



commitment to enlightening golf clubs to Best Practice, the sustainability of golf and the three strands to it - economic, environmental and playing quality.

"Economically we don't yet have the comparative data on the cost of running a Poa/bent sward, a creeping bent sward or a fescue sward but we are gathering information all the time and working on being able to present a range of costs for running these different swards. Hopefully we will end up with a cost per green and a cost per fairway. The added benefits of courses being able to stay open longer in the year can also be built into the final figures.

"I think that's a year or two away but we will put the comparative figures on our website so that clubs can make up their own minds."

The environmental argument is easier to sell.

"Less water, less nitrogen, less pesticide and in some cases zero pesticide and, yes, that does mean zero fungicide! That's all good news and helps golf with its image outside of the game itself," said Nick.

The playing quality criteria is possibly the most difficult in which to bring some objectivity but the R&A is working to remedy that.

"It's all very well saying 'firm, fast and true' but the only objective tool we currently have is the dreaded stimpmeter and it is more misused with

every month that goes by. Ok it does measure speed but it must be used in conjunction with other measures. Over the last year, however, the R&A Equipment Standards Committee and its resident physicist, Steve Otto, and Steve Isaac, in conjunction with the USGA have done a lot of work in developing a firmness meter."

This was tested at this year's Open Championship and if used in conjunction with a moisture meter will provide another objective measure of how greens are improving.

The third tool on which the boffins are working is a trueness meter.

"We want to be able to give the greenkeeper a suite of tools which if used regularly will give him objective measurements that his greens are improving and thus a defence to golfers who think the opposite," explained Nick, adding that the STRI is also working on DNA analysis of grass clippings which will give clubs a print out telling exactly the composition of the greens - e.g. 70% fescue/30% Poa, etc.

Nick believes that many of the problems can be traced back to the early '60s with Arnold Palmer's arrival in Britain to play in The Open, coupled with the advent of colour television and the televising of the Masters for the first time.

"Palmer's appearance was a wonderful boost - golf really took off, memberships doubled and money poured into the clubs. What did they spend it on? Making their courses look like Augusta by throwing on water and nitrogen."

But he feels there is currently a more serious threat to golf courses than over-fertilising and over-watering.

"Anyone who thinks that greens which are cut to 12 on the stimpmeter are not going to die the next week is out of order. I think the cult of low cutting could be more serious than any of the other crimes that have been perpetrated in the past because chemicals are the only things keeping those greens alive. That and the fact that weather conditions have been in our favour for the last few years. When we have a bad winter the devastation will be huge."

But he doesn't believe change will be as painful, and as dangerous to the country's greenkeepers in employment terms, as it once might have been.

"What used to be known as 'Arthritic' - the painful five year change over process - isn't as much a factor nowadays as reconstruction and reestablishment techniques are getting so much better. Hans Beurling, a Swedish greenkeeper working in Denmark, has pioneered a process of stripping off thatch and Poa and going straight in and sowing fescue. Greens



# Amino-Sorb®

**10**  
years  
in USA

**7**  
years  
in UK

## THE LEADING AMINO ACID FOR STRESS RELIEF

WE LOOK  
FOR  
DISTRIBUTORS  
**IN UK**  
WILL BE AT BTME  
HARROGATE  
STAND Q13

Backed by University Research

- ✓ Penn State University
- ✓ Virginia Tech University
- ✓ University of Maryland
- ✓ Michigan State University
- ✓ STRI

**Stressed Perennial Ryegrass**



Untreated



Amino-Sorb®

- ▶ **Unique method of manufacturing by Enzymatic Hydrolysis**
- ▶ **Worldwide specialist in Plant Stress Management**



**BIOIBERICA**

*Plant Stress Management*



**BIOIBERICA**  
PLANT PHYSIOLOGY

**Commercial Office**

Plaza Francesc Macià, 7 · 08029 Barcelona - Spain

Tel.: (34) 93 490 49 08 · Fax: (34) 93 490 97 11

<http://www.bioiberica.com> · e-mail: [info@bioiberica.com](mailto:info@bioiberica.com)



Please contact Mr. Ignasi Pons at  
[ipons@bioiberica.com](mailto:ipons@bioiberica.com)



have been brought back into play in about nine months. He has 27 holes so was able to do this on one nine and it is not something which could be done on every site - but it shows what is possible."

Although desperate to see change Nick does advocate caution however.

