

DISEASE CONTROL BY NUMBERS

By Dr Karl Danneberger



Dr Karl Danneberger, of Ohio State University, believes a better understanding of the dynamics of turf disease populations, and how they interact with environmental conditions, could enable greenkeepers to achieve better results with Integrated Turf Management programmes.

Turf managers need to get a handle on the complexities of population dynamics to better understand the risk of disease attack, and how they might reduce the regularity and the severity of future attacks.

The basis is that any population will grow faster when there is (a) a large number to start with and (b) conditions are more conducive to development. In the early 19th century, socio-economist, Thomas Malthus, put forward radical models of population growth, introducing the theory of exponential growth (see fig 1), and the catastrophic consequences that would occur when population numbers exceeded the carrying capacity of the natural resources.

While Malthusian theories primarily relate to human population growth, they are directly applicable to disease development in turf. The principle of exponential growth demonstrates that, from a very low population, disease only starts to increase slowly – 2; 4; 8; 16; 32...etc. Once you get to bigger numbers, however, exponential growth of the same sequence really starts to take off – 8192; 16,384; 32,768; 65,536...etc. This potential for growth can be magnified by a huge factor for turf diseases, with the presence

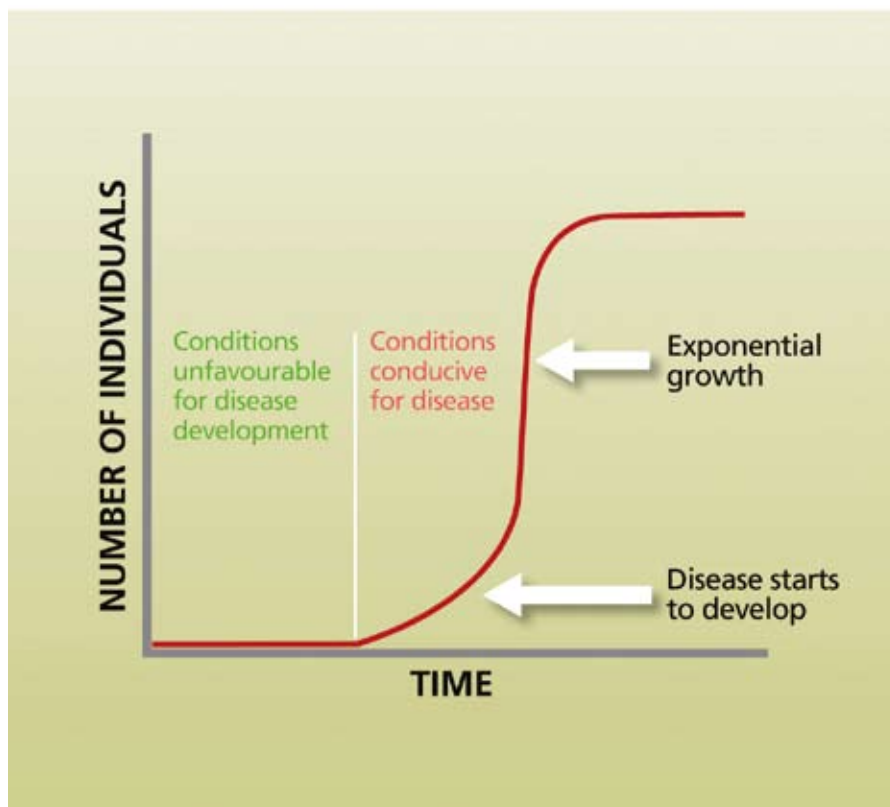


Fig 1. When turf disease populations build to a critical point, any conditions conducive to disease will see exponential growth with serious results.

of millions of spores within the turf just waiting for the right conditions to germinate.

ENVIRONMENTAL CONDITIONS

The speed at which disease goes through its development and multiplication is dictated by the prevailing environmental conditions, including temperature, humidity and the state of the turf as a host for infection. Periods of warm, moist conditions conducive to Fusarium, for example, will see disease move from the invisible latent phase, to the full blown infection much faster and develop quicker - especially on any lush, soft growth where the pathogen thrives.

The Malthusian theory prophesied that when population growth outstripped the natural resources numbers would reach a ceiling, which is just as true with turf disease – resulting in severe damage and turf die back. Investigations have shown turf can withstand a degree of disease presence, particularly when it is actively growing

and replacing any damaged leaf.

The risk is that if conditions turn especially favourable to disease, or the turf comes under any stress that weakens its resources, the potential for the disease to develop rapidly can cause severe damage to the playing surface.

INHOSPITABLE CONDITIONS

The answer is for turf managers to adopt a two-pronged approach. Firstly, to reduce the level of background disease inoculum within the turf sward and, secondly, for turf managers to make conditions as inhospitable to disease as possible, and hence slow down any development. If you can shift the disease growth curve to the right (see fig. 2) the appearance of visible symptoms may be delayed. In fact, if in that time conditions become less favourable for disease, a severe outbreak may be avoided. It also gives greater flexibility in timing to get a preventative fungicide applied to counter the risk.



