games a year, the training ground's 11 pitches were showing visible signs of wear and tear come spring time. "It's a heck of an amount of football on the pitches. The maintenance has to fit in around the training schedule of 10 teams between the academy and the professional squad," he says.

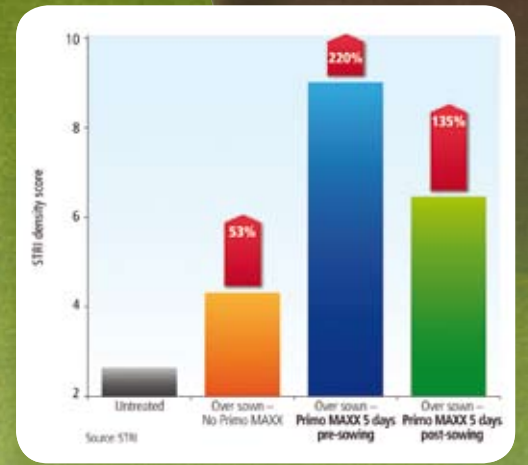
Following the successful use of the turf growth regulator Primo MAXX, Alan has settled on an effective turf management programme, which also extends to maintenance of the prized Portman Road pitch, which he says can stage up to 50 matches every season. He believes over seeding is integral in helping to improve the quality of existing turf playing surfaces, including the introduction of more disease and drought tolerant grass species.

In his trials, results from over seeding were dramatically improved by using monthly applications of Primo MAXX at 0.8 litres per hectare from March through until late October. The effect was to reduce competition from the existing sward, enhancing the new seeds' development and leading to denser grass with better rooting.

Alan also points out that the turf growth regulator has proved itself on the main Portman Road pitch, where the microclimate is markedly different from the training ground. The stadium stands limit the sunlight and air circulation reaching the pitch, creating tougher grass growing conditions. "It has been particularly impressive," he says. "It's the first chemical product that has come along that has had quite such an impact." ■

Managing mowing

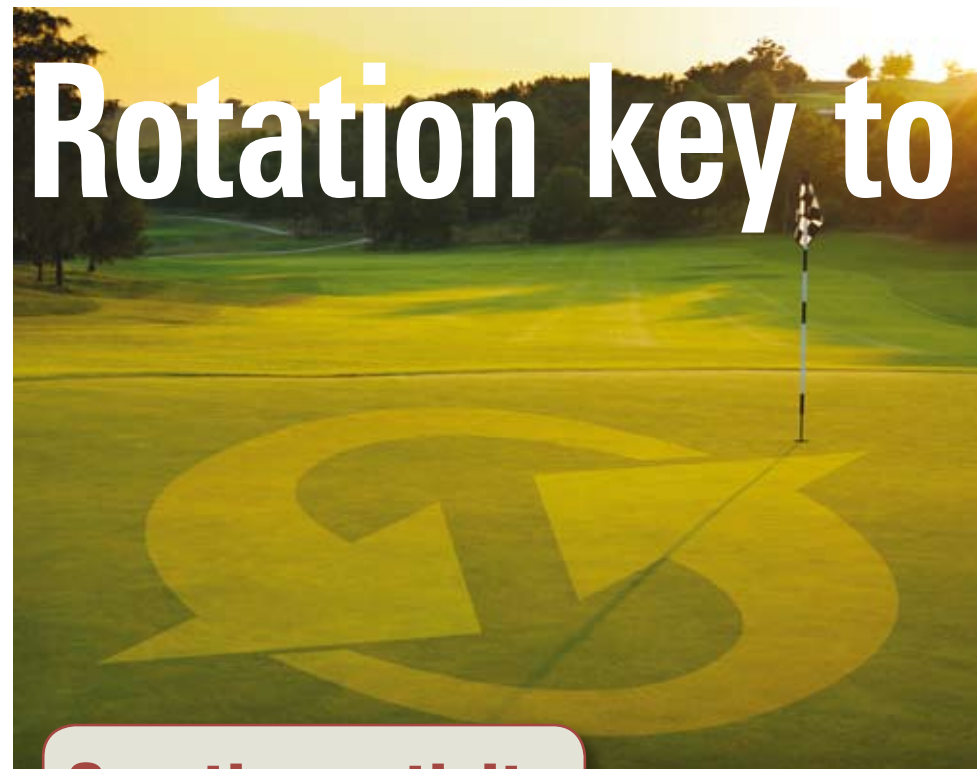
NOT ONLY has the success of the over seeding improved, but Alan Ferguson reports the regular Primo MAXX applications have eased the burden of mowing on Ipswich Town's extensive training ground site. "We are managing a Premiership-quality facility, but on a Championship League budget. The Primo programme gives us the time to undertake necessary renovation, whilst keeping on top of the continual mowing, which was proving an impossible challenge with the labour available. ■