"We don't want anyone jumping off a cliff, as I call it, and going down the fescue route until or unless they have got all their ducks in a row. By that I mean have the objective, measurable arguments in place - and the backing of their club."

The pace of any change will, he believes, be driven by external influences by which he means EU legislation.

"If we get a fungicide ban as they did in Holland and have in Denmark and Sweden you've got to change. By the same token, when the UK is hit by the Water Framework Directive, water supplies will be increasingly and rigorously controlled - you've then got to change if you can no longer run a Poa sward. The sensible clubs will be the ones who say that they don't want to wait until they are overtaken by external events but who start taking steps earlier."

Nick has high hopes for the Harrogate Week seminar and is looking for a constructive debate on the fescue programme and is keen to see who will be in attendance.

"There is a certain amount of information to share with the delegates and we also want to discuss what's been happening, how it's happening and the impact it might have on the future in the UK and elsewhere," said Nick.

"British greenkeepers are very interested and very committed and we owe them a better way forward. The R&A Golf Course Committee intends to play its part in that."



## Sustaining the Future

Steve Isaac discusses the first steps of working towards the sustainable golf course.

Now, and in years to come, golf course management for the majority will necessitate the use of less water, less fertiliser and less pesticide. It will also have to see golfers being offered more for their money as the competition to attract green fees and members becomes increasingly severe.

For northern Europe, there are feasible options that can meet all of the demands the future holds in store. These already exist and are being put into practice by enlightened course managers, who realise the days of big budgets and the consumables safety net have gone.

The work of greenkeepers in Denmark has been very much in the news over the last 18 months and they look to be leading the way when it comes to sustainable course management, defined by The R&A Golf Course Committee as: "Optimising the playing quality of the golf course in harmony with the conservation of its natural environment under economically sound and socially responsible management"

We believe there are plenty of UK greenkeepers who follow the same principles based on minimising inputs and creating an environment to favour less demanding grasses.

The R&A, in partnership with BIGGA, are hosting a conference at Harrogate Week 2006 on the sustainable golf course. The concept and how it can be implemented will be the focus, but the problems faced by Course Managers who want to do the right thing but are pressurised by the demands of golfers and the golf business cannot be ignored. We may be able to satisfy their demands for colour at the moment but this is not sustainable through intensive programmes based on fertiliser, water and fungicide.

There is a need to promote sustainability to those sectors of the golf industry that currently have significant control over greenkeeping practices, yet little understanding of the consequences of the policies they force on greenkeepers. No greenkeeper should be expected to put his reputation, and often his job, on the line unless his club is fully supportive of the course management policies being implemented.

The R&A are developing tools, data sets and case histories to reinforce our stance in respect of inputs, finances and playing quality and these will be presented during the conference.

Hopefully, the conference will attract a large audience of greenkeepers and club officials who want to implement sustainable policies or who wish to develop their current programme based on this theme. It is possible to reduce inputs while retaining playing quality. Discuss how this can be achieved with course managers who have actually done it!

The shortage of water in southern England and much of southern Europe this year may be a climatic blip rather than a trend. The process of active ingredient removal as a result of EU review of pesticides, which has already claimed 50% of available chemicals since 1991, may not impact on your ability to control disease. The requirement for improved water quality by 2015 under the EU Water Framework Directive may not affect your use of potential water pollutants such as fertiliser and pesticide. Or you could live in the real world.

Take the initiative, join those who are dealing with these issues now. Sign up for the conference, take part in the debate and together we can influence the future direction of course management.

Visit and register to The R&A course management best practice website, [www.bestcourseforgolf.org](http://www.bestcourseforgolf.org).

Steve Isaac is Assistant Director - Golf Course Management, The R&A.



# A New Perspective

Graeme Francis investigates the changing attitudes toward irrigation.

For many years new irrigation product development has concentrated on providing precise and accurate watering. The major manufacturers have worked on control systems developed with the emphasis on irrigation linked to turf water requirements. The development of communication between controllers and pump stations to allow accurate pump operation based on demand is another major area of attention with the aim of reducing power costs and to allow actual water use monitoring.

A survey of the US irrigation industry indicated that 82% of respondents believe 'smart' controllers that apply water based on actual or historic climate data will out number those based on time within 5 to 10 years. This trend is also being seen in the UK. Other peripheral technology such as weather stations measuring ET and other environmental data that download this information to control systems are growing in popularity.

We now have sprinklers with variable arc, trajectory, radius and pressure features all designed to place water uniformly and in the right place while making adjustment and servicing as simple as possible.