Factors such as removing thatch, improving drainage and aeration, growing less susceptible cultivars and tailoring fertiliser inputs accurately are all elements of Integrated Turf Management (ITM) that will discourage disease from developing. Adjusting mowing height and using growth regulators to minimise effects of drought and heavy play also have a significant role in reducing stress on the plant its susceptibility to infection.

In an ideal world, this approach could keep disease down to levels where it causes no visible problems. In the reality of modern turf management, the changing climate and the demands of players, however, there are times when conditions will enable infection to break out.

RISK CALCULATION

The challenge for turf managers is knowing when the risk is high and what measures they can take to alleviate the disease pressure. Weather is a key factor in the risk calculation. But turf managers also need to be aware of the specific conditions and stress points that will make their own turf more susceptible to disease.

If you know when disease is likely to attack, then a well timed preventative fungicide will both reduce any existing pathogen in the sward – which is the first major step in knocking back development of the disease – and physically prevent spores germinating.

If you can get the turf through the high risk period until conditions conducive to disease subside, then turf can remain healthy and maintain quality far more effectively.

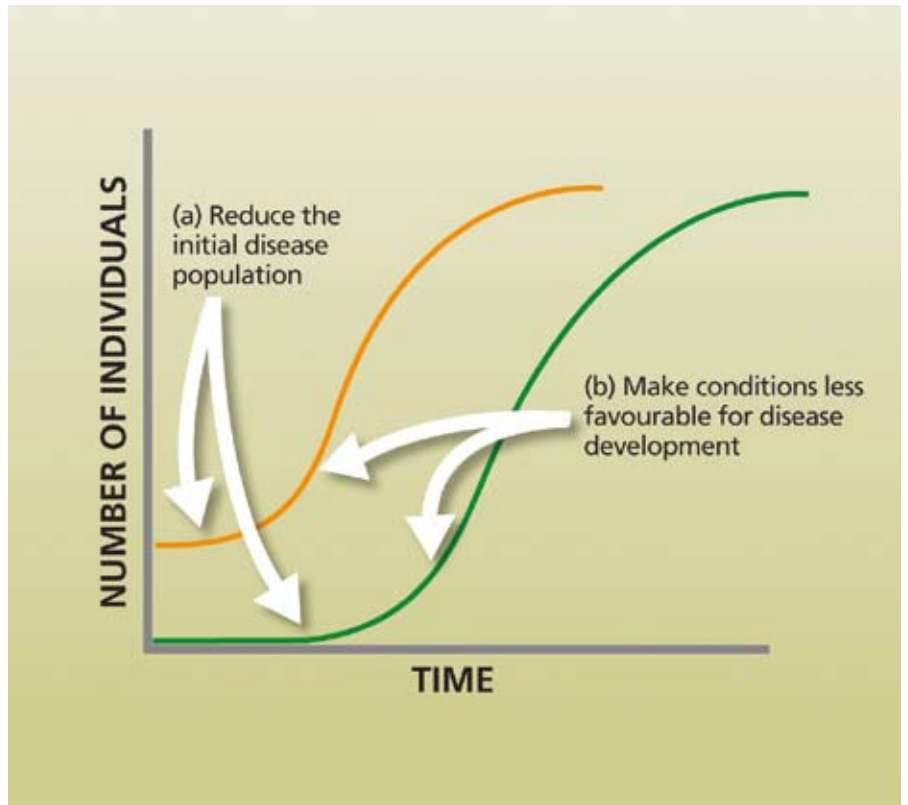
But, if the visible signs of disease have broken out during an attack, it will leave a huge legacy of spores and latent infection in plants, which will be poised to flare up again if conditions allow. Turf managers cannot afford to sit back and relax when risk periods have passed; a curative fungicide may prove invaluable in reducing the level of inoculum within the turf to limit further attacks. And it's the time when all action concentrates on the ITM measures that could reduce the risk of infection breaking out again.

GREENCAST AID IN PREDICTING RISK

“Being able to spot periods of high disease risk in time to take action is key to maintaining the highest turf quality,” said Simon Elsworth, of Syngenta.

STRI trials have consistently shown the best results in turf quality are achieved from fungicide application when disease spores have landed on the leaf, but before any symptoms are visible. Well timed curative fungicides at the end of a protracted period of disease risk can also successfully reduce the level of inoculum remaining in the turf and minimise the risk of outbreaks flaring up again so quickly (see fig 3).

The web based turf disease forecasting service, www.greencast.co.uk provides five day advance warning of local disease risks, based on UK disease models and impending weather conditions. Armed with this information, combined

