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# Education Update

Ken Richardson outlines some of the Education Department's projects over the next few months.

July is another hectic month in the Education and Training Department, as we begin judging the Toro Student of the Year competition; begin judging the BIGGA Golf Environment Competition, supported by Scotts, Syngenta, Ransomes Jacobsen and Course Care; get involved with setting European standards of competence and finalise the Continue to Learn Programme for Harrogate Week 2007.

## TORO Student of the Year 2006



Judging for this year's Student of the Year Competition took place at the beginning of this month with eight finalists being selected from 36 high quality entries. The final of the

Competition takes place at BIGGA House on Monday, 18 September. See future editions of Greenkeeper International for details of the National Finalists.



## BIGGA Golf Environment Competition

The deadline for this Competition, supported by Scotts, Syngenta, Ransomes Jacobsen and Course Care was at the end of June. The entries have been checked before being delivered to the STRI where Bob Taylor and Lee Penrose will begin the judging process. This first stage of judging selects the clubs that will receive a visit from one of the SRTI ecologists throughout the summer. Prize winners should be notified in early October and all prizes will be presented during Harrogate Week.



Following the extremely successful Continue to Learn Week at Harrogate last January, it has been difficult to extend the amount and range of education on offer. However, by working with the GTC, the R&A, the AGCS, the EGU and our industry partners, we have managed to improve the programme even more. With extra workshops and more seminars targeted at greenkeeping staff, groundsmen, secretaries, golf club managers and officials there is, truly, something for everyone. Not only that, we have listened to feedback that expressed concerns regarding cost and we shall be operating a discount scheme for those attending more than one seminar. This will apply to clubs and individuals so the more you send the cheaper it gets.



## Pan European Greenkeeping Standards

As David Golding outlines, the R&A carried out a survey of all European Golf Unions/Federations in 2004, to gauge the need for a common set of competence standards throughout Europe.

The feedback showed that there was overwhelming support for common standards and it also showed that some countries would welcome help in implementing those standards. Therefore, the first meeting of the Pan European Greenkeeper Education Unit, took place last month to determine the way ahead. The meeting, hosted by FEGGA, brought together delegates from Switzerland, Germany, Holland and the UK to look at how European Standards could be introduced; how the various countries could meet the Standards and to look at the need for a European qualification.

At this stage, you might well ask why we need yet another qualification in the UK when we have a wide range of qualifications from N/SVQ to Masters Degree. This was one of the first questions discussed at the meeting and it became clear that many of the countries in Europe had their own education and training systems that led to the award of qualifications. Moreover, it became clear that there was Europe wide acceptance that there were three types of job on golf courses, ie Golf Course Greenkeeper, Golf Course Supervisor and Golf Course Manager. Each country has its own range of job titles but the jobs done on golf courses fall into three distinct areas.

### Their meeting made four main recommendations:

- European Standards should be developed that reflect the three types of job on a golf course, i.e. Golf Course Greenkeeper, Golf Course Supervisor and Golf Course Manager.
- That each country in Europe should be encouraged to apply to have their greenkeeping qualifications recognised as meeting the European Standards.
- That European Certificates of Competence should be issued to individuals throughout Europe whose, in-country qualifications meet the European Standards.
- That the European Greenkeeping Education Unit (EGEU) should be established.

European Certificates of Competence would allow greenkeepers to seek employment throughout Europe and employers would be able to easily check that job candidates held an appropriate qualification and were competent to 'do the job'.

Countries new to golf and just starting to develop their education and training systems or those without systems in place could be given guidance and help to meet European Standards.

Further meetings are planned later this year to determine the Standards, suggest a business plan and determine quality assurance procedures.



Rachael and Gemma would like to welcome 66 new members to the Association and talk about sun exposure.

## PROTECT YOURSELF FROM THE SUN

Exposure to Ultraviolet (UV) radiation from the sun, can cause blistering, sunburn and in the long term can lead to skin cancer. Outdoor workers receive, on average, three to four times more UV exposure each year than indoor workers, which in turn puts outdoor workers at greater risk of non-melanoma skin cancers. People who are regularly sun burnt are also at increased risk of malignant melanoma, which is one of the most dangerous forms of cancer.

