Verti Cutter

Charterhouse Turf Machinery introduced the the new Verti-Cut 1200 dethatcher, which employs specially designed Verti-Cut blades that cut the lateral growth of grass roots and remove dead plant material, allowing better water penetration and more room for healthy roots to grow.

Equipped with a 5.5hp Briggs & Stratton engine or driven from a tractor PTO, the Verti-Cut 1200 offers a 1.2m working width and depending on ground conditions can work to 25mm deep.

The latest addition to the Verti-Drain range was also presented at BTME.

The new high speed 2216 can decompact to 24cm. Combining the Verti-Drain design with the latest technology, the 2216 can decompact much more quickly and efficiently, while giving the opportunity to work deeper when required and at 1.6m wide it is the ideally suited for the golf course.

BSH to Charm the US Open Course

AberCharm has been UK-bred for UK conditions. It boasts excellent shoot density and summer and winter greenness, offering the opportunity to improve the visual quality of their greens year round.

The Slender Creeping Red Fescue Festuca rubra ssp litoralis produces rhizomes and a very dense compact sward with strong dark green colour which is maintained throughout the year. It also resists the major fungal diseases.

Highlighted in the British Seed Houses catalogue's dedicated section on bentgrasses, TYEE & 007 'Superbents' also created interest at the show.

The 007 was developed using 24 parent plants which enables these varieties to deliver the same results all around the world from the extreme heat of Morocco to the harsh cold of Western Siberia.

All parental clones were selected for a medium bright green leaf colour which does not display purple discolouration in cold weather and their vigorous uniform growth habit, as well as improved Dollar spot resistance

TYEE is widely adaptable to both warm summers and cold winters and produces fine leaf texture and turf with extra density which outcompetes poa annua. It provides excellent disease resistance, especially to Dollar spot and Fusarium and offers the benefit of reduced fungicide application. For use on greens and tees, TYEE produces superior putting greens.

Both varieties have made a strong impression on leading Course Managers and Superintendents and their qualities will be in the spotlight on the US Open course at the Olympic Club in San Francisco and at the Medinah Country Club, Chicago, the Ryder Cup venue for 2012.

New Trilo

Trilo and The Grass Group has introduced the new Trilo B7 three-point linkage mounted blower at BTME,

Featuring a hydraulically operated 180 degree reverse spout, the B7 has wide castor wheels and the anti-scalp roller on the back to follow the most extreme undulations on the golf course.

This lightweight blower has a statically and dynamically balanced impeller to ensure smooth and vibration free operation. It also has a 340 cubic metres/min airflow. Weighing in at 210kg, it can be operated by tractors from 30hp with a Cat I or II linkage.

GI NEW PRODUCTS

The latest products on the market reviewed

More New Products next month

AerAid

Dennis and Sisis presented their turf care machinery ranges on the companies' joint stand at BTME, demonstrating how they complement each other for the care of fine turf.

Production of Sisis product moved to Dennis' Kirk Langley, Derbyshire base last year when parent company Howardson Ltd purchased Sisis.

Latest in the line-up of technologically advanced mowers from Dennis is the Razor Ultra, designed to give a tournament finish even on undulating greens.

Developed specifically to cut golf greens and tees, cricket pitches and bowling greens, the Razor Ultra has an 11-bladed cutting cylinder, tungsten tipped groomer for lateral growth control and 56cm cutting width.

Its ultra-short wheelbase improves manoeuvrability on the green and the operator-friendly design includes 'no tools' click height adjusters and stub free transport wheels.

Heavy duty independent cutter and roller clutches give a smooth take up for ease of operation and a consistent finish while powered transport wheels make for quick transit between greens.

The Javelin AerAid aerates up to 127mm deep with minimal surface disturbance while injecting compressed air into the soil for the ultimate decompaction effect.

Its cam trigger mechanism ensures that the air is always expelled at the bottom of the tine penetration, enabling treatment to be targeted precisely and consistently.