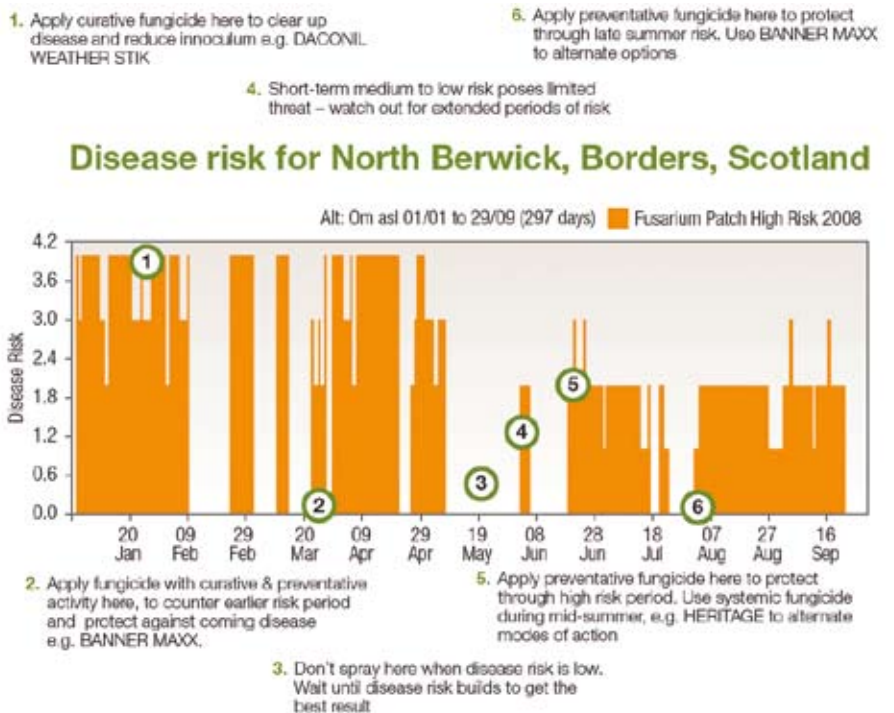


with their own knowledge and experience, turf managers can assess the local risk and time their fungicide applications accordingly.

The STRI trials have shown that using an ITM programme, along with Heritage fungicide applications timed solely according to GreenCast forecast of infection risk, can maintain better turf quality from a reduced number of fungicide applications over the course of the season, compared to routine or curative applications when disease damage has already occurred.

Fig 2 (above)
Reducing initial levels of disease present in the turf and changing environmental conditions to be less favourable for disease can delay the outbreak of any infection.

Fig 3 (below)
Turf managers can use GreenCast disease risk forecasts and information on previous disease attacks to formulate the best fungicide programme to protect turf quality.



Whats your Number?

Name: Stephen Fell
Company: Lindum Turf
Position: Managing Director



How long have you been in the industry?
"24 years."

How did you get into it?
"On a Nuffield Scholarship visit to New Zealand and Australia in 1984, I met someone who was growing turf on a poor sandy soil and making a great job of marketing it. We decided to have a go."

What other jobs have you done?
"I qualified as a Chartered Surveyor involved in rural land management and farm buildings in County Durham, managed a farm in France before coming back to manage a large agricultural estate in Kent."

What do you like about your current job?
"The challenges being thrown up by a changing economic and physical climate, the interesting people I meet, and working with our dedicated and loyal team."

What changes have you seen during your time in the industry?
"Improved grass varieties, greater understanding of soil science and plant nutrition, and the move to mechanised turf harvesting."

What do you like to do in your spare time?
"Gardening, walking, shooting."

Where do you see yourself in 10 years time?
"Watching one of my children growing the business and enjoying the privilege of living on a farm in Yorkshire."

Who do you consider to be your best friends in the industry?
"Some of my most loyal customers."

What do you consider to be your lucky number?
"7."

Pick a number
"14."

Stephen has picked Simon Taylor, from British Seed Houses, to take part in next month's feature.



WHATS YOUR NUMBER?

The Grass Group



professional from the ground up

Representing



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New Products



NEW PRODUCTS



ENHANCED TELESCOPIC HANDLER RANGE

Bobcat has completed an engineering and design programme that has introduced new features in all twelve of the company's telehandler models. Powered by Tier III diesel engines, the range of Bobcat telehandlers covers maximum lifting heights from 5.2 to 17.4 metres.

Bobcat® telescopic handlers are designed on common platforms, with the main components and control points situated in the same place on every model to simplify maintenance operations. The telehandler enhancement programme has therefore been holistic in nature, with improvements in every area of the machines. Among the new features is a substantial reduction in operating noise including a reduction of 8 dBA when steering.

www.bobcat.com

MID-DUTY WORKMAN UTILITY VEHICLES

Toro's latest launch is the Workman MD Series, an advance on the specialist turfcare machinery manufacturer's popular mid-duty utility vehicle design in the form of two dynamic new models – the Workman MD and MDX.

Set to replace the existing Workman 1100 and 1200 mid-duty models, Toro claim that the new MD and MDX machines offer unrivalled ride comfort as well as improved performance for the ultimate operator experience.

www.toro.com
00 353 (0)45 526170.



STAND ON MOWERS

Ariens has launched the new Pro-Stance 'stand on' mowers.

Fitted with either a 34" fixed deck or a fully floating 48" deck, these mowers offer the ideal choice for those looking for a commercial mower with a compact frame size. Both machines are supplied with a standard mulching kit, with rear and side discharge options available.

[08450 773 773](tel:08450773773)
www.partsdepotuk.com



COMPACT TRACK LOADER

The Terex PT-30 is the company's most compact rubber track loader. At only 48 inches wide, the PT-30 is sized to work in confined spaces, yet productive enough to replace an entire crew of hand labour.