To reduce the health risk of working in the sun the following suggestions are advised:

- Encourage workers to keep covered up with a long sleeved shirt and a hat with a brim or flap, that protects the ears and neck. Tightly woven fabrics offer better protection.
- Consider scheduling work to minimise exposure such as reserving sheltered jobs for the middle of the day or rotate staff on different tasks to limit exposure to the midday sun.
- Encourage workers to use a sunscreen of at least SPF 15 and apply regularly.
- Encourage workers to take their breaks in the shade if possible.
- Encourage workers to drink plenty of water to avoid dehydration.



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All prices are exclusive of VAT

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### JULY'S MEMBERSHIP DRAW WINNER

Just introduce one or more new greenkeeping members to BIGGA and your name will be placed into a monthly draw to win a £10 Music Voucher. Our congratulations go to Duncan Gray of the Pines Golf Centre.



### BIGGA welcomes...

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Richard Cuthbert, West  
Josh Gilbert, North  
Paul Hunter, Central  
Gary Lackie, East  
Robbie Macbeth, Ayrshire  
Clinton Maxwell, West  
Gordy Maxwell, West  
Craig McCorrie, East  
Derek Mcleod, East

#### MIDLAND REGION

Steven Bamford, East Midland  
Robert Bemment, East of England  
Shaun Bodkin, East Midland  
Alan Harper, Midland  
Nigel Harris, Midland  
Robert Hogan, BB&O  
Andrew Nelson, East Midland  
Jamie Pack, East Midland  
Simon Pech, East Midland  
Terence Prior, East Midland  
Thomas Tasker, East of England  
Mark Turnbull, Midland

#### STUDENT MEMBERS

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Damien Daly, Ireland  
Stephen Davies, Ireland  
Ricol Erickson, Central Scotland  
Mark Gemmill, Essex  
James McEvoy, Ireland  
Hugh McNamara, Ireland  
Graeme Mutch, Sheffield  
Kevin O Sullivan, Ireland  
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Daniel Freeman, East Anglia  
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Tom Town, Kent

#### SOUTH WEST/SOUTH WALES REGION

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Mark Gittings, South West  
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Ian Suffield, North East  
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Joe Crawley, South Coast  
Keith Page, Surrey  
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#### SILVER KEY MEMBER

Gerry Gorevan, West Scotland

### SUMMER OFFER

To help you cover up this summer BIGGA have added two styles of cargo beanie hats to its merchandise range.

The Cargo Beanie is made from 100% cargo nylon and has an elasticated draw cord size adjuster with toggle. It also has a towelling sweatband and a mesh lining for extra comfort. This beanie is available in Navy with a Stone trim or Stone with a Navy Trim.



The Textured Pocket Beanie is made from 100% textured cotton and comes with a side pocket. One size fits most. This beanie is available in Stone or Navy.

Both hats are available for the special offer price of £5.99 (normal price £7.99), BIGGA logo hats are available for £7.99 (normal price £9.99).



Your club logo or any other wording can be stitched onto the hats. Ring Rachael Duffy for further details.

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## YOUR LETTERS ARE REQUESTED!

Send to: Scott MacCallum, Editor, Greenkeeper International, BIGGA HOUSE, Aldwark, Alne, York YO61 1UF, or email them to: [scott@bigga.co.uk](mailto:scott@bigga.co.uk).

Dear Sir,

I would like, through the pages of the BIGGA magazine, to thank Rigby Taylor for the recent trip to Angers, France and the 'Top Green' seed research station at Les Alluar. Myself, along with a good cross-section of other turf professionals, enjoyed a well organised, informative and thoroughly enjoyable excursion across the channel. The proficiency of the RT representatives was only 'topped' by the enthusiastic and passionate presentations, tours and talks by Brian and Stephen which managed to keep us all highly interested even in temperatures of 30 degrees plus.