Clipless

Headland Amenity announced two new products at the Show - Elevate Fe and Clipless.

Elevate Fe offers a user-friendly and cost effective liquid iron feed, ideal for tees, approaches, fairways and semi-rough but also for use on all coarse and close-mown areas including racecourses and sports pitches.

Clipless reduces turf height, improves sward density and cuts down on mowing frequency.

Suitable for use on all turf areas, Clipless contains 120g/litre trinexapac – ethyl and works by blocking the production of gibberellic acid within the plant leaf, stopping cell elongation and upward growth.

The turf requires less mowing, with potential savings of manpower and cutting machinery costs. Clipless is also a useful tool to help reduce mowing frequency in difficult or dangerous areas such as steep banks etc.

Total Eclipse of the Mower

Ransomes Jacobsen unveiled a refreshed version of the popular Jacobsen Eclipse walking greens mowers, the Eclipse2. Building on the quality-of-cut and control of the original Eclipse, it allows Course Managers to customise and control mower settings to varying course conditions.

Retaining the electric motors for traction and cutting reel drive, they are available in three cutting widths 45.7cm 55.9cm and 66cm all with an optional petrol engine or drop-in battery pack.

The patented floating head allows the lowest heights of cut without scalping, even on the most undulating greens, and a wide array of frequency of cut (FOC) settings combine to produce a smooth and consistent playing surface. The Eclipse2 features a true automotive differential, which provides excellent tracking by driving the traction drum from one point, making it easier to track straight across the green.

On the hybrid version, with a Honda petrol engine powering a 48-volt generator, the engine has now been mounted through 180 degrees giving a better balance to the machine. The mounting slots for the generator and battery pack have been extended giving greater flexibility to increase or decrease the weight on the front roller.

PowerStar

New Holland unveiled its new T4 PowerStar utility tractor equipped with turf/amenity tyres this week at the Show.

The powerful machine, which is available in three models from 55hp – 75hp, includes the revolutionary new VisionView Cab – a market leader, which is 20% larger and includes a hi-vis roof panel, ensuring excellent operator comfort and visibility.

Complete with turf/amenity tyres and compatible for an integrated front-end loader, the new T4 PowerStar makes an ideal loader or utility tractor, and includes a passenger seat as standard to enable two people to travel securely and in comfort.

www.newholland.com

Green Master

New from Toro for 2012 is the Greensmaster eFlex, an all-electric pedestrian greensmower that boasts a lithium-ion battery for an unbeatable performance from a 'greener' power source. This also makes it Toro's quietest greensmower ever.

The inclusion of a lithium-ion battery provides a consistent performance over its five-year life expectancy and is capable of cutting up to nine greens on a single charge.

Improved operator controls, including an automated 'EZ-Turn' feature, provide operators with even better control and comfort at all times.

Fitted as standard, EZ-Turn is selected according to the user's preferences and pace, and automatically slows the mower down at the end of a pass and speeds it up again on the return pass.

Visit www.toro.com/eflex

Kioti

RECO showcased the latest addition to the Kioti range of compact tractors at BTME which is now available exclusively from RECO.

The introduction of the RX tractor sees Kioti bridging the gap in its existing horse power offerings with this 59hp compact.

The RX6010 is fitted with a streamlined one-piece bonnet hood, providing easy access for servicing and maintenance, along with a large capacity (90 litre) fuel tank. A deluxe air-conditioned cab helps keep the operator comfortable whatever the weather and new projection headlamps offer increased visibility and safer operating conditions whilst working or travelling in the dark.

The tractor features 12 x 12 speed manual transmission with a dashboard mounted lever for ease of use, along with an Auto PTO for increased safety when using implements.

Featuring a heavy duty three-point linkage system with cat II ball hitch with a lift capacity of 2,378 kg, the RX is suitable for use with heavier implements thus increasing the versatility of the tractor.