STRI trials

THE SUCCESS of Primo MAXX in over seeding turf has been borne out in scientific tests carried out by the Sports Turf Research Institute. Ruth Mann, senior plant pathologist at the STRI who conducted the trials, reports an application five days before over sowing, after initial scarifying, created the best results.

Ruth insists the product can be a real help to groundsman in their efforts to improve football pitches during over seeding programmes. "It helps to hold back the growth that is already there, and allows seedlings to germinate more successfully because there is more sunlight getting to the seed." ■



Rotation key to better disease control

lower cost and with fewer overall fungicide applications, according to Syngenta Technical Manager, Simon Barnaby.

THE KEY to success is selecting the right fungicide, and applying it at the right time. "Turf managers need to be prepared to make changes in the way that they approach disease control; a proactive fungicide programme is about Rotation, Rotation, Rotation."

Reliance on the routine use of one fungicide is a risky strategy that will inevitably lead to reduced efficacy, he warns. "Understanding how each fungicide works, the pathogens on which it is most effective and the timing at which it is best applied are all crucial in improving product selection."

Preventative action

The best results for turf quality can be achieved from preventative application, targeted when the risk of disease infection is high, but before it has had chance

to take hold – if you are treating the visible signs of disease, the damage to turf quality will already have been done.

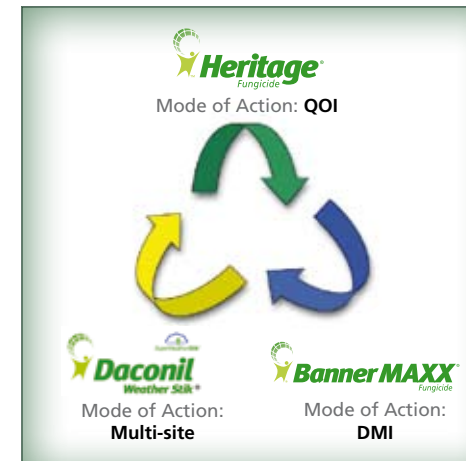
"If you can prevent disease building up and damage occurring, the benefit of any fungicide application will last longer and the turf quality will be better. Trials have shown well timed preventative application can give disease protection for 28 days or more."

STRI trials using the GreenCast disease prevention forecasting system – www.greencast.co.uk – have shown that with the preventative fungicide, Heritage, it is possible to reduce the overall requirement for fungicide, whilst delivering improved turf quality.

STRI turf pathologist, Dr Ruth Mann, believes the use of a preventative fungicide, applied at the right time, has a huge influence on effective disease control, and is an important step in enabling turf managers to be far more pro-active in their approach.

"GreenCast will help enormously in getting application timing right to achieve the best turf quality, and provide the justification for spraying decisions to achieve the most cost effective results," she adds.

Ruth urges turf managers to select a fungicide with a different mode of action for each alternate application through the season. Simply changing the brand or the active ingredient may not be sufficient, since some actives have the same mode of action.



The Syngenta turf fungicide range has been developed to enable turf managers to pro-actively switch between products and actions throughout the season, and provide high levels of control at all stages of the disease cycle.

The highly systemic Heritage is most appropriate in the spring, summer and early autumn when turf is actively growing and will continually move the disease protection into new growth, he advises. Daconil Weather Stik has powerful contact activity to hit and stick to turf leaves in the winter; whilst Banner MAXX has both contact and systemic activity, offering fast control of a wide range of turf diseases.