It was genuinely pleasing to learn new things both in the classroom situation and out on the various sites, literally, in the field. Although a golf greenkeeper myself, I found it a huge benefit conversing with other colleagues from football, turf producers, landscape designers etc. One sometimes forgets just how important the humble grass plant is and equally how those of us who are in the industry of growing it, usually in the most difficult of circumstances, are just as important. An observation

# Letters ▶▶

that was not lost on these astute seeds men and a real ego booster to those who were sat around the table listening to them tell us. Which, I feel, needs to be passed on to everyone who reads the pages of this magazine, especially for those who are suffering from low self esteem because of some mad golf club policy or green chairman/captain's vindictiveness. You're damn clever at what you do!

Anyway, stepping down from my soapbox. I would like to thank Rigby Taylor and their representatives, once again, for an extremely educational trip and for looking after us so well. Should anyone else get the opportunity to venture out to this incredible place, then I suggest you grasp it with both hands.

Ian Lavelle  
Course Manager/Head Greenkeeper  
Whitby Golf club

# As Easy as ABC



You never stop learning so, in conjunction with the GTC and lecturers from some of the UK's top greenkeeping colleges, GI has launched a new series which gives the developing greenkeeper the chance to add to their knowledge with some useful advice.



Ian Butcher - International Development Officer

## BUNKER RAKING - A CHORE?



Why is it that apprentice greenkeepers in our classes at Elmwood, regard bunker raking as somehow a poorer quality job than say mowing fairways, and as a result take less job satisfaction from it?

Bunker sand is as much a playing surface as any other part of the golf course. And what do greenkeepers do for a living? Prepare a playing surface for golf! Now there are many sand raking techniques employed for different effects and I haven't space to explain them all. Rough or flat raked is the current debate, and Jack Nicklaus took enough of an interest in course set up at the Memorial Tournament at Muirfield, Ohio, deliberately to take a tine out of each rake to create an unpredictable lie. Suffice to say the Head Greenkeeper will dictate how the bunkers are to be prepared on a daily basis. What I want to highlight here is that it is about perspective and attitude. If you see a job as a chore, so it will be. But if you can see each task on the golf course as equal in value in terms of contributing to the whole then a proper sense of job satisfaction is more likely to occur.

Approach each bunker as you would a putting green: ensure that the sand is at a consistent depth in the playing area, 150 mm consolidated is a rough guide, and that as much as possible each bunker plays like another. Rake slowly, concentrating on smoothing out any ruts, avoid contamination from soil or grass and before leaving the bunker check there are no leaves, stones, litter or weeds and be aware of the rule concerning "loose impediments". Ensure each bunker has a rake for the golfer positioned as per instruction. If you haven't got enough rakes you've got too many bunkers.

If you are interested in developing your career at an early stage as an apprentice you can demonstrate the ability to take responsibility by involving yourself in ensuring high standards are met everyday. Think about how the job can be made more time efficient, can the equipment be improved, is the sand of the right grade, how can re-occurring problems such as leaves, poor etiquette be resolved?

Once you are in the habit of seeing every task from tee to green indistinguishable from any other, and deserving of your full attention, then through teamwork and attention to detail a good golf course can be elevated into a great golfing experience.



Ian faces up to the biggest bunker challenge in golf - Hell Bunker on The Old Course



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# Cultural practices and their effects upon turf grass growth and stress tolerance

Nowadays, greenkeepers are under increasing pressure to provide near-perfect playing conditions right throughout the year. Today's golfers have come to expect playing conditions, that only a few years ago seemed impossible. The demands of the modern game of golf have resulted in stressed turfgrass plants - with reduced leaf area, limited photosynthetic capacity and increased susceptibility to disease infestation.

*Continue  
to learn*



Tim Butler outside Michigan State University

Greenkeepers are continually evolving to meet these demands and using every technique and practice at their disposal to meet the fast-changing needs of the modern golfer. However, have you as greenkeepers ever seriously thought about what is happening within the plant itself, or below your feet in the rootzone as you implement the many cultural practices that have become an integral part of every golf course's day-to-day schedule?