Much has been written about irrigation technological advancement, but how much of this technology, particularly the more sophisticated control systems and pump stations are actually being installed? Is our understanding of why we need these products and how to use them good enough? Too many golf courses are still being provided with irrigation systems that don't even use technological innovation, such as individual head control, that has been available for over 20 years let alone the state-of-the art products being introduced at present.

Why is this happening? Is it because irrigation is considered unimportant and therefore it suffers when clubs consider capital expenditure projects? Is it because technological innovation is not being promoted? Is it because clubs are not given advice on the benefits that these irrigation products can bring? Does precise irrigation practice based around water conservation matter?

Clearly the point is, in some cases, being missed, but it does matter and matters now. If the assumption that golf cannot survive without water is correct, then be prepared for sustainable water availability becoming the most single important aspect of golf course maintenance.

## GOLF AS A WATER USER

In a recent report from an international forum, the United States was reported as the most wasteful water user in the world. Golf was mentioned as a key reason for this wastefulness. The golf industry is considered in some quarters as a highly inefficient user of water. Some environmental organisations list statistics comparing global golf course irrigation water use with global water available for drinking.

While it is true that the US model does not entirely compare with the situation here, we do see examples of similar criticism in the UK. Whether such criticism is justified or not, the golf course industry has to be aware that it is perceived a wasteful water user.

## WATER RELATED LEGISLATION

A more direct reason, than this public perception, why we need to review water use for golf is legislation. The Groundwater Directive 80/68/EEC and Groundwater Regulations 1998, the Water Framework Directive 2000/60/EC and the Water Act 2003, The Water Environment and Water Services (Scotland) and the Water Environment (Water Framework Directive) Regulations (Northern Ireland) 2003 are the most important examples of current water related European initiated legislation that has a direct impact on all golf courses in the UK.

It is expected that water legislation will become more restrictive in years to come and that water availability will be on a prioritised basis with the drinking water supply as the highest and leisure as the lowest. The UK population continues to grow and hot spots of population growth such as London will put increasing demand on our water supplies. Obtaining water for golf from the drinking supply will become restricted, expensive and ultimately could be prevented.

## WATER MANAGEMENT PROGRAMMES

It is certain that to sustain golf, clubs will need to prepare and implement a course water management programme. Some course managers already have such plans, but every club needs to create its own programme.

Implementing such a programme provides an opportunity for us to demonstrate that water conservation is a crucial and essential part of golf course management and that the industry is making attempts to use water as efficiently as possible.

The development and implementation of a course water management programme with full investigation of areas alternative sources of water, treatment of borehole water previously unsuitable for irrigation, the use of grey water, treatment and recycling of wash down water and the provision of water efficient irrigation systems is not only good management, but is a tangible example of how golf is dealing with the water issue.

## IRRIGATION SYSTEM EFFICIENCY

How do we measure irrigation system efficiency? It is likely that few course managers could put an accurate figure on the efficiency of their system. Carrying out a system audit allows this to be established and is a key part of any water management programme. The audit will produce calculated figures for operational factors such as uniformity of coverage and define water requirement.

This information then provides the basis upon which the need for system modification, adjustment or replacement can be assessed and allows the development of schedules to improve efficient water use. Golf course irrigation audits are still extremely unusual in the UK, but they should become part of a club's water management plan.



### ALTERNATIVE SOURCES OF IRRIGATION WATER

Courses with fairway irrigation still represent a small proportion of total number in the country. The number has grown at an accelerated rate over the last 15 years with many clubs and operators recognising that the ability to water fairways has a serious commercial benefit. Availability of adequate quantities of water for this, however, is becoming increasingly difficult.

It has long been known that alternatives to potable water for irrigation have to be sought. It will become prohibitively expensive and probably unavailable.

The normal alternative to potable water has been to obtain a licence and sink a borehole or take water from a watercourse during the winter for use during the summer. However, in parts of England the Environment Agency will no longer issue abstraction licences for water to be used to irrigate fairways regardless of the abstraction or storage method. It should not be assumed that boreholes or winter abstraction will provide irrigation water in the future.

Other sources of water are becoming more prevalent. There are a number of cases in the UK where the effluent water from an onsite facility, such as a hotel, is now being used. Treatment plants and water storage systems have been put in place to make this water available for the course. These courses have facilities to generate sufficient effluent, but the grey water option should not be dismissed if you do not have a hotel on site.