Grand Master

Kubota presented its Grand L40-Series, which offers a range of tractors for all groundcare and greenkeeping operations.

The range includes five models with a choice of ROPS or air-conditioned cab, three transmissions and numerous tyre sizes, so there is a Grand L40 tractor to match any task.

At the heart of the Grand L40 series is the E-TVCS water cooled diesel engine which provides increased air flow into the combustion chamber to produce greater power, efficiency and cleaner emissions.

Models are the 37hp L3540, 44hp L4240, 52hp L5040, 54hp L5240 and 59hp L5740, representing an excellent range of horsepowers for tasks such as aeration and decompaction, seeding and topdressing, handling high capacity mowers and of course, towing and loading.

Glide Shift Transmission can be specified on the 52hp L5040, giving 24x16 speeds and clutchless shifting for more demanding operations.

Kubota's new HST Plus transmission is featured on the two top of the range models, the L5240 and L5740.

More New Products next month


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Turf diseases

When and where to look and how to identify them

Dr Terry Mabbett looks at the **five most common turf diseases** in the UK and offers advice on how to identify, or more ideally avoid, them

Fusarium

ABOVE: Fusarium patch is still 'top dog disease' in UK turf (Picture www.greencast.co.uk)
RIGHT: Close up on a typical water soaked area of Fusarium patch disease (Picture Vitax)
BELOW: Aftermath damage caused by anthracnose infection and disease (Picture Headland Amenity)
INSET BELOW: Close up on basal rot anthracnose infecting older leaves at the crown (Picture Headland Amenity)

Basal rot anthracnose

Fine turf suffers from a surprisingly large number of different diseases given the limited number of grass species involved and the minimal amounts of grass, stem and leaf available for infection by plant pathogenic fungi.

The inherent nature of fine turf and the management practices required to maintain the close-cut condition as a professional playing surface is why fine turf is so susceptible to disease. By the same token it becomes difficult to distinguish between different turf diseases and non-disease symptoms on such tiny areas of stem and leaf.

A fuller appreciation of the factors which pre-dispose turf to disease can help turf managers spot problems early on by knowing when and where to look. Fungi responsible for turf disease are invariably present as saprophytes living on dead and decaying plant debris comprising the thatch at the base of the turf grass sward.

Thatch exists at varying depths and densities depending on turf grass species and the extent to which it is controlled. Thatch is a vital component within the turf grass sward imparting springiness for playability and player comfort but simultaneously harbouring disease, holding moisture and generating humidity to provide ideal conditions for infection.

By nature fine sports turf suffers wear and tear and,, therefore, stress from acute and chronic damage during normal every-day use. Laceration, bruising and soil compaction all contribute to increased disease susceptibility. For instance, anthracnose (Colletotrichum cereale) often starts as a discrete spot of diseased grass where the fungus has invaded leaves and is left bruised when golf balls land on the green.

Mowing to maintain turf grass at optimum heights for premium playability, according to species composition, function (green, tee, fairway) and the time of year, is the core of turf management. But the very act of mowing opens up the sward to fungal entry via the cut surfaces of grass stems and leaf blades at which oozing drops of nutrient-rich sap provide ideal infection sites.

Microdochium nivale the causal fungal pathogen of Fusarium patch uses these easy points of entry especially when mower blades are incorrectly set leaving jagged rather than clean-cut ends. Mowing of heavily infected turf can spread Microdochium inoculum (spores and mycelium) across the turf especially if wet with resulting infection patterns corresponding to wheel movements.

Cutting turf injures grass plants a regular basis and removes any fungicide that was on or inside the clippings. Mowing also takes away nutrients that were inside the severed leaf ends. Need to replenish nutrients lost in this way is one key reason why sports turf requires a continuous balanced programme of nutrition.

Plant nutrition and disease are closely related and turf grass is no exception. Plant health and resilience to disease is essentially a question of year-round continuity in nutrient balance. Simply unzipping the fertiliser bag in spring and autumn may simply accentuate any imbalance and aggravate thatch residing fungi like Microdo-

Red thread disease

Dollar spot

chium nivale and Colletotrichum cereale into action.