Mowing, fertilisation and irrigation, are probably the main turfgrass operations needed to sustain turfgrass quality. These practices are interdependent on each other, for instance, a change in mowing height or frequency will require changes in the irrigation and fertilisation programme used. It is easy to simply look at each cultural management technique separately and forget that how you manage any specific practice, will ultimately affect all other aspects of your specific cultural programme, whether obvious or not.

Of all cultural practices used in turfgrass management, I believe that mowing has the greatest effect on plant growth, development and stress tolerance.

Golf greens are an extreme example of a stressed setting. It is easy to forget the impact of low mowing heights on the turfgrass sward's ability to make carbohydrates, which provide energy and raw materials for metabolic processes within the plant. Grasses grow by cell division and thus the oldest part of a leaf is its tip and the youngest its base. The practice of mowing removes the mature part of leaves, which are active photosynthetic tissues and give the main contribution to the energy needs of the plant. The photosynthetic process comprises the use of energy, carbon dioxide and water by the plants -used to make carbohydrates, which the plant then uses for food. In combination with fertilisation, photosynthesis provides the plant with the raw materials for new growth.

At higher mowing heights, the plant is able to store the carbohydrates as reserves, to use if under stress. However, at low mowing heights the plant is unable to store these carbohydrates because of the continuous

removal of the carbohydrates produced. Photosynthetic rate is also reduced under low mowing regimes, because plant cells that contain chlorophyll are removed and consequently stomata number which are used to allow CO<sub>2</sub> to enter the plant are reduced. To try and compensate for the reduction in reduced leaf area experienced under low mowing heights, plant leaf chlorophyll content increases. Chlorophyll molecules secure the sun's energy, and thus the plant tries to save more energy, since its leaf area is reduced.

Another turfgrass response to low mowing heights is reduced rooting depth, because carbohydrates are used in root production. Shoot density increases, at the expense of root density as mowing height decreases, although tillering number is increased.

The turfgrass stand's ability to tolerate biotic and abiotic stresses will ultimately be affected by this limited root system, with a weaker grass plant as the final outcome. The problem is compounded by the use of inert sand-based mediums as on many golf greens, which have limited amounts of soil organic matter and poor water holding capacity. Coupled with this, there is potential for leaching of applied nutrients and pesticides as a consequence of the reduced root mass. Shoot water content (succulence) increases at lower mowing heights. Shoot succulence decreases cell wall thickness, which makes the turfgrass plant more susceptible to environmental stresses and diseases.

Fertilisation is the practice of supplying essential plant nutrients as part of the turfgrass management strategy. Correct nutrition is essential for the plant to maintain high quality and to carry out physiological processes. Fertiliser's represent an invaluable chemical tool, without which, turfgrass management would be very difficult. Nitrogen, phosphorus, and potassium are the main macronutrients that greenkeepers are confronted with on a frequent basis. These nutrients are required by the plant for growth and function.



The effects of a low height of cut



## By Tim Butler

Nitrogen is the mineral required in greatest quantities by the turfgrass plant. Nitrogen is required for tissue growth, good turf colour and wear tolerance. However, the concept that it's better to apply more than less - as applies to N application - may not be beneficial. It is well known that excessive nitrogen concentrations can create succulent tissue, reduce carbohydrate reserves, resulting from increased shoot growth, reduce rooting and reduce wear tolerance of the turfgrass sward. Thus excessive N applications weaken the turfgrass sward, making it more susceptible to disease and reducing stress tolerance.

Phosphorus is important to turfgrass because it enables energy transfer within the plant, which is required for growth. Phosphorus is of particular importance at the turfgrass establishment stage, since it promotes root development.

Potassium is vitally important for photosynthesis, and also regulates water uptake in the plant system. It is also of great consequence in increasing wear tolerance and plant resistance to environmental stresses.

Water is a major growth-limiting factor of all turfgrasses. Grass plants require adequate water to maintain quality. The question of frequent, light irrigation versus infrequent, deep irrigation is still unanswered, with theories suggesting that infrequent, heavy irrigation, helps to increase root mass and plant stress resistance.