One golf club has worked with the Environment Agency and installed a system to treat effluent water from the clubhouse. In return, the Environment Agency will grant a licence for the balance of the water required for irrigation. The provision of a relatively small treatment plant of this type has major financial and environmental benefits. The willingness of the club to invest in an alternative water source has created a sensible and viable way in which to work with the Environment Agency to provide a solution to the problem.

The installation of effluent water treatment plants at golf courses to provide irrigation water should now be seriously considered as a practical and real part of golf club management.

In certain parts of the country the borehole water available to a course may be unsuitable due to its pH or high soluble iron content. Once again, clubs are beginning to invest in equipment to bring this water up to an appropriate quality. Progressive course managers are taking a wider view of water sourcing and recognise that the capital investment in modifying available water will reap huge future benefits.

### WATER RECYCLING

Water farming, where surface water is collected and stored from irrigation use has been used here for many years and is still a consideration. But the most widely seen example of water recycling, while using smaller quantities, has been the installation of biological wash down water treatment and recycling systems that are proliferating. For some years, clubs have been installing these systems to ensure compliance with The Groundwater Regulations that make it illegal to wash substances such as diesel, oil and chemicals into the ground and surface water systems.

The fact that these systems recycle water and reduce wash down water consumption by as much as 90% will grow in significance, as the use of drinking water for wash down operations will become unacceptable and prohibitive expensive.

### SUMMARY

Very little of the subject matter covered in this article is new. In every case, the methods outlined here for obtaining and conserving water have been utilised to some extent in the UK. Much of this has been driven by necessity or because large quantities of water are needed, but every club needs to take a look at its position. An 18 hole course using 5400m<sup>3</sup>/1.2 million gallons of water annually to water greens and tees will find that assessing the benefit in reducing its dependency on potable water is a very worthwhile exercise, because one day the tap may simply stop running.

The time has come for much greater emphasis on water on the golf course. The use of innovative irrigation products within a well designed, well installed and well maintained system is an important part of water management, but unless they are utilised and water is available the best products are worthless.

We have to appreciate that the issues relating to water availability for golf course irrigation will become increasingly acute. Plans and policies within a course water management programme need to be put in place now so that water will be available for golf course irrigation in the future.

*Graeme Francis, at Hydroscape, can be contacted on 01425 476261.*



# The JA Legacy

Tim Lodge examines the Jim Arthur philosophy to see if it is really possible to achieve in modern golf.

With the loss of Jim Arthur goes the foremost evangelist for greenkeeping traditionalism. Jim espoused his ideas so passionately and for so many years that the whole process could be, indeed is, referred to by his name; the Jim Arthur approach to golf green maintenance. There is probably not a golf course in the UK on which he has not been mentioned and where 'his' debate has not taken place.

A great man for sure but I believe there is now a need to progress and develop his philosophy of sward management. The truth is that, although technically sound, his ideas are poorly adapted to the realities of course maintenance in the harsh commercial environment in which most clubs now operate. Also, the manner in which his ideas are pursued within some clubs seems to cause at best heated debate and at worst serious distress and anxiety, particularly among greenkeepers.

There really is no need for all this. What is required is a wider understanding of what processes are actually taking place and a clear indication of whereabouts a particular golf course lies within this range of processes. All golf courses are different and no single approach is suitable for them all.

The JA approach revolves around the minimal use of fertiliser to promote the growth of fescues and bents and to limit the growth of annual meadow grass. This brings improved playing quality and the major advantage of not being susceptible to the problems associated with annual meadow grass; excessive thatch, anthracnose, fusarium, discolouration, irregular growth patterns and so on.

In essence, what is being created is the natural environment of our two favourite grasses (although they have been cross-bred to an extent that some of their natural characteristics have been lost). So, red fescue is '...abundant in short grassland, on dunes, moors and mountain slopes...' and brown top bent is '...widely distributed on heaths and moors' (CE Hubbard, 1984). These are very barren environments. The only fertiliser source is likely to be rainwater (which contains a tiny amount of nitrogen) and the occasional droppings of rabbits or sheep.

They are also very dry environments. Although rainfall may be high in mountain regions, the fescues in particular survive on very sandy soil through which water flows rapidly and which is able to retain comparatively little moisture. These are of course the characteristics of sand dunes or links environments. The JA philosophy also stipulates the minimal use of water.

But when we consider UK golf courses in general we have a number of points of departure here. Firstly, most use fertiliser on their greens, some quite a lot of it.