The PT-30 is one of three new Terex PT Series Compact Track Loaders that range from 33.7hp to 80.5hp.

www.terex.co.uk
01698 503051.



MUCK TRUCK CLEAN UP

The Muck-truck is a four wheel drive pedestrian micro dumper that can be fitted with a variety of accessories to increase the productivity of the product.

The airflow of the vacuum attachment has been improved to increase the suction and therefore the collecting ability, also, the emptying operation has been simplified and made more efficient.

www.mucktruck.com
0845 838 5480.

ONE COOL CAT

Greenkeepers and groundsman now have a new implement to improve drainage and aeration on greens, tees and approaches – the Imants Sandcat from Campey Turf Care.

Matched to a 30hp tractor, the Sandcat pads lightly over the turf, with 21 blades of 8mm thickness penetrating the sward to 150mm deep at 150mm centres. Sand can be applied from the 500 litre hopper into the slits to improve drainage and enhance the rootzone quality.

i www.campeyturfcare.com
01260 224568.

NEW SPRAYER

New from DMMP is the Earthway Ev-n-Spred pedestrian sprayer. With two models, one garden retail and one commercial sprayer, they are ideal for fine turf and sportsturf situations.

i 0845 643 9776



INTERCHANGEABLE UNITS

Lloyds of Letchworth recently launched the Lloyds-Maredo Greensmower Turfcare System which is designed for ride-on equipment. The new range of interchangeable greens maintenance units have been designed and manufactured to fit all major makes of triplex greens mowers.

i 01462 683031
www.lloydsandco.com



BLOWERS BREEZE IN

Clearing litter and leaves has become a breeze, now that the new STIHL handheld blowers and vacuum shredders have swept in this season.

Included in the range are four new professional class models (BG 86/85 C-E and SH 86/86 C-E) said to deliver significantly low vibrations and reduced fuel consumption, along with a simplified four-step starting system.

i www.stihl.com

NEW ADDITIONS

Major Equipment Ltd has developed two new models to join its Rollermower range.

The new Major 11000GR and 15000GR Rollermowers come equipped with an innovative four point pivot system to ensure constant contact with the undulating ground.

i 01524 850501
www.major-equipment.com



TURF TROOPER IN FLAMES

The new Turf Trooper triple mower from Autoguide is about to set the market on fire, with its new flaming livery.

A quiet low revving 13hp Briggs & Stratton engine powers the mower driving three 7in diameter six bladed cylinders and the hydrostatic drive, ensuring sizzling and precise operation.

i 01380 850885
www.autoguide.co.uk



CHAINSAWS FOR EVERYDAY USERS

STIHL has introduced three new compact chainsaws – the new MS 171, 181 and 211 chainsaws all benefit from the latest technological developments, making them eco-friendly and efficient in use as well as powerful, comfortable and easy to handle.

i www.stihl.com



EX SERIES COMPACT TRACTORS

Ruston's Engineering has launched its new series of Kioti Compact tractors.

The EX series sits between the existing CK and DK range, offering machines in 35,40, 45 and 50hp, either in ROPS or with a luxury factory fitted cab. Matching front loaders and backhoes are also available.

i 01480 455151
www.reco.co.uk



IT'S ALWAYS BUZZING IN IPSWICH



Scott MacCallum visits Ransomes Jacobsen's Headquarters, in Ipswich, to chat with Managing Director, David Withers.



Scott MacCallum visits Ransomes Jacobsen's Headquarters, in Ipswich, to chat with Managing Director, David Withers.

There is always buzz when you visit Ransomes Jacobsen's Ipswich Headquarters and this occasion, visiting the company to write a Golden Key profile, was no exception.

Even before I'd got through the front door I heard my name being called out by a group of greenkeepers, who'd spotted me in the car park. As soon as I had stepped into the foyer there was Managing Director, David Withers, chatting with someone beside the Reception Desk, eager to greet me. Once I'd signed in and was following David to his office I bumped into UK Sales Manager, Rupert Price, deep in conversation with someone, in the corridor.

"We have a target to bring 1000 visitors to Ipswich each year, show them around and give them a flavour for Ransomes Jacobsen," explained David.

Last year they achieved a very laudable 920.

"It helps us to build relationships with our existing customers and, hopefully through what we can show them here, encourage others to become customers."

is very difficult to change him.

"We know we make good machinery and I'm sure the other companies believe they make good

machinery too. Let's face it, it all works, so the real differences come in after sales, the quality of the dealership and the relationships that have been built up."

Two of those dealers were already on site – White's and Doe's – each hosting groups, while there was also a party of Danish greenkeepers on another tour. As I say, it's a busy place.

"I don't think you would find a greenkeeper changing brands for his greens mowers straight away, as they all know that they are judged by their greens, but you might just be able to convert them to a tractors or a rough mower. It's good just to give them a chance to visit us and see what we do."

It also gives visitors the opportunity to see the latest acquisition to the Ransomes Jacobsen stable of attractions – the superb three hole par-3 golf course, which was opened by the Mayor of Ipswich, in October.