The ability of a turfgrass plant to uptake applied water, is ultimately affected by the length and density of its root system, with extensively rooted grass plants having greater access to a larger rootzone volume. Field capacity type irrigation management, where irrigation is applied before any signs of wilt are visible, is a highly effective method of irrigation. This system reduces problems such as localized dry spot, and salt build-up in the rootzone.

However, there is a fine line between applying enough water to satisfy the plant's needs and over-watering the rootzone. Over-watering leads to a reduction in root growth because the roots are basically sitting in a highly saturated soil on a regular basis. Over watering can also cause leaching of applied fertilisers and pesticides, a reduction in air-filled porosity, an increase in soil organic matter and thatch and a weaker grass sward.

The hardest part of irrigation is balancing the needs of the plant with the amount of water that is lost through drainage and transpiration. Transpiration is the process where water is lost from the grass leaf into the atmosphere as water vapour, through small openings on the leaf surface called stomata. The combination of transpiration with evaporation - which is the loss of water from the soil surface - is known as evapotranspiration.

Soil cultivation has become an integral component of management programmes on almost every type of turfgrass system. Cultivation practices are principally designed to reduce soil compaction and thatch build-up.

The main types of cultivation used include: coring; solid tining; water injection and vertical mowing. Coring, solid tining and water injection, are principally used to improve soil physical properties, such as air filled porosity, bulk density and drainage rate. These practices are often followed by top dressing. By improving the physical properties of the rootzone, turfgrass growth should also be increased. This type of cultivation basically breaks up the rootzone, which makes it easier for the turfgrass root system to penetrate into the underlying soil, helping to create a more expansive root mass, hence increasing the plant's stress tolerance levels.

Vertical mowing can be used to prevent grainy grass swards, to reduce thatch and organic matter accumulation and to reduce compaction. Grainy

refers to horizontal growth of grass leaves and stems, which will negatively impact ball roll. Organic matter increases water-holding capacity of the rootzone, and reduces water infiltration rates, which can lead to a moist playing surface and shallow rooting. This increased shallow rooting may reduce turfgrass wear tolerance, playability and stress tolerance.

Plant growth regulators are used as often as weekly, by many turfgrass managers, and are very important in turfgrass management, particularly under shaded conditions. Shade effects are a problem for nearly every turfgrass manager, be it shade due to buildings or trees. Shade alters the microclimate, including increasing the relative humidity, decreasing air movement and reducing temperature. Shade affects light quality, quantity and duration. Morphological and physiological changes that occur to plants grown under shade include:

- Shoot elongation
- Thinner leaves
- Reduced tiller numbers
- Reduced shoot density
- Reduced respiration and transpiration
- Reduced photosynthetic rate
- Increased chlorophyll content
- More upright growth habit

Plant growth regulators such as paclobutrazol and trinexapac-ethyl reduce cell elongation. Cell elongation is one of the main problems caused by shade. Under shaded conditions, the shorter light wavelengths are blocked and the longer light wavelengths reach the plant. The longer wavelengths cause the long spindly growth, which you as greenkeepers have seen far too often. Thus the plant growth regulators are a means of reducing this long weak grass growth. Plant growth regulators have also been found to increase plant tillering, density and rooting.

Many challenges face the greenkeeper of today. The science of turfgrass is continuously evolving and bringing with it new concepts and technologies that are aimed towards providing the perfect putting green. As a greenkeeper, every single management strategy employed will eventually impact on the turfgrass performance. Understanding the implications of each practice is a step further to achieving that perfect-playing surface.

*Tim Butler is carrying out research in the area of turfgrass nutrition for a doctorate degree at both University College Dublin, Ireland, and Michigan State University, USA.*



An aerator carrying out hollow tining



# Course Feature

## In at the Deep End

Scott MacCallum meets Craig Gilholm, a man who likes to hit the ground running.



It's natural for people starting a new job to ease themselves in. Take some time to get to know your new colleagues; learn where the coffee machine is; who to turn to if the printer is chewing up your work and what to do with yourself at lunchtimes. After a little while, you can then start to display all the reasons why you were chosen for the job in the first place - bright ideas, problem solving, volunteering for tasks etc.