Secondly, most courses have an automatic irrigation system even though fescues and bents are almost certainly able to survive with only a fraction of the output of which such systems are capable. Thirdly, most golf courses do not have especially free draining greens. At least 40 % of them are established on clay soils and almost all of them do not have a form of green construction that allows drainage

***"A great man for sure but I believe there is now a need to progress and develop his philosophy of sward management"***

(infiltration) rates even remotely similar to that of a typical close-cropped turf on, say, a sand dune.

This would appear to narrow the number of courses on which the JA philosophy might

successfully be applied to a very few. These would be the great links and heathland courses, which are the first to be cited by the JA evangelists.

As an agronomist I have made it my business to visit all forms of golf course. On site I frequently hear the opinion that while the JA approach is theoretically sound the philosophy is impracticable on that particular course. With a sward that may be dominated by annual meadow grass the commercial imperative is to maintain a suitable playing surface come what may. Let's face it, most golfers don't care what species of grass they are playing on.



***"I frequently hear the opinion that while the JA approach is theoretically sound the philosophy is impracticable"***

So, many clubs are content to spend on fertiliser and water, and to pay the subsequent costs associated with disease and thatch control. Most people will appreciate that this is hardly a 'sustainable' or environmentally sound approach but at this particular moment in time it may well be the most economical. Membership is up and the golfers are happy. The idea of 'if it ain't broke, don't fix it' prevails very widely.

Also, in the larger scheme of things, the environmental damage purportedly done by the golf course through its use of fertiliser and water, and possibly even pesticides given the restrictions on their use now in place, is probably far less than that done by the golfers who drive their



cars, and sometimes even fly, to the club in order to play. For a commercial golf course especially, taking a strong environmental position on greens maintenance could put you out of business. Who would be prepared to jump first?

Faced with these arguments, I find it very difficult to be evangelical about the JA approach. What I would advocate is a maintenance regime that involves the use of fertiliser and water appropriate for the condition of the greens at the time and given the restraint that golf must continue to be played on satisfactory surfaces throughout as much of the year as possible. In practice this usually means achieving a gradual reduction in fertiliser use alongside a suitable and intensive programme of aeration, top dressing and a carefully considered irrigation, scarification and mowing regime. Quite simple really!

Altering the maintenance of greens will bring about changes. The speed of transition towards a more JA type of surface is related to the degree to which you are prepared to impose the necessary regime. So an abrupt reduction of fertiliser and water use to the sort of rates applied to a links course, carried out on an annual meadow grass dominated parkland green, coupled with plenty of overseeding, will bring about a massive alteration in sward composition within a year or so. It could also reduce membership to zero and result in the sacking of the entire greens staff.

A more subtle approach is therefore essential. Indeed, the whole package of operations needs to be assembled very carefully after taking a good look at the existing conditions.

In addition, it is necessary to assess the general zeitgeist of the club's attitude to these things. For example, the membership of many clubs is made up of more elderly individuals who are not prepared to sit at home while a lengthy and potentially damaging process is taking place on their golf course. Even though the end result will be a marked improvement, these people consider, quite fairly, that they may not be around to enjoy it so they would rather play golf on reasonable surfaces now, thank you very much.

One golf course is never the same as the next and it is with regard to these, rather complex, things that the experienced eye of an independent agronomist can be most advantageous. In practical terms, the end result of all of our work is the achievement of deeply rooted, healthy grasses that provide good playing surfaces.

Very often, it is the annual meadow grass that makes the most of these circumstances but it is also possible to shift the sward composition gradually towards a greater content of 'the finer grasses' that brings all the advantages of that condition. The main thing is not to get too tied up in knots about the actual species that you are working with. Chill out, people, chill out!

*Agrostis is founded by Dr Tim Lodge and is an independent sports turf consultancy. Dr Lodge is a registered expert witness in the area of sports turf, a founder member of RIPTA and a member of the BASIS Professional Register. Further information is available at [www.agrostis.co.uk](http://www.agrostis.co.uk) or on 01359 259361.*



EAGLE

SCORECARDS · SIGNAGE · COURSE GUIDES · BAG TAGS · GREEN FEE TICKETS · MEASUREMENT

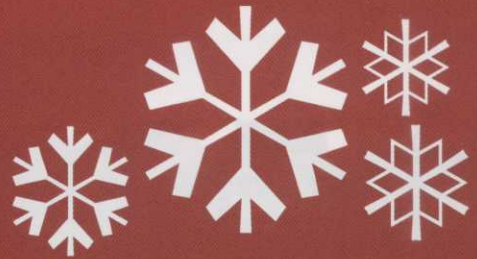
Tel: 01883 344244

Email: [info@eagle.uk.com](mailto:info@eagle.uk.com)

Website: [www.eagle.uk.com](http://www.eagle.uk.com)



# In the Shed



Greenkeeper International's puzzle page has a festive theme this month to keep you entertained during the cold snap.