Long-term strategy

Importantly, Daconil Weather Stik has a unique mode of action to tackle a broad spectrum of turf diseases. Furthermore, it is the only fungicide officially classified with a low risk of resistance developing – which makes it an important tool for turf managers to incorporate throughout the season to rotate activity and assure long-term effective results.

"In future turf managers need to adopt a robust strategy of using different fungicides, and selecting the most appropriate product to target specific diseases and risks at each application. With GreenCast they can assure they are going on at the best possible time to achieve the best results." ■

Curative activity

SIMON BARANABY highlights that whilst prevention is better than cure, if disease has hit and turf managers are looking to stop infection spreading, then trials have shown that Daconil Weather Stik can give effective curative activity on aggressive turf diseases, including Fusarium Patch.



"Daconil Weather Stik trials on high quality turf have consistently shown over 87% disease control, compared to untreated – preventing turf loss that could be slow to grow back and can leave surfaces vulnerable to irreparable damage." In the trials assessments, Daconil Weather Stik outperformed iprodione for control of Fusarium Patch by an average 17%, with instances of over 30% better control from the new product. ■

NEW Guide to Turfgrass Disease Control

SYNGENTA has published a new Guide to Turfgrass Disease Control, containing all the detailed information to enable turf managers to make more effective decisions on disease control and create better quality playing surfaces.

Embracing the principles of Integrated Turf Management (ITM), the Guide addresses key areas of risk assessment, identifying potential problems and selecting the most appropriate course of action to minimise turf damage.

Syngenta Professional Products Manager, Simon Elsworth, reports the guide is the first time all this valuable information has been consolidated into one, simple to follow and easy to use format for turf managers that will help them stay ahead of the game. "The guide has been welcomed by turf managers and advisors, and is now being widely used across the industry," he adds.

Wall Poster

To accompany the guide, Syngenta has produced a colourful wall poster to remind turf managers of the key points to consider ■

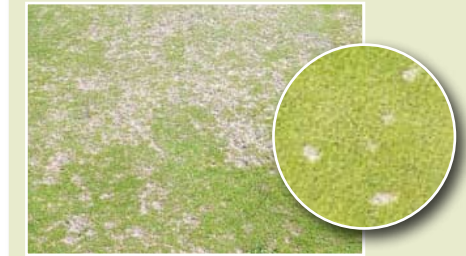
For your copy of the Syngenta Guide to Turfgrass Disease Control and poster, call 0800 652 4216 or email customer.services@syngenta.com. The guide can also be downloaded from the dedicated turf management web site, www.greencast.co.uk

Disease Profile

Dollar Spot

Sclerotinia homoeocarpa

DOLLAR SPOT is an increasing problem on UK fine turf. Infection creates pale bleached leaves on affected plants in summer, which can quickly spread to create characteristic white spots in the turf. Infection can spread to cover significant areas, affecting turf playability, making it more susceptible to wear and spoiling the visual appearance.



High Risk situations

- Temperatures above 20°C
- Wet surface conditions – including dew
- Shaded/sheltered greens with reduced airflow
- Low fertility situations
- Low cutting height
- Slow growing turf
- Fescue grasses are generally more susceptible

All turf surfaces can be attacked, with effects most noticeable on the fine turf of golf greens, tees, fairways and bowling greens.

Dollar Spot is most likely to break out when daytime temperatures are above 20°C, with highest incidence from June to September. Thundery or humid conditions increase risk. Climate change is expected to increase the Dollar Spot risk period and severity of disease attack.

TREATMENT

- Ensure turf receives adequate nitrogen.
- Remove thatch and aerate to avoid compaction.
- Switch greens in the morning to remove dew.
- Irrigate less frequently, but with sufficient water to reach down into the rootzone.
- Use GreenCast daily to forecast the risk of disease and enable more effective timing of preventative fungicide applications.
- Apply Banner MAXX for systemic protection. Alternate with Daconil Weather Stik if weather conditions remain conducive to disease.
- Primo MAXX programmes allow cutting height to be raised on greens and tees to reduce risk, whilst maintaining ball speed and improving turf quality.

For further information and advice on tackling Dollar Spot, see www.greencast.co.uk



Higher water volume gets to the roots

With very dense, fine turf playing surfaces a higher water volume, such as 800 – 1000 l/ha, can help to achieve better penetration. Wetting leaves to the point of run off will carry the fungicide right down to the base."