Fine turf on the golf course is clearly exposed and pre-disposed to disease. Due thought and consideration given to these facts about fine turf should help turf mangers on the look-out for diseases. Knowing when and where to look is just as important as deciding what pathogen is responsible by allowing early identification and, therefore, timely action.

Fusarium Patch

Fusarium patch is still the 'top dog' disease of fine turf in the United Kingdom. Over 90 per cent of greenkeepers are reckoned to encounter F usarium patch during any one year. Eighty per cent of all fungicide applications are targeted at Fusarium irrespective of the disease range quoted on the fungicide product label.

Fusarium patch can appear at any time. Prime times are spring and autumn when grass growth dynamics and environmental conditions are most conducive to infection, disease development and spread, and especially autumn when turf recovering from stress inflicted by summer-season traffic adds yet another dimension to overall disease susceptibility. Over-enthusiastic application of nitrogen based fertilizer is another factor making spring and autumn prime times for Fusarium.

The disease typically appears as orange-brown water-soaked patches some 2.5 to 5.0cm wide. Under ideal conditions including prolonged high humidity and surface wetness, and failing prompt remedial action (application fungicide with some curative action), these can quickly coalesce to cover large areas of turf.

Poa annua (annual meadow grass) is the most susceptible species followed by bent grasses (Agrostis). Others including fescues are susceptible, especially under snow cover or just after snow has melted when the pathogen is most active and therefore less discerning of turf grass species. Differing species susceptibility to Fusarium Patch is largely down to thatch with Poa annua and Agrostis classed as moderate to high thatch-forming grasses.

Golf courses receiving substantial snow cover in most years may find this the worst time for Fusarium. Symptoms are more specific and characteristic with obvious orange-brown rings surrounding a pale straw coloured central area with a distinct pink tinge, hence the alternative common name of 'Pink Snow Mould' for infections occurring at this time.

Some key pre-disposing factors for Fusarium are:

• Deep dense thatch with high water holding capacity and humid microclimate.

ABOVE LEFT: Red thread disease
Red needles (strands or threads) attached to grass leaves and a sure sign of red thread disease caused by the fungus Laetisaria fuciformis (Picture Bayer Environmental Science)

ABOVE RIGHT: Dollar spot
Straw coloured patches of dollar spot disease *(Picture Bayer Environmental Science)*

BELOW: Fairy rings
MAIN BELOW: Type 1 fairy rings showing a ring of killed grass *(Picture Bayer Environmental Science)*
INSET BELOW: Type 2 fairy rings and a circle of grass showing stimulated growth *(Picture www.greencast.co.uk)*

• Excess nitrogen available during mild and moist autumn conditions generating lush grass growth and high pathogen activity

• Periods of prolonged high humidity and/or surface wetness and impeded drainage

• Incorrectly set mower blades which tear rather than cut the grass.

Anthracnose

Basal (crown) rot of annual meadow grass appearing during a late autumn window was the only type of anthracnose that UK greenkeepers traditionally had to contend with. More recently the Colletotrichum cereale pathogen has stepped up a gear, starting earlier in the year and extending its disease activity into a broader range of turf grass species.

In addition to basal rot anthracnose UK greenkeepers now face 'foliar blight' first appearing as

Fairy rings

ABOVE: Dollar spot Straw coloured patches of dollar spot disease *(Picture Bayer Environmental Science)*

LEFT: Red needles (strands or threads) attached to grass leaves and a sure sign of red thread disease caused by the fungus Laetisaria fuciformis *(Picture Bayer Environmental Science)*

BELOW: Identifying diseases on agricultural crops like wheat, which is essentially a grass allowed to grow and develop fully, is a whole lot easier than dealing with diseases on turf grass *(Pictures Dr Terry Mabbett)*

early as July at the height of the summer season. This new dimension has elevated anthracnose into the second most important disease after Fusarium on UK turf.