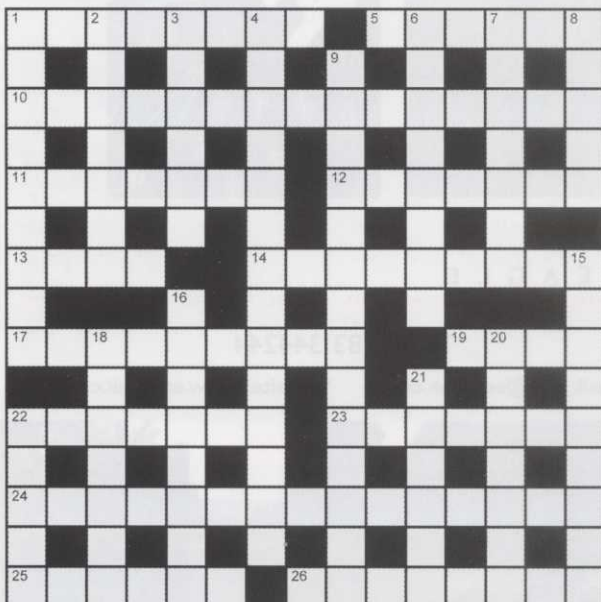
## CROSSWORD - Compiled by Anax

### ACROSS

- 1 No 1 hit for The Supremes in 1964 (4,4)
- 5 Having a pH of less than 7 (6)
- 10 Australian folksong whose title refers to the swaying motion of a backpack (8,7)
- 11 Viscera, entrails (7)
- 12 In German folklore, the siren who lured boatmen to destruction (7)
- 13 Bartholomeu ---, Portuguese explorer who navigated the Cape of Good Hope in 1488 (4)
- 14 Cricketer who became Pakistan captain in 1982 (5,4)
- 17 Type of merry-go-round which turns on a tapered steel point (9)
- 19 Egyptian goddess of fertility (4)
- 22 In isolation, not referring to related evidence (2,5)
- 23 Israel's largest city (3,4)
- 24 Scottish waterway linking the North Sea and the Atlantic Ocean (10,5)
- 25 Snow vehicle mounted on runners, usually pulled by horses (6)
- 26 Con trick used to cheat people of money (4,4)

### DOWN

- 1 Building feature also called an oriel (3,6)
- 2 American singer, --- Carlisle (7)
- 3 Reptile similar to but smaller than a crocodile (6)
- 4 Place on horizon where parallel lines meet (9,5)
- 6 Provision of food (8)
- 7 Samson's betrayer; name applied to any femme fatale (7)
- 8 Omnivorous mammal native to Central and Southern America (5)
- 9 Expression of smug self-satisfaction (2,3,5,4)
- 15 Tennessee's state capital (9)
- 16 Political column of the Mail on Sunday (5,3)
- 18 Necessitate, require (7)
- 20 Tropical or subtropical flat grassland (7)
- 21 Small glass bottle, usually for perfume (6)
- 22 Bone of the ear also called the anvil (5)



## ANAGRAM

As it's Christmas, can you work out these two festive songs?

### ENGLISH TINT

### CLAMS THIS STAR

## QUICK 'NINE HOLE' QUIZ

1. Which golfer, a LPGA or PGA tour member, became the first to win the same tournament five times in a row?
2. What proportion of Britons spend Christmas abroad?
3. Which national football team, who have qualified for the 2006 World Cup, are known as 'the Hawks'?
4. Which celebrity chef is setting up a cannabis treatment course for workers at his restaurant?
5. Shirley Webb has been selected for Scotland's Commonwealth Games team in which event?
6. Which national newspaper editor found herself making the news after a "silly row" with her Eastend husband led to her arrest?
7. Which Guinness Premiership team does Mark Van Gisbergen play for?
8. Which pop star has been awarded an Honorary Doctorate by the University of Gloucester?
9. Who did Chicago White Sox beat in the World Series?

## SUDOKU

Fill in the grid so that every row, every column and every 3x3 box contains the numbers 1 to 9.