Relationships are exceedingly important on all levels at Ransomes Jacobsen. There is a 1% turnover rate per annum on staff, excluding retirements, while the annual length of stay for the 200 shop floor staff, and 340 in total, is 25 years.

"It's great to have the continuity of employment because we have vast experience on the factory floor, while our sales staff, including Nigel Church, Alan Prickett and Rupert Price, are all extremely well known and respected within the industry."

It's great to see a genuine manufacturing plant

still prospering in the UK and David, although he has done it many, many times – the previous day, for example, he'd taken round the Ipswich Town FC ground staff - is genuinely enthusiastic about taking me around the plant and showing off what Ransomes Jacobsen is best known for – producing grass cutting machinery.

The first thing that struck me from my previous tour, which must have been about four or five years before, was the airiness and brightness of the factory.

"We're just coming to the end of a five year restructuring programme, part of which was to paint the ceiling white and lay new cushioned flooring throughout the building.

"We've noticed a significant drop off in the number of back complaints we've had since the flooring has gone down. It's only a couple of millimetres thick but the cushioning has obviously helped and with fewer days lost to bad backs it has had some benefits said David, who, judging by the chat as we moved through the building, knows most on the shop floor by name.

One of the main aims of the restructuring was to improve the production work flow.

"The assembly lines had run sideways and not long ways which wasn't the most efficient, as we kept having to move partially completed machinery around the shop floor.

The assembly lines were, therefore moved to run long ways down the building, starting with the



RJ International, the new three hole golf course

paint shop, moving onto the assembly line, with the cutting units fitted at the end. The welding and pressing areas were also sited to reduce unnecessary movement around the shop floor.

“It was a bit like doing a Rubic Cube to move everything around. We had to slide some sections into temporary areas until their new location had been completed and it was a really complicated procedure all round.”

The restructuring freed up 35,000 square feet of factory space which became the Customer Care area, and allowed room for the £4 million worth of spare parts which are carried.

Indeed, the most delicate move was parts because if it didn't go smoothly the customers would surely notice.

“We tackled this at night, moving around 200 parts a time, and it all went extremely smoothly. In fact, one dealer was worried about the effects of the move and was delighted when we told him that we'd actually finished the entire move the previous night.”

One recent innovation on the shop floor is the yellow painted “master copies” of machines which sit alongside the assembly lines.

“They give the workers something to use as a reference if they are not 100% sure about a component. They can give it a hands-on test on how it fits and how it should look once it has been fitted. We're currently fitting them onto to rigs so that they can be spun around making the underside as visible as the top,” said David, who believes a company never stands still – it's either on an upward or a downward spiral.

“We were on a downward spiral in the late 90s and early noughties following the merger of Ransomes and Jacobsen while the upward spiral has been in place for the last five or six years.”

The assembly lines allow for individual specifications to machines to be carried out as the line rolls forward and often green Ransomes kit and orange Jacobsen kit is worked on at the same time.

“Each piece is clearly labelled at the start so the assembler knows what bespoke elements are required on that particular machine.”

It was also extremely interesting to see the trolley system which operates and which eliminates the need for much of the paperwork you'd expect to see in a fully functioning factory.

A trolley is filled with parts and goes to the person who is going to be fitting that particular part. When the trolley is empty it goes back to where the part is made and refilled.

“The pace of production is dictated by how many trolleys we have in place. The more we have in operation the faster the rate of production and if we want to slow down we just remove some of trolleys. They are a little like the oil that makes the factory operate,” said David, as we walked past the party of Danish-based greenkeepers staring intently at a particular production process.

Once the factory tour was complete the Danes, and the other two parties, enjoyed some lunch before testing some of completed machinery on the RJ International, the new three hole golf course, which opened recently. The culmination of the visit is a game around the course where one over par 10 is still the score to beat.

“We are going to put all the scores on the website to create a bit of interest,” revealed David, who claims the number of rounds he has had could still be counted on the fingers of one hand.

“We are really proud of our course and, while I've take a bit of ribbing about having our own course, it has some really practical benefits for us. For example we can have customers and potential customers test kit in authentic conditions – we have different rootzones and grasses on each green to give ourselves as many options as possible.”

The course is maintained by young greenkeeper, Rory Ferguson, who spends one day a week at Writtle College, and the rest of the time on the course, revelling in being one of the few greenkeepers who doesn't have to worry about where his next piece of kit is going to come from.

“He likes his machinery. I think he'd be lost without an engine,” joked David.

The newly-developed piece of land also includes a superb decked terrace overlooking the golf course for staff to enjoy their lunches in the summer and a training football pitch.

“Ipswich Town Manager, Jim Magilton, was here for the opening and he's going to bring his first team squad over to train on the pitch and then have a game of golf. It keeps the interest level for the players and gives our staff something different to look forward to,” he said.

Ransomes Jacobsen has had a longstanding relationship with BIGGA and been a Golden Key Supporter of the Association for a number of years.

“Again it's about relationships and we have done a great deal to foster the relationship we have with BIGGA and its members over the years and are pleased to have been able to help so many,” said David.