The 'seeds' of basal rot anthracnose are sown in summer on deep thatched turf stressed out from seasonal wear and tear on compacted soil, but symptoms of disease do not appear until autumn. Cool moist October weather encourages the anthracnose fungus out of its saprophytic existence on thatch to infect living Poa annua plants refreshed by rain and flushed with fertiliser.

Basal rot on Poa annua begins with infection of the older leaves on the crown. They go yellow and then orange/red to produce water soaked bases on the infected grass tillers which become easy to pull out. Later formation of dark spore-containing structures appear as black stained areas at the base of the plant which is why the disease is called 'anthracnose' (means like coal).

Poa annua is the only species acutely susceptible to basal rot so greenkeepers with a high proportion of annual meadow grass on greens should be on 'autumn watch' for anthracnose especially if 'starving out' of Poa annua is part of an on-going management programme.

Compacted summer swards with too deep and dense thatch are similarly the source and origin of anthracnose foliar blight. Only difference being is that foliar blight develops straightaway. The disease is triggered by summer rainfall and irrigation water impeded by thatch and dry water-repellent soil and therefore unable to percolate through to the root zone. As a result the water remains on the surface and gets soaked up by thatch to create high humidity and ideal conditions for fungal infection and development of foliar blight.

Turf patches blighted by this form of anthracnose are yellow at first and then bronze with affected grass becoming dull and darkened in appearance as spore-bearing structures mature. Subsequent transfer of disease to previously healthy areas is by spores spread by rain splashes, wind, on wheels and footwear. Annual meadow grass and creeping bents are prime targets with smooth-stalked meadow grass (Poa pratensis) and creeping red fescue (Festuca rubra) significantly affected.

Anthracnose is a self-perpetuating turf disease. Tillers and plants killed by basal rot and leaves destroyed by foliar blight add to and stoke up thatch thereby offering even more opportunities for Colletotrichum cereale as a saprophyte. Factors pre-disposing turf to anthracnose attack are similar to those for Fusarium

Dollar spot

Fusarium patch and anthracnose are first and second in UK turf disease rankings but most smart money is on dollar spot to become disease of the future. This view is based on experience from North America and Sclerotinia homoeocarpa being a warm season pathogen, cropping up in mid to late summer and lasting through to early autumn when soil fertility and turf vitality is at lowest ebb.