		8	1	7				
3			8	4				1
	6			9		8		
	9		5					
7		4					2	3
						6		9
			2	5				3
	8			7	1			6
			6	2	4			

Supplied by [www.dailysudoku.com](http://www.dailysudoku.com)

## SPOT THE DIFFERENCE

Look closely at the pictures below and try and spot the difference between them. You should be able to spot six!



ANSWERS TO ALL THE PUZZLES ARE SHOWN ON PAGE 59



# The Grass is Whiter on the Other Side

Chris Dyke dons his wellies and takes a look at Riederalp Golf Club in Switzerland.

Most greenkeepers I meet have a mixed attitude to snow. On the one hand it is one of the few things that brings mowing to a halt. On the other, snow lying for some time brings its own crop of diseases and can knock a hole in the club's finances. So this winter give a few moments thought to the greenkeeping team at Riederalp in Switzerland.

Riederalp lies at 8,000 feet on the south facing side of the Alps, not far from the world renowned ski centre of Zermatt. From sometime in early November their course will disappear under snow not to be seen again until next May. This is not a sprinkling. At its worst we are talking about three metres of snow. The top is used for six months by skiers and snowploughs going to and from the ski runs.

Riederalp is a pointer to the boom in golf in Switzerland, which has seen the number of courses treble in recent years. This expansion is riding on increased numbers of summer visitors wanting to pursue their golfing hobby while in the Alps. It also offers an extra source of income to skiing resorts in the relatively lean summer months.

The nine hole course lies in a shallow basin in the middle of the village with an amazing view of the mountains across the valley. Created out of former grazing land the course includes several converted Swiss style farmhouses and a nuclear bunker for storing equipment and stores. The idea of a course was put forward in the early 1990s by a local hotelier who enjoyed playing golf.

Along with several others, he bought up the by then redundant farmland and began the transformation. As usual there was some early resistance but now most residents see the course as having saved the centre of the village from hotel developments.

"The best situation is when the snow falls in early November and stays there until the spring. The snow blanket protects the greens in the winter. The real problems come in the spring. It is best if the snow melts in one rush and stays away. We then start a programme of oversowing the greens and feeding to get a quick recovery," explained Willy Kummer, Head Greenkeeper, regarding his approach to coping with the snow.

"This is a very sunny position so growth can be very quick, especially with the ground quite wet and good rainfall. The problem is the spring weather can be very unreliable. We can have good initial germination and then two nights of minus 20 deg C and we lose everything. In a bad year this can be repeated several times."

Contrary to what I expected, there is no policy of treating the greens with fungicide before the winter. Willy has seen no appreciable difference when he tried this in earlier years. It is really a case of intensive renovation, fresh seed and luck.

I was surprised at this quick recovery since a few years earlier I visited a museum several hundred feet above the village and was shown how slow grass and trees grow in this area. The tracks of a small bulldozer used in a building job were still visible after three years, painfully slow growth by the grass trying to cover the bare areas.

There are also hundred years old pine trees barely two metres tall. The reason the greens recover so well is the exceptional sunshine and good rainfall in the village itself, which in summer is more like Italy. Having said that this region can get snow in any month of the year, which brings a different meaning to sweeping the greens.



The equipment and resources used by the club are the same as anywhere else in Europe. Golf is fairly new to Switzerland so there are very few home grown manufacturers of equipment and supplies. For example it is only in recent years that seed has been available from local suppliers. The next oddity is that the village and the course are in a vehicle free area. There are no cars and no usable road to the valley below.

All supplies, including equipment and even bunker sand, are brought up slung under the cable car. Imagine how long it took to stock the bunkers with 25kgs sacks and a maximum load of one ton at a time. At least the cable car station is only a few yards from the clubhouse and depot.

"Transport adds 40% to the cost of all our materials, which only travel two miles on the lift," said Willy.

For training and expertise the club had to look to Germany in its early days. The staff were trained in Northern Germany with the first national training course only recently started. Not surprisingly Willy and his team like to travel to pick up ideas. This year they were in Ireland for a few days. The course has five greenkeepers working full time in the playing season.

That brings us to the final difference to UK courses. There is a limit to the amount of machinery maintenance and equipment polishing you can do in the winter. Especially if the course's shut down period lasts five months. Come December Willy and his team switch hats. Willy manages the local ski school and most of his staff are either skiing instructors or lift attendants.

Talking to Willy I could appreciate what this means when we talked about holidays. In the summer the course is going flat out. In the winter the skiing takes up all your time. As a result the staff usually look to take their holidays in November or at the end of the ski season. That is assuming the snow melts on schedule and not a month early!