The Ransomes Jacobsen Scholarships, which were introduced in 2002, have given financial assistance to a total of 92 BIGGA members to complete higher education courses while the company also donated generously to the production costs of the Safety Management System which was launched in 2007.

You can be sure that the Ipswich HQ will continue to buzz as David has a cunning plan to ensure many medium and long term projects are done.

“In many places it's these plans that are overlooked but I believe if you timetable an occasion every year it gives a deadline to meet and you can hang other jobs on the back of that occasion.

“For example we had Sir Bobby Robson open our new offices four years ago; we had the opening of our new parts department two years ago; our 175th birthday celebrations in 2007 and our new golf course opening earlier this year.”

It certainly promotes the buzz and a “Can do” attitude to working at Ransomes Jacobsen.



WHOLE BODY VIBRATION (WBV): RAISING AWARENESS FOR GREENKEEPERS

By Herbert Barker

Over the past few months GI has been working in conjunction with vibration testing services Fivesquared to discuss the implications of Hand Arm Vibration (HAVS), Noise Awareness and Whole Body Vibration (WBV). WBV is the final article in the series.

Overview

In 2002, the European Commission introduced legislation 'harmonising' vibration levels in the workplace for all member states, and gave each state three years to bring it in to effect. The UK 'version' became law in 2005 as the 'Control of Vibration at Work Regulations (2005)' which details the responsibilities and obligations of employers to monitor and control the effects of vibration in the workplace.

Whole Body Vibration in Golf Clubs

Our research shows that a relatively small number of golf clubs have implemented control measures for Whole Body Vibration management in their Golf Club.

We have found that some Greenkeeping staff use Ride-On equipment for periods of four or five hours on a daily basis, this may be using the latest equipment available, the majority of which should have vibration reduction measures built in, but some are using old types of machinery over rough ground in some instances for long periods of their working day. Some golf clubs have

decided that the regulations don't affect their club or indeed the staff who use the equipment and have 'shelved' any action to control vibration in their workplace.

What is WBV?

Whole Body Vibration is a widespread recognised industrial problem affecting many workers, in many industries, but particularly in construction, agriculture, forestry, grounds maintenance, and transport, where vibration exposure from use of vehicles or plant in these industries, is regular, prolonged and frequent. It is a disorder which can affect the lower back, spine, and possibly the neck and shoulders. It has been associated with these disorders, but may not be the whole cause, as the symptoms can be due to other causes associated with posture, and manual handling.

Some vehicles and plant likely to cause or aggravate back problems and involve exposure to high levels of WBV are:

- Off road vehicle · Tractors and farm vehicles · Ride-on greenkeeping vehicles
- Heavy construction/maintenance vehicles and plant · Excavators, loading shovels, road rollers · Quarrying vehicles and plant · Helicopters · Fast boats · Railway vehicles (especially old rolling stock) · Large static machines, used in compaction, hammering or punching.

This list is by no means comprehensive and where people regularly work with vehicles and plant such as these for prolonged periods, there is likely to be a risk of exposure to high levels of

WBV. It is safest to regard regular prolonged use of any high vibration vehicle or plant as suspect, particularly if such devices produce (or are subject to) frequent shocks and/or jolts.

How do I recognise it?

WBV occurs when a person's body is supported on a vibrating surface. This is most likely when sitting on the seat of a moving vehicle, or operating vibrating machinery. Standing, while operating machinery designed for such an operator stance, can also produce WBV in the operator. Prolonged exposure to WBV can affect the lower back, spine, and possibly the neck and shoulders.

WBV can be caused by:

- The movement of the wheels or tracks of a vehicle, crossing an uneven or rough surface. If the driver experiences shocks or jolts, or is thrown around in the cab by such terrain, this will contribute significantly to the levels of WBV.
- Using mobile machines to excavate holes or trenches in the ground.
- Using mobile machines to load materials (e.g. sand) into lorries.
- The rotation of helicopter rotor blades, causing high WBV levels to be transmitted through the airframe into the seats.
- Boats travelling fast across rough seas.
- Railway vehicles (especially old rolling stock)
- The operation of large static compaction, hammering, or punching machines, such as

hammer drills and mobile crushers.

Lower back pain may be caused by prolonged exposure to WBV from the above sources, but there can be other possible contributing factors, such as:

- Poor posture while driving or operating plant.
- Sitting for long periods without being able to change position.
- Poorly placed controls which require the driver/operator to stretch or twist to operate them, or driving over rough ground while checking over the shoulder on the operation of attached equipment.
- Manual lifting and carrying of heavy or awkward objects, especially if this is combined with the effects of WBV from driving or operating vehicles or plant.
- Repeatedly climbing into or jumping out of high or difficult access vehicle cabs.

All the above factors (including WBV) can separately cause back pain. The risk will be increased, however, where a person is exposed to two or more factors together.

WBV can be prevented or mitigated through management of the problem.

Who is at risk?

Any workers seated or standing on a mobile vehicle on a regular or frequent basis, especially if this involves travelling over uneven surfaces, are most at risk.

These occur in a wide range of industries, including: • Road and railway construction/maintenance • Construction • Forestry/Gardening/Greenkeeping • Foundries • Light and heavy engineering • Mining and quarrying • Metal working • Public services • Public utilities

What can I do about it?