Nozzle choice can also make a significant difference in successfully delivering spray to the target zone. Fine



droplets can be captured and held on the leaf more effectively for foliar fungicide and most herbicide applications, whilst big droplets are expected to give greater spray penetration, he says.

In reality, the nozzle sizes required to deliver a water volume of 1000 l/ha are

going to be coarse with big droplets.

Tom points out that where Heritage has been applied at high water volume to reach the base of the plant, the highly systemic fungicide will still be adsorbed and move up into the leaves to give very good control of foliar disease. "The genuinely systemic nature of the product means that the active ingredient will continue to move up and continue to protect leaf growth, unlike other strobilurins in the market. It is less likely to be mowed off in the first few cuts after application on rapidly growing turf."

He adds that the scientific approach to turf application research being undertaken by Syngenta is set to deliver significant advances for turf managers, both in terms of improved performance as well as practical advantages. "We are constantly looking at ways to ensure all products are being used most effectively, so that turf managers can achieve the best possible results from the minimum inputs necessary. Developing new application techniques and tools is part of our approach to good stewardship." ■

SYNGENTA RESEARCH into spray application techniques to get the best results from turf fungicides has shown that, for Heritage foliar disease treatments, reducing the water volume, to as low as 200 – 300 l/ha, could help to increase spray retention on the leaf, produce outstanding disease control and enable sprayer operators cover the ground faster, achieving more timely applications.

But for summer Heritage applications primarily aimed at Fairy Ring and Take-All, operators should maintain a high water volume of up to 1000 l/ha, advises Syngenta Application Specialist, Tom Robinson (above).

"With these soil-borne and basal diseases the aim is to get the spray to the base of the plant and the soil surface.

Primo use spreads



EXTENDING the use of Primo MAXX into new areas is changing the way Fulford Heath Golf Club Course Manager, Kim Blake, approaches turf management of the West Midlands course. After using Primo MAXX successfully on the greens and tees, last year he decided to treat the fairways as well.

"We instigated a Primo programme for the fairways, with three applications during the season," reports Kim. "The results have been excellent. We have benefited from a denser sward and improved playing surface.

"During wet periods over the summer, we were also able to miss out a cut, but still maintain good surface conditions without long grass causing problems."

Due to the success of the Primo treatments, Kim is looking to increase applications to the semi-rough areas

during 2008. "We are sure this will further improve surface quality and appearance, and help reduce mowing pressures," he adds.

Located at Wythall, just south of Birmingham, there is constant demand for year round play. The manicured quality and challenging borrows of the greens on the 75 year old, 6000-plus yard course has created an enviable reputation. Earlier this year Kim and his team received the prestigious accolade as Midlands Regional Winners of the BIGGA Golf Environment Competition.

Scotts' Area Manager, Nia Frost, believes the use of Primo MAXX across the course will help with an Integrated Turf Management plan that further enhances the environmental credentials. "Reducing the hours spent mowing immediately cuts the carbon footprint of turf management," she highlights. "Raising the turf cutting height, whilst maintaining density and playing quality, can also help to alleviate disease pressure."

The stronger turf, with greater rooting, is better able to withstand and recover from pest damage. It also gives turf the ability to use nutrients and water far more efficiently, to maintain season long improved playability. ■

Beat the burn

Greater demands for consistent high quality playing surfaces throughout the summer put extra stress on both turf and turf managers. New techniques in Primo MAXX pre-stress conditioning have been shown to minimise the effects of heat and drought stress and keep turf in top condition.

UK COOL SEASON grass species struggle to cope when temperatures rise and soil water reserves fall, warns leading turf advisor, Dr Karl Danneberger. "With a warming climate becoming a reality, turf managers are going to have to cope with increasingly stressful conditions. Staying cool and green when all around are burning up will make a real difference," he says.

Staying green

Research trials and turf managers' experience on UK golf courses and sport pitches has consistently demonstrated the ability of a Primo MAXX programme to help turf withstand the effects of stress more effectively, and to recover faster.