Recent changes to employment rules in Switzerland mean British greenkeeping staff can now work in Switzerland without too much hassle. So if you are tired of our grey skies, here is a country crying out for experienced staff. Just don't forget to find something else to do in the winter!

# NEW PRODUCTS

## THREE IS THE MAGIC NUMBER

The expanded range of Kioti compact tractor, which now includes 10 models from 21hp to 90hp, will be featured by the UK distributor Rustons Engineering at BTME 2006.

The three latest models to join the line-up have 55hp, 75hp and 90hp engines with selectable two/four wheel drive and mechanical transmission through 12-speed gearboxes with synchromesh forward/reverse shuttle. The 75hp and 90hp models have four-cylinder Perkins engines.

Among the standard features are twin double-acting spool valves, a two-speed rear PTO, tandem hydraulic pumps, power steering and high-capacity hydraulic lifts with draft and position control. A high-specification flat-deck safety cab includes an adjustable steering console, air conditioning, integral sound system and cool box.

For technical information Tel: 01480 455151; Web: [www.reco.co.uk](http://www.reco.co.uk).



## TWIN BLADE

Bomford has introduced a new range of rotary toppers, the Twin Blade, which is available in three different widths and two formats - inline or offset. Twin Blade is available as an inline topper with working widths of 1.8 metres, 2.4 metres and 2.7 metres, while the offset version is only available with a working width of 2.4 metres.

As its name suggests, the Twin Blade features two interlocking rotary arms, each fitted with a pair of heavy-duty free-swinging blades for an even cut. The inline versions feature a floating headstock to ensure an even cut on undulating ground, and on all models each of the rotary arms counter-rotates to leave an even spread of cut material.

For information Tel: 01789 773383; Web: [www.bomford-turner.com](http://www.bomford-turner.com).

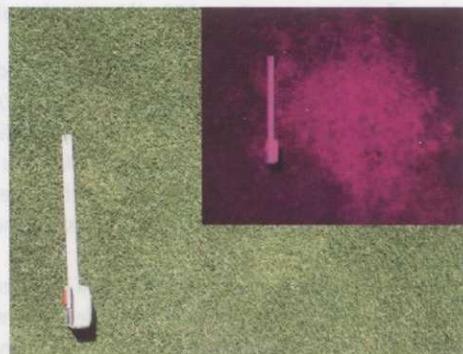


## STRESS DETECTION GLASSES

Bomar Technologies has announced a breakthrough in turf stress detection with new special lens filter technology for early detection of disease, water or pest related problems.

Technology developed by NASA scientists and Dr. Robert Brock, now lets greenkeepers spot stressed turf close up or at a distance, with plenty of time to react to correct unhealthy conditions. These lenses block out green colour range, any off colour will stand out against the black background as glowing red, coral, pink, or other hue allowing turf to be quickly identified.

For technical information Web: [www.bomartechologies.com](http://www.bomartechologies.com).



## PBS 150

PBS150 represents new technology for long-term surfactants used for turfgrass and is available through Tower Chemicals. Unlike older surfactant chemistries that are applied at higher rates to achieve longer lasting performance, PBS150 uses a new surfactant molecular construction to address the source of performance loss – biodegradation of the surfactant molecule by soil microbes.

The PBS150 Polyfunctional Branched Surfactant Technology brings a new dimension to long-term surfactant performance. PBS150 is surfactant specifically designed to compensate for rapid natural molecular breakdown by microbes in the soil profile.

For technical information Tel: 0113 256 8111;

Web: [www.towerchemicals.com](http://www.towerchemicals.com).

## BOOSTING RANGE

The Makita line trimmer and brushcutter range has been increased with the introduction of three new 2-stroke models and two further 4-stroke brushcutters.

The new straight shaft RST210 and RBC2110 line trimmers both feature a low-emissions 21cc petrol engine that delivers 0.83hp and with electronic ignition is rated at 620watts. Both trimmers come with 2-line head, protection hood and tool kit and the RBC2110 model is delivered complete with a working harness to support the machine in operation.

The RBC2510 is a powerful 24.5cc machine with 1.3hp. This rugged 980watt trimmer has three optional auxiliary attachments that make it a very versatile machine around the grounds. A polesaw attachment gives lopping power and coupled with the 170cm shaft length provides ample reach and is capable of pruning 4inch diameter timber.

For technical information Tel: 01908