

DISEASE PRESSURE HOTS UP



Turf diseases are attacking more aggressively and for longer in warmer conditions – with some new diseases rarely seen in the UK now causing damage. Turf managers need advance warning of new risks, and to be ready to take action, advises Syngenta Technical Manager, Simon Barnaby.

With temperatures rising year on year and a marked reduction in seasonal variation, a series of unusual diseases have been appearing on fine turf areas up and down the country over recent years, creating new challenges for turf managers. Disease pathologists agree that many of the incidences are a consequence of changes in prevailing environmental conditions that are more conducive to the diseases.

Autumn and spring are typically severely truncated; we seem to go from winter straight into summer. Furthermore, the rain events tend to be more intense but of shorter duration. All of which can lead to greater levels of disease and put turf under stress that makes it slower to recover.

There are also increasing reports that turf grass diseases are getting more aggressive. Fusarium Patch seems to have been particularly severe in the late autumn early winter period over the last few years. Brown Patch has begun to appear with increasing regularity. Dollar Spot, which was an isolated problem on some courses in the south west, can now be found on fine turf across the country. The risk from Take-All, which was always a mid-summer problem, can occur from May to October.

Better Prepared

Looking back at the historical disease records on the GreenCast website – www.greencast.co.uk – highlights the intensity and frequency of localised disease pressure now encountered on golf courses across the country. Armed with this information, coupled with the website's up-to-date local disease forecasts for the coming five days, turf managers can be better prepared to tackle disease more effectively.

With the greater severity of turf disease attacks, prevention is more important than ever. Independent STRI trials have proven that using the GreenCast decision support system to optimise the timing of Heritage



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fungicide applications – when infection has taken place during periods of high disease risk, but before symptoms are visible on the turf – can achieve better results and maintain improved turf quality, from fewer applications and at reduced cost.

Coupled to this, it remains essential that turf managers adopt the highest level of Integrated Turf Management (ITM) that will help to prevent problems. Measures such as appropriate nutritional and cultural treatments, correct disease identification and the early or preventative application of appropriate fungicides can all help to prevent serious problems occurring.

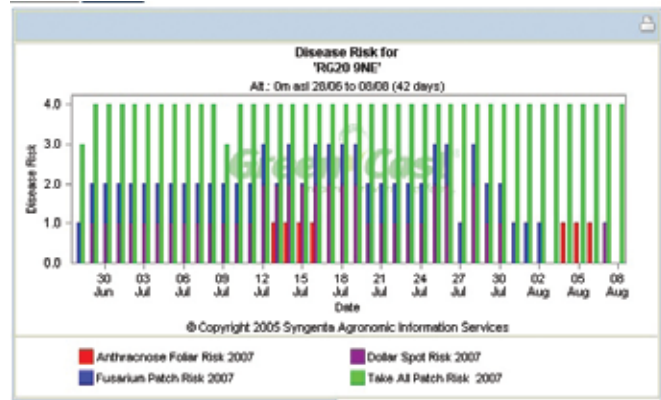
Stress Management

UK cool season grass species struggle to cope when temperatures rise and soil water reserves fall. 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.

Research trials and turf managers' experience on UK golf courses and sports 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. 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, yet, under drought conditions Primo MAXX has been shown to increase leaf chlorophyll content by 60%. Furthermore, it has been shown to increase the level of bioactive cytokinins within the plant that serve to delay the degradation of chlorophyll



caused by high temperatures and to alleviate leaf browning, 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. The Primo growth regulation programme has been shown to improve the turf plant's water efficiency by reducing respiration rates and stomatal evapo-transpiration, which in practice can reduce irrigation requirements by 30%.

In trials under drought conditions, the photochemical efficiency of turf was enhanced 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.

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



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