The challenge is to determine which information is correct and current. This can be somewhat confusing. Successfully to protect your workforce from the effects of WBV it is vital that employers have an effective Whole Body Vibration Management System to - Assess, Measure, Monitor, Control, and Manage any associated WBV risks.

Employers are obliged to provide information and training for employees to ensure knowledge of health risks, health monitoring, vibration management systems, safe use of equipment, and awareness of problems associated with WBV.

Assess

The first stage is assessment – “Do I have a problem?”

This can be achieved with a simple questionnaire asking the present workforce whether they are suffering from any of the symptoms of WBV, and the prevalence of lower back pain occurring in the workforce.

The responses to the questionnaire will determine what to do next, as there is no specific appropriate Health Surveillance for WBV as the

symptoms displayed can be caused by other factors. However, employers can use informal health monitoring to regularly check on reports of back pain etc. to identify possible risks from WBV, manual handling, or driver posture.

Potential employees should also be questioned on previous employment to ascertain previous work which may have entailed vibration from vehicles driven over rough ground, and hobbies which may involve high vibration – e.g. motorsports.

Health Surveillance

There is no specific appropriate Health Surveillance for WBV.

Regular check ups may be necessary to monitor employees suffering lower back pain symptoms.

Vibration Levels of Equipment

Sources from which employers can obtain vibration data for vehicles are – Manufacturer’s Literature, Equipment Suppliers, Internet databases, Research Organisations, Trade Associations, HSE, Vibration Consultants.

Measurements in the workplace

Of these, the most accurate tends to be Measurement in the workplace, which gives vibration levels for YOUR machines or equipment operating under YOUR working conditions.

Having obtained vibration levels under working conditions, employers should determine the highest vibration machines and attempt to re-design the job or process to eliminate the use of high vibration machines in these processes. This may prove to be practically impossible, as there are few examples of other methods of work that eliminate or reduce exposure to WBV.

The legislation set lower values for Whole Body Vibration in 2005.

Daily Exposure Action Value (EAV) – 0.5m/s² (metres per second squared).

Vehicles or processes having vibration at this level or above must have a risk assessment; the workforce must have information or training to recognise the symptoms of WBV; and PPE issued to mitigate the effects of vibration and cold. No PPE is specifically available to combat the effects from WBV. However, any PPE that provides protection from inclement weather conditions (i.e. keeps the wearer warm and dry) will assist in combating any effects of vibration exposure.

Daily Exposure Limit Value (ELV) – 1.5m/s² (metres per second squared).

For vehicles or equipment having vibration at this level or above (which have an economic life) employers should attempt to reduce the vibration levels to below

the ELV, by fitting any appropriate anti-vibration fittings, suspension seating, or purchase new

vibration reduced vehicles or equipment.

Vibration Dose Values

A slightly different action level known as the Vibration Dose Value (VDV) can also be used. This measures the sum of WBV exposure to jolts and shocks. The daily exposure action level for VDV is 9.1 m/s^{1.75}. The VDV daily exposure limit value is 21 m/s^{1.75}.

Although Vibration Dose Value (VDV) measurements are not compulsory in the calculations of the Daily Vibration Exposure, they can be used in conjunction with the Daily Exposure values to assess any remedial action necessary to any vehicle.

Vibration Dose Values (VDV) are more sensitive to the effects of instantaneous shocks or jolts and, (if compulsory) could potentially indicate extremely limited use for a particular vehicle, or make it commercially impractical to use the vehicle.

They are, however, useful to prioritise action for vehicles exceeding the VDV Action levels, even though these vehicles may not exceed the Daily Exposure action levels.

Where vibration levels are still above the ELV after vibration reduction measures have been implemented, then the only other option is to reduce the time each person uses the vehicle or equipment.

Monitor, Control and Manage

If an operator uses one vehicle per day, then monitoring and control of vibration levels becomes relatively simple. The problem occurs when operators use several vehicles for shorter periods than allowed by the vibration levels measured. Each ‘burst’ of vibration has to be added to ensure the operator is not exceeding his/her daily vibration level.

There are several methods in use but the simplest is a system whereby vibration values can be converted into ‘points’ (using suitable formulae) and the vehicle is ‘tagged’ with this information.

The operator simply has to note the number of points on the tag, and multiply by the time used (driver seated – engine on) to determine how many points have been used on each separate use of vehicles.

There is a ‘daily’ maximum number of points, and as long as this is not exceeded, then the operator will not exceed his daily vibration level.

This is an effective, real time, management system, in use by many of Fivesquared’s clients including – Local authorities, public utility companies, large construction companies, and many golf greenkeeping departments.

About the author

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News from the Chief Executive

The suggestion by the Board that Full Membership should be opened up to Sports Turf Groundsmen seems to have sparked off a very mixed debate, but that should come as no surprise to anyone! There does however appear to be some confusion over the Association's motives for making such proposals and I will try to explain the rationale behind the move:

1. The discussions between BIGGA and the IOG during 2007 (ultimately terminated by the IOG) identified a great synergy between greenkeepers and groundsmen. Today greenkeepers can join the IOG as Full members why should BIGGA not afford the same privilege to suitably qualified groundsmen?