Spare a thought then for Craig Gilholm. Craig started his new Links Manager's job, a year ago and, as you all know, the first year in such a position is very much a learning process. Not only does all the usual "new job" stuff apply, but you've got to learn how your new course reacts to whatever weather and playing conditions are thrown at it at each and every time of the year.

Except that in Craig's case, all through that first year, in the back of his mind has been a date. That date is Thursday, July 20th when the world's best golfers tee it up for the first round of The Open Championship. Craig, you see, is the new Links Manager of The Royal Liverpool Golf Club - better known as Hoylake - having succeeded the late, well loved, and even more respected, Derek Green.

Talking with Craig, however, you would never believe such a huge Championship is just around the corner as he is blessed with a similar phlegmatic character to that of his previous boss, Colin Irvine, at Muirfield.

That laid back approach, coupled with an in-built confidence that he possesses all the skills necessary to handle whatever is thrown at him, are a real blessing for the 33 year-old, who has been brought up immersed in all the finest traditions of links greenkeeping.

"In all honesty until very recently I hadn't even given The Open a thought. It will take care of itself when it comes around," said Craig, as we sat in his room at the rear of the maintenance facility.

"That might seem silly, but this being my first Open in charge I haven't experienced any of the worries which might come along. R&A Chief Executive, Peter Dawson, and Championship Chairman, Martin Kippax, visited recently and asked me what I thought the course was going to be like and I just said 'fine' as I didn't see a problem."

By way of an explanation for such a calm approach Craig points to his 16 years at Muirfield, the last eight as Deputy.

"All I'm trying to do is keep everyone in the club happy and do what I've been taught at Muirfield - present the course the way Muirfield is presented



week in, week out. I know greenkeepers will all say that they present their courses to a high standard within reason, but at Muirfield, where admittedly it was easier because of the limited play, we had to produce a course out of the top drawer every single week.

"So really, I've not thought about The Open and I've certainly not panicked every morning about jobs which need doing. Not yet anyway."

The opportunity for Craig to face his first Open Championship as Links Manager, began when he spotted the advert for the post in the March 2005 issue of Greenkeeper International.

"My thoughts were that I'd have to apply as I was ready for a step up. I did think though, that with The Open coming up a lot of the big guns in greenkeeping would be in for it so I thought I had no chance of the job but that, coming from Muirfield, I expected at least to get an interview. I had Open experience but there are probably 40 or 50 guys in Britain who also have Open experience."

Sure enough the call to interview came with Alistair Beggs, of the STRI, a Hoylake member, on the panel and the man charged with asking the technical questions.

"I felt everything went well, thinking that, as a second in command, I'd done all I could, and left it at that but then they called back and said they wanted me for a second interview. It was getting serious now I thought."

Craig was accompanied by his wife and family on both occasions, to give them a chance to get to know the area but he still felt that he would be the outsider of probably three or four guys.

"But after the second interview they called back and said the job was mine. It took me about two minutes to accept!"

Hoylake had been synonymous with the work of Derek Green, who had been Links Manager for over 20 years and whose ambition had been to bring The Open back to a course which hadn't played host since 1967. It was therefore a sweet occasion when, on the strength of much of the revamping work he had carried out on the course, five years ago the 2006 date





was given to the club, and a bitter one when illness overcame and eventually took him early last year.

"I never met Derek, nor did I know of him, but having seen the job he's done here he must have been a hell of a greenkeeper. I read about the work he had done in a Greenkeeper International article done when The Open was announced and from that and what I've heard about the golf course, there has been a transformation and it is a real credit to him that he got The Open."

That said, Craig will always do things his way, based on the skills and knowledge he picked up from that other magnificent Open venue on the east coast of Scotland.

"I think we all do things differently whether it be the way we turf, or the way we build bunkers. For example, I cut round the tops of fairway bunkers a lot closer and make the landing areas bigger whereas before they were semi rough. I've tried to do other things differently as well including hand cutting the tees for wear purposes although you've got to be prepared to adapt if we're too busy. We're also hand cutting greens, and will be right up until The Open, but that's purely for hydraulic leak purposes. I'd love to go out and triple cut the greens every day at the moment but we have got a lot of work to do so it's not possible," said Craig, who also has a new North Staffs Irrigation system installed over the last five years at his disposal.