"On a sunny day, the temperature within the turf grass canopy is often 7 – 10°C warmer than ambient air temperature, adding to turf stress," according to Karl. "Studies have shown root growth is adversely affected when temperatures get above 18°C, and above 24°C

leaf photosynthetic rates reduce and the chlorophyll content decreases in cool season turf grasses, such as bents, fescues, ryegrasses and *Poa annua*.

"The net result is loss of colour, turf density and turf quality," he adds. Under drought conditions Primo MAXX has been shown to increase leaf chlorophyll content by 60%.

The presence of cytokinins in the plant has been shown to delay the degradation of chlorophyll caused by high temperatures and to alleviate leaf browning, as well as improving turf quality. Research has shown that Primo MAXX applications increase the level of bioactive cytokinins within the plant – improving tolerance to heat and drought induced stress.

Water use

Research at Rutgers University has shown that only 3% of water taken up by turf grass is used in photosynthesis, with over 90% transpired by the plant.

Primo MAXX has been shown to improve the turf plant's water efficiency by reducing respiration rates and stomatal evapo-transpiration, according to researcher, Bingru Huang.

"In trials under drought conditions Primo MAXX enhanced the photochemical efficiency of turf by over 75%, compared to untreated turf. The relative water content of the grass leaves remained a healthy 20% higher than untreated 28 days after application," reports Bingru.

Healthier plants, with deeper rooting, are better able to seek out available soil moisture and nutrients. They also make more efficient use of irrigation and stay green for longer, as well as recovering faster from drought effects, or traffic and wear stress from heavy play.

Turf managers' experience reports that a Primo MAXX programme can reduce irrigation water requirements by 30%, whilst keeping turf greener and healthier for longer. ■

Healthy Roots for Healthy Turf

Dr Kate Entwistle of the Turf Disease Centre highlights the importance of root development in maintaining strong turf growth.

YOU CAN NOT have a strong sward unless you have a strong root system. Turf managers must be aware of all factors that may decrease root growth, and focus on a maintenance plan that will support healthy root development. Any adverse effect on root development is likely to have a significant effect on plant growth and ultimately, reduced root strength will lead to a weak, susceptible sward.

The main functions of roots are to anchor the plant and to take up water and nutrients required by the plant for healthy growth and development. Within the plant, there is a chemical communication between the root growth and shoot development that



primarily occurs via the activity of one or more plant hormones and the production of these hormones can be strongly affected by environmental conditions.

If the rootzone can be managed to encourage optimal root development, the plant will benefit from efficient water and

nutrient uptake and the sward will show increased strength and resilience during play. Depth of rooting, although always desirable, is not as important to plant health as quality of root growth.

Pest damage

The feeding activity of insect larvae and the parasitic activity of certain invertebrates and fungi can adversely affect root development. Whilst a high population of larvae can cause severe problems to a sward, most often the damage is caused by the feeding activity of vertebrates, such as birds and badgers, looking for an easy meal.

Plant parasitic nematodes will damage roots through their feeding activity and movement through root tissues. Generally roots become stunted, heavily branched, swollen or galled. The sward will invariably show a chlorosis, loss of vigour and an increased susceptibility to nutrient and drought stress.

Often, the damage to the roots may go unnoticed until the symptoms begin to develop on the sward in response to the environmental and maintenance pressures.

In addition to their direct effect on roots, plant parasitic nematodes will cause wounding and a deterioration of the plant tissues which can allow entry of other pathogens in to the plant. It is possible to get a succession of disease that compounds the stresses on the turf and may, ultimately, lead to the death of the plant.

Disease susceptibility

Many fungal diseases that develop on amenity grasses are caused by organisms that are able to live as saprophytes as well as parasites, by taking advantage of a weakened plant. The anthracnose diseases are typical of fungal diseases that are encouraged by plant stress and, where plant parasitic nematode populations are active in the rootzone, chronic disease development can occur.

Fungal disease cannot be eradicated from a turfgrass sward, but the severity and the frequency of disease occurrence, and the time taken for the sward to recover, can be reduced if the plant is growing strongly with healthy roots. ■

For further information visit: www.turfdiseasecentre.co.uk



On-line help for turf management decisions

USING the internet-based turf management decision support system, GreenCast, is helping to achieve better results and create higher quality turf from reduced inputs, reports Craig Brisley of Collier Turf Care.