2. BIGGA will be putting a recruitment campaign into place to try to enrol further greenkeeper members but why should it not also market its services and the benefits of membership to groundsmen?

3. BIGGA is not setting out to 'wage war' on the IOG it is merely hoping to increase the available choice of professional representative bodies for sports turf employees. There are a great number of such employees who do not belong to either organisation - because they see no value in membership or because they are currently not entitled to join.

4. BIGGA has had a positive influence on the development and accreditation of the greenkeeping modules of sports turf qualifications through its active membership of the GTC. This has been achieved thanks to the close working relationship that exists between employer and employee, resulting in successful consultation with the awarding bodies. A process that is ongoing.

5. A great deal of the success in greenkeeper training is transferable directly into the rest of the sports turf industry. Why should BIGGA, and the GTC, not try to capitalise on this?

6. BIGGA, like so many other businesses, is suffering from the current downturn in the economic climate but it is not in financial trouble and it did make a surplus in the last financial year. If really necessary savings could be made but this would inevitably lead to a reduction in standards. A greater number of members would help improve financial stability, create better buying power, should attract better trade support and could help the Association win more official grant aid.

7. The sports turf industry is fragmented and BIGGA, working with the GTC framework, the awarding bodies and the training providers is in pole position to develop a National Centre for Sports Turf at Aldwark.

8. Courtesy golf is a privilege extended to BIGGA members so that they may improve their greenkeeping experience by playing other courses. It is not a right of membership, although I will be asking clubs to look more favourably at this through my connections within the GCMA and the Home Unions. The inclusion of groundsmen within BIGGA membership should not jeopardise these relationships and clubs will have the option to refuse groundsmen the same privilege. Membership cards will clearly distinguish greenkeepers from groundsmen by virtue of their job title and employer details.

My space is limited but I would like to clarify one point that seems to be misunderstood. BIGGA is governed by a Board that is made up of greenkeepers, with one exception (Mark Dobell - Guardian and the Finance Director of the R&A). The Board sets the policy that is administered by the Staff, headed up by myself, all of whom are accountable for their actions. I, in turn, am accountable to the Board. Contrary to popular belief the Association is therefore run by greenkeepers for the benefit of its members and not by the staff for their own ends!

The draft proposals for a change to the Constitution have been circulated for the purpose of consultation and will not be implemented without the overwhelming consent of members.



SCOTTISH REGION - CENTRAL

The Central Section held their AGM at Elmwood on October 27, when Gordon McKie, of St Andrews Links, was elected as Chairman and Derek Robson, of the Dukes Course, was elected Vice Chairman. Also elected to the Committee were Donald Gardner, of Scoonie GC, and Bob Meikle, of Craig Golfing Society. Andy Mellon remains as Secretary/Treasurer. Andy O'Hara has stood down as immediate Past Chairman and been re-elected to the Committee. Graeme Taylor and Alan Sharp, who has left the area, have both stood down from the Committee and we thank them for their help over the years, although Graeme will continue to administer the website on our behalf.

Those present heard that Kenny Mitchell, of St Andrews Links, and Charlie MacDonald, of Crieff, were the recipients of the Patrons Award for the Section and that the Spring Outing in 2009 will be held at Scotsraig GC. The question was asked "How much golf will Derek Scott be able to play now he no longer has the distraction of being Chairman?" Answers on a postcard to...

Prior to the AGM, Martin Heywood, of Quadrop, gave an informative presentation on the benefits of good quality irrigation water and the problems that can be encountered by using unsuitable water. The Quadrop system has been used in many areas other than golf course irrigation and is a very simple, safe and effective way of reducing bi carbonates, reducing ph and reducing surface tension among other benefits. Both Kingsbarns Golf Links and The Castle Course, along with Dunbar and Longniddry have been using the system for the past couple of seasons with great results.

The website: www.biggacentralsection.org.uk has been quiet over the summer with everyone being busy, so let's try and pick it up again. We have been trying to drip feed information onto it on a regular basis to try and keep it fresh. It's unfortunate that a lot of this is about St Andrews Links but unless others supply us with the info, there's not a lot we can do so if you have something you think will be of interest to others then pop it in an email to Andy Mellon, Gordon McKie or myself.

A number of members from Clubs in the North East Fife area attended a three-day workshop over consecutive Fridays on Risk Assessment training. An important aspect of health and safety procedure, the course conducted by Pitchblue International, took those present through practical examples of identifying hazards and writing up risk assessments as well as covering current health and safety regulations. With a grant from the BIGGA Education fund, the course cost £125 per person and if there was enough interest from others in the Section then I am sure we could stage another one in a more central area in February. Again, please contact your committee to let us know.

This course might be quite appropriate because through October we have had visits from the Environmental Health Officers for NE Fife to carry out very comprehensive inspections of our operations and procedures at all three greenkeeping facilities at St Andrews Links. This is the beginning of them working their way through all golf clubs in the area so be aware.

On behalf of everyone on the Committee, have a Merry Christmas, a Happy New Year and may all your problems be birdies.

Gordon Moir