GI
NEW PRODUCTS
The latest products at BTME 2012 reviewed

Cushman Turf Utility Vehicles

The launch of the Cushman Hauler 1200X.

Breaker Dynamic

Introducing Breaker Dynamic to BTME 2012.

Verti Cutter

Charterhouse Turf Machinery introduced the new Verti-Cut 1200 dethatcher.

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.

Qualibra

A new concept in wetting agent technology from RhyneTech.

New Trilo

Trilo and The Grass Group have introduced the new Trilo B7 three-point linkage mounted blower at BTME.
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 turf.

Production of Sisis product moved to Dennis’s 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 Razer Ultra, wheels.

and stub free transport tools’ click height adjusters to the green and the operator-

The Razor Ultra, the Razor Ultra to cut golf greens and tees, undulating greens.

its ultra-short wheelbase for traction and cutting reel drive, and control mower settings to produce greater power, efficiency and cleaner emissions.

The Kawasaki 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 one point, making it easier to track straight across the green.

The tractor features 12 x 16 speeds and clutchless shifting for more demanding operations.

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.new holland.com

Kioti

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

The KX060 10 is fitted with a streamlined one-piece bonnet, 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 a Pt 11 ball joint 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 greenskeeping operations.

The range includes five models with a choice of ROB 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-TVC 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 homewares for tasks such as aeration and decompaction, seeding and topdressing, handling high capacity mowers and of course, tilling and loading.

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

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

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 trees, approaches, fairways and semi rough but also for use on all course and close-mown areas including racecourses and sports pitches.

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

Suitable for use on all turf areas, Clipless contains 120g/litre trimexapac – ethyl and works by blocking the production of gibberellic acid within the plant to stop 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 scaring, 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 traction 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 providing greater flexibility to increase or decrease the weight on the front roller.

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www.new holland.com

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.

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.

www.new holland.com
AerAid

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

Production of Sisis product line-up of technologically advanced mowers from Dennis in the Langley, Derbyshire base last year when parent company Hawkesdon Ltd purchased Sisis.

Latest in the line-up of turf care machinery 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-in. bladed cutting cylinder, tungsten tipped grooms 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 adjustments and stub-free transport wheels.

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Clipless

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

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PowerStar

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

The RX6010 is fitted with a streamlined one-piece bonnet, providing easy access for servicing and maintenance, a compact.

The powerful machine, exclusively from RECO, has a 60hp Honda petrol engine powering a single charge.

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Glide Shift Transmission can be specified on the 52hp L5040, giving 24/4 16 speeds and clutchless shifting for more demanding operations.

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More than 100 Years of experience goes into the making of Baroness products, giving Baroness owners unrivalled cutting quality and the very lowest running costs.

www.baronessuk.com

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Over 30 Ventrac Mount Attachments
Ventrac 4231 turbo-diesel tractor fitted with MJ840 contour rotary deck

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www.baronessuk.com

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Turf diseases

When and where to look and how to identify them

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 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 aw.

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 grass 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 wound 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 mowing blades are incorrectly set leaving jagged rather than clean-cut ends. Mowing of heavily infected turf can spread Microdochium nivale (spores and mycelium) across the turf especially if wet with resulting infection patterns and ring patterns 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 these lost nutrients 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 your own diet and nutrition in nutrient balance. Simply unwrapping the fertilizer bag in spring and autumn may simply accentuate any imbalance and aggravate thatch residing fungi like Microdo-

White Rot: 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.

Red thread disease

Fusarium patch is still the "top dog" disease of fine turf in the United Kingdom. Over 90 per cent of greenkeepers are reckoned to be affected, which is why 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 ring, 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.

Basal rot 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 spread, which is why sports turf requires a continuous balanced programme of nutrition.

In addition to basal rot anthracnose UK greenkeepers now face "fusarium bight" first appearing as

Dollar spot

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.

Fairy rings

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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

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Cutting turf injures grass plants leaving leaf blades at which oozing drops of nutrient-rich sap can provide ideal infection sites. Microdochium nivale and Colletotrichum cereale often start as a discrete spot of diseased grass where the fungus has invaded leaves and is left bruised when golf balls land on the green.

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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. graminearum 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 and high pathogen activity are at optimum heights for premium playability, according to species composition, function (green, tee, fairway) and the time of year, is chore 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 cooing drops of nutrient-rich sap provide ideal infection sites.

In addition to basal rot anthracnose also fall within this category. 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 ‘filar blight’ first appearing as 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.

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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 soon in summer on deep thatched turf stressed out from solar 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 brown 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 bent 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 summer season and extended autumns, this fungal pathogen will be presented with more favourable environmental conditions and turf grass awards with reduced vitality and rootzone fertility. Sclerotinia homoeocarpa, like the pathogen responsible for Fusarium patch and anthracnose, ‘tades away and hitchs 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 must often affects Poas 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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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 needle (threanda) extending from the leaf blades and L Timonosara rosea 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 foreboding fossil diseases fairy rings have an indirect and incidental effect on turf. What’s more there are three distinct general types 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 down grade 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 colour. Type 2 fairy rings are generally caused by Lycooperdon fungi producing physiologically active chemicals that stimulate grass growth. Type 3 — most easily recognised by the prominent circle of stand-alone toadstools or puffballs with no visible effect on the associated ring of grass, either through toxins killing plants (Type 1) or chemicals stimulating grass growth (Type 2). Type 3 is caused by different fungi including Hygrocybe and is the easiest type of fairy rings to live with, being temporarily removed during mowing.

**No easy task**

Experienced greenkeepers can instinctively recognise and identify the main diseases of turf, just like any first GP could do with childhood diseases. Already in his seventies and practicing since the turn of the 20th century he could stand at the bedroom door and tell a mother what disease her child was suffering from. Naturally he would examine the patient to confirm his initial diagnosis from a distance, just as a greenkeeper will get down ‘on all fours’ to inspect his turf and consult his local agriculturalurer. The situation for younger and less experienced greenkeepers is altogether different. Dealing with diseases in fine sports turf is much more difficult than crops in agriculture. The farmer inspecting wheat, which is essentially a grass allowed to grow naturally and completely, is looking at a sufficiently large leaf area that allows him/her to observe discrete and easily identifiable disease symptoms. The greenkeeper does not have that luxury being essentially reduced to looking at fine turf in its entirety for spots or patches of discolouration and dying grass. That is why guideline descriptions for turf disease are generally reduced to simple statements like ‘round straw coloured patches’. That one straw coloured patch, whether caused by a fungus or associated with parasitic nematodes, is very much like another is clearly cause for confusion and misidentification. Insect pest damage and even spilt mower fuel can add to the confusion. What’s more wear and tear during play and unauthorised traffic, which may include the public with dogs delivering toxic urine and even foams, can further complicate an already confusing situation with additional ‘straw coloured patches’.

Of course there is always the local distributor at hand to offer expert opinion and only too pleased to provide something in a bottle to solve the problem. If in doubt always ask for a second opinion but I would additionally invest in a microscope and some basic knowledge of microscope slide preparation and fungus staining techniques. With this facility at his/her fingertips the greenkeeper is now inside an altogether different disease dimension, able to observe for himself/herself mycelium, spores and spore bearing structures that he/she would otherwise only read about.

From then on identification with the help of a sound text book on turf pathogens and diseases is not rocket science. Given the quality of contemporary turf management courses and teaching I would be surprised if most young and academically qualified greenkeepers have not already been introduced to these basic techniques in plant pathology. They allow greenkeepers to be more resourceful and not totally reliant on the turf ‘medicine man’.