Not only does it provide a reliable five-day weather forecast, but coupling the information to a unique UK turf disease modeling system gives invaluable early warning of impending risk, in time for turf managers to take action and avoid damaging effects. "Using GreenCast to fine-tune fungicide applications to the most appropriate timing – when the risk of infection is high, but before visible damage occurs – has proven to deliver better results from fewer applications," he advises.

Craig highlights there is also a wealth of information within the web-site that turf managers will find useful in making everyday decisions. One of his customers, Essex golf course owner and manager, Barney Cameron, refers to the GreenCast web site daily to identify disease risks faced on the 18-hole Cranham Golf Course, close to the M25 near Romford. Constructed by the Cameron family only seven years ago – to accompany the family's more established sister-course at Toot Hill near Ongar – turf on the young course is still highly susceptible to both Fusarium and Anthracnose.

"We know the sort of conditions when disease is likely to be a problem," reports Barney, "but it's really useful to have advance warning of when the

risk is likely to be high. Although the two courses are geographically close, the rainfall and temperatures can be very different, so the localised information provided by GreenCast is important."

Whilst the early incidence of Take-All appears to have reduced since the turf at Cranham has become more established, Barney says he remains vigilant and will be especially careful should GreenCast forecast a continuous high risk period.

He highlights that the soil temperature forecasts are a useful guide for timing fertiliser applications and turf growth potential, whilst the five-day spray window forecast not only helps select the optimum conditions for fungicide application, but can help decide when they may be able to undertake a range of turf maintenance activities.

Barney adds that using GreenCast to gain a better understanding of what they are aiming to achieve, will help to get the best possible results from all inputs used across the course.

Comments on the UK Golf Guide from golfers playing the Cranham course are testament to the Cameron's famed skills as course builders, and Barney's experience as a groundsman: *'A blinking great little course. The greens were very fine, fairways were very green and well cut.'*; *'The course was in great condition. The tees and greens were excellent and the fairways were always superb to play from. All in all a lovely golf course.'*; *'The water on many holes provides a tough and entertaining round. The bunkers and greens are excellent in condition! Well worth a visit.'* ■

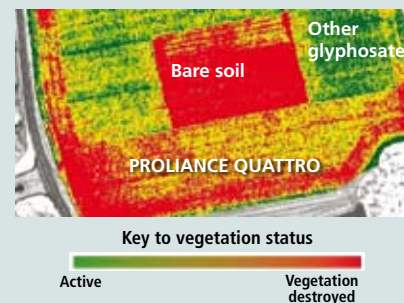
www.greencast.co.uk or www.greencast.ie

FAST MOVING NEW PROLIANCE QUATTRO

PROLIANCE QUATTRO is a brand new total herbicide from Syngenta that will get to work quickly to achieve a more effective kill under a wider range of conditions.

The specially formulated glyphosate is the only amenity herbicide to contain the revolutionary System 4 Technology – a unique blend of surfactants designed to achieve better coverage of the leaf surface, faster uptake and rapid translocation to reach roots, rhizomes and stolons. Proliance Quattro also has a good environmental profile, essential for today's professional landscape maintenance use.

Highly sensitive infra red aerial imagery of large scale trials (below), have shown Proliance Quattro (area below the red square of bare soil) gets to work faster and can achieve quicker overall destruction of vegetation than other premium glyphosate products (to the right of the red square and still remaining visibly greener).



Richard Walton of Scotts Professional reports amenity managers will appreciate the ease of use and fast action of Proliance Quattro. "It controls the complete spectrum of weeds, including the most invasive weeds that have, hitherto, proven difficult to control." "It has proven to have the flexibility to tackle the most problematic areas and achieve excellent results, often at lower rates of the active than other premium glyphosate products," he adds. It is approved for a wide range of professional uses.

System 4 Technology has been specifically designed to combat the natural antagonistic effects of mineral ions in hard water and on plant leaves that can deactivate other premium glyphosate products and reduce their efficacy by up to 30%. It ensures Proliance Quattro can work more reliably in all areas and conditions. ■



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