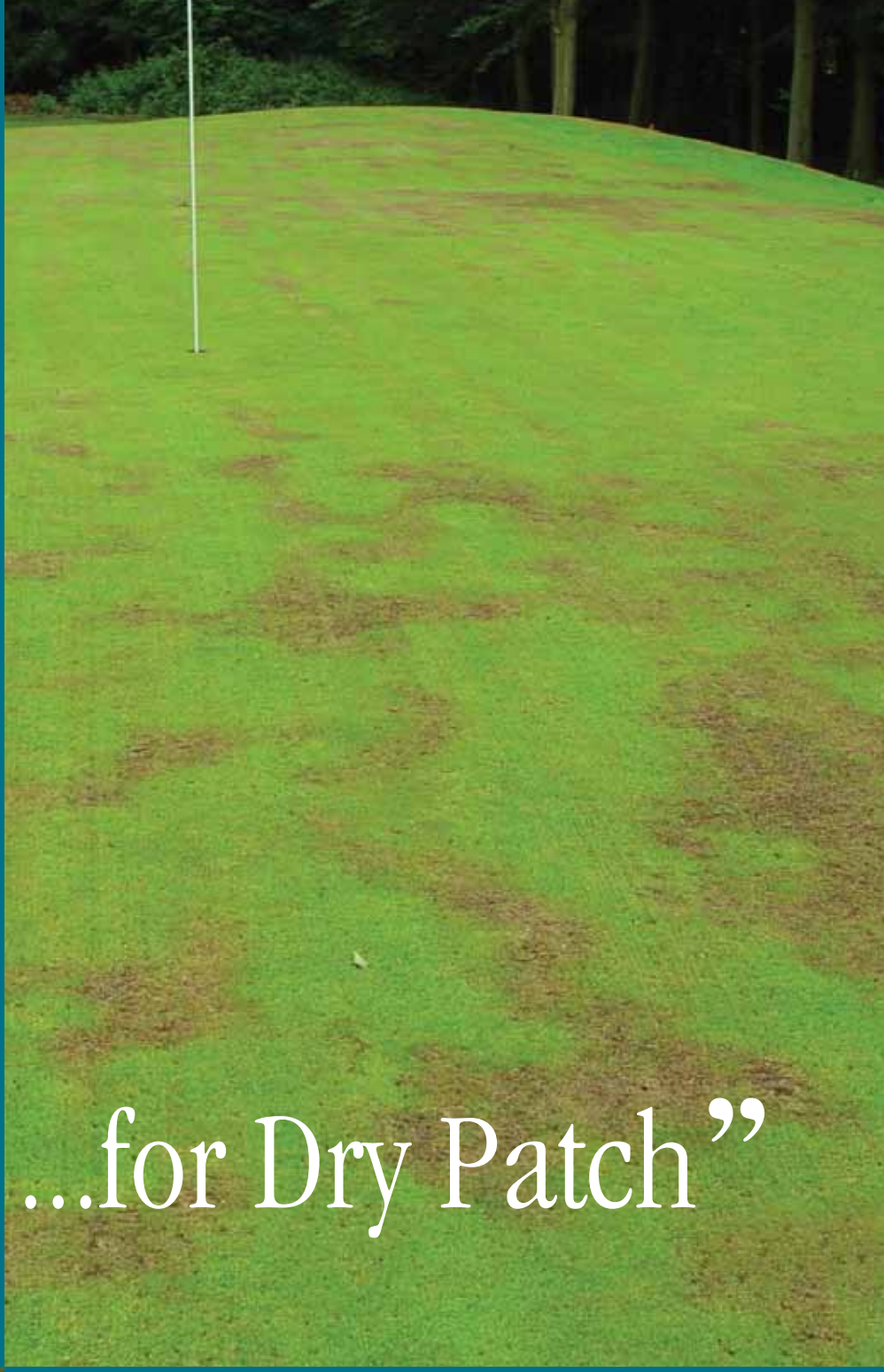
If widely predicted UK climate change materialises, with earlier springs, warmer steamier summers and extended autumns, this fungal pathogen will be presented with more favourable environmental conditions and turf grass swards with reduced vitality and rootzone fertility. Sclerotinia homoeocarpa, like the pathogens responsible for Fusarium patch and anthracnose, 'hides away and hitches a ride on thatch' but this pathogen prefers 'low nitrogen' soils and swards.

Dollar spot appears as small tan coloured spots usually the size of a 1 US dollar coin, round and rarely larger than 7.5cm wide. Dollar spot most often affects fescues although additionally attacks bent grasses and annual meadow grass.

Red thread

Red thread is fast becoming the 'Cinderella' turf disease being dwarfed by Fusarium and anthracnose and overlooked by current interest in dollar spot. However, red thread is widely spread amongst turf grass species including fine leaf fescues, especially red fescue (Festuca rubra), and perennial Ryegrass (Lolium perenne). Like dollar spot, red thread is a warm season disease appearing in summer and extending with ease through autumn and often into mild winters. Like dollar spot red thread thrives on nitrogen deficient turf.

Red thread is one of the easier diseases to recognise due to its distinct pink to reddish hues and colourations expressed in the foliar symptoms as the common name suggests. Overall symptoms appear as ill-defined patches of bleached grass with closer inspection revealing pink mycelium visible under



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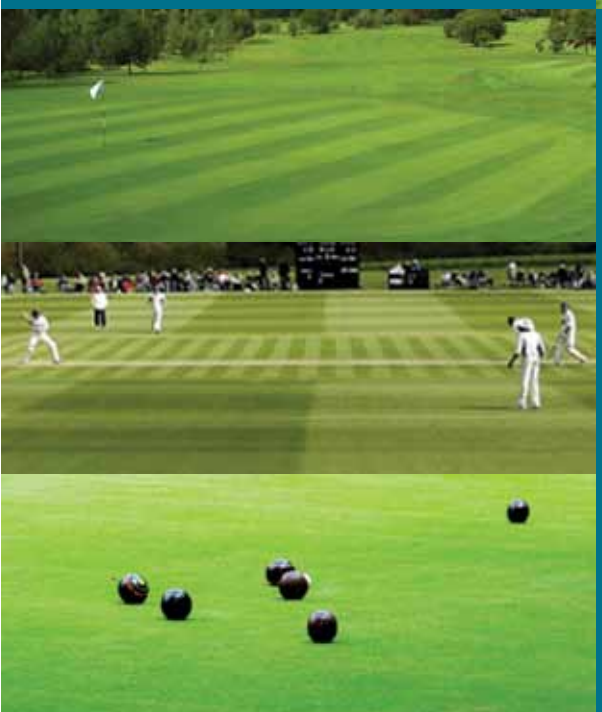

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ABOVE/LEFT: The seeds of diseases like basal rot anthracnose and Fusarium patch are sown in summer stressed turf (left) but the diseases do not show up in intensity until the grass greens up (above) during cool moist autumn conditions *(Pictures Dr Terry Mabbett)*

LEFT: Most mainstream turf pathogens lurk in the thatch at the base of the turf grass sward in a saprophytic mode of existence *(Picture Dr Terry Mabbett)*

BELOW: Identifying diseases on agricultural crops like wheat, which is essentially a grass allowed to grow and develop fully, is a whole lot easier than dealing with diseases on turf grass *(Pictures Dr Terry Mabbett)*

morning dew cover. Extending from the tips of leaf blades is red-needle or strand-like structures that become brittle and break on drying to spread red thread into new areas.

But nothing is as simple as first seems. What is commonly called red thread is a disease complex involving two distinct fungal pathogens but quite easily distinguished in situ using a hand lens or magnifying glass. Laetisaria fuciformis is responsible for the 'red needles' (threads) extending from the leaf blades and Limonomyces roseipellis is characterised by pink tinged gelatinous mycelium and cottony 'candy tufts' of spores visible under early morning dew cover and more correctly called 'Pink Patch'. The two pathogens require similar conditions and are often found together.

Fairy rings

Fairy rings are mired in mystery and mystique both in folklore and science. Unlike the classic foregoing foliar diseases fairy rings have an indirect and incidental effect on turf. What's more there are three distinct types generally designated Type 1, 2 and 3.

Fairy rings 'disease' is caused by Basidiomycete fungi in the rootzone restricting the availability of water and nutrients. That said fairy rings downgrade turf through disfiguring symptoms and spore bearing structures (toadstools or puffballs) appearing in circles just as the name implies.

Type 1 – recognised by a circle of dead or dying grass inside a larger band of dark-coloured grass and due to toxins produced by Marasmius oreades in the rootzone. Damage to grass is aggravated by a thick layer of waxy fungal mycelium inside the rootzone of the affected turf that prevents sufficient water from above percolating down to the roots. Net result is complete death of the affected ring of grass and eventual appearance of reddish tan to buff coloured toadstools or 'caps' arranged in ring.

Type 2 – characterised by a ring of visibly stimulated grass growth in which toadstools may appear at particular times of the year. Not as damaging as Type 1 since it does not kill the grass but still leaving disfiguring scars on close mown turf. Type 2 is particularly prominent and damaging during long hot summers when the dark bands or 'ribbons' of stimulated grass stand out within turf that otherwise lacks