One of the practices he has been more than delighted to see that Derek had brought in, was the maintenance hours that are in place on Mondays and Fridays and which give a bit of breathing space on a course which is much busier than his old place of work.

That is one of the principle differences between Muirfield and Hoylake and it has been a steep learning curve for the new Head man.

"Every month so far has been the first full month I've experienced - first May, first full June, first winter etc and I think I've learned more in the 10-11 months I've been here than in the last 10 years at Muirfield," said Craig, who started off as a YTS at Harburn GC, in West Calder, where he was a junior member playing to around 10.

"Things happen here that don't happen at Muirfield. We never got Fusarium at Muirfield - perhaps twice in 16 years - because we had high fescue content greens. We never treated for Red Thread and never used fungicides and I think Colin (Irvine) would still say that. We never used things like worm suppressants and all are used here for presentation purposes," said Craig, who was taken on at Muirfield by Chris Whittle, now Head man at Royal Birkdale.

"I found it really strange that he was calling me for advice for a change."

On the subject of sustainability Craig, comes from the pragmatic school and believes that Derek was of the same opinion.

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# BIGGA's Fantastic Outdoor Range

**B**IGGA currently have a great stock of outdoor clothing at fantastically low prices for all of its members. BIGGA's new range includes jackets, fleeces, trousers and waterproof suits. All products are available in numerous sizes and colours and can be purchased by contacting Rachael Duffy on 01347 833800 at BIGGA HQ.

1. The Highlander Cargo Suit is the whole package. The suit features a coated micro fibre shell and waterproof breathable lining, with two cargo style pockets, plus two pockets on the trousers. The suit comes in M, L, XL & XXL. £55



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2. The Tour Suit, which comes in either a Weatherbeater or Full Zipper style (pictured), has a waterproof outer fabric, which is fully lined. The Weatherbeater jacket is a short zipped pullover style with two pockets and has an adjustable draw cord waist. It also contains zip off half sleeves. The trousers come with a three pocket styling. The Full Zipper version comes with a full length covered zipper on the jacket and the trousers have velcro adjustable bottoms. Jacket size ranges from S - XXL and the trousers come in 27", 29", 31" & 33". The suits come in a choice of colours. £130

3. This does exactly what it says on the tin. The Four Seasons Breaker is just that, perfect to wear all year round. This item is a multi option pullover style top with a short zip and elasticated draw cord. This breaker zips off in two places to create three different garments, full sleeve, 1/2 sleeve or a sleeveless top. Available in a multitude of colours and sizes. £26



4. When it blows, it really does blow and the Windbreaker ensures that you don't feel any of the resulting chill. This stylish top features a soft Teflon coated microfibre outer coat and is a pullover style, with high v-neck and two side pockets. It comes in navy, black or charcoal. Sizes S - XXL. £25



5&6. This top, which is Teflon coated and contains a soft waterproof breathable lining system, comes in two different styles. The Sport Weatherbeater (5) has an adjustable draw cord and is a short zipped pullover style. The Sports Jacket (6) is a blouson style with a full covered zip. Both come in a variety of colours and sizes are available from S - XXL. £42

7. The Reversible Waistcoat has two pockets both sides, is fully reversible and has an adjustable elasticised draw cord. Teflon coated, this top comes in black and grey or navy and stone (as pictured), with sizes ranging from M - XXL. £22.50

8 The Gear Crew Neck Fleece is ideal for work and play, is fashionable and practical. Available in S, M and L. Colours red, navy and grey. £22

9. If you truly want to be protected from all the elements then look no further than the Outerwear Jacket. This strong jacket is a acrylic coated waterproof, has a full zip with storm flap, and concealed hood. £40



10. These smart, yet tough, polo shirts are made with a fabric that actively pulls moisture away from the skin by rapid evaporation. The Dry Gear shirt is just £16 and is available in white, with either blue, green or red collar trim. The Nailshead polo shirt is moderately priced at £19.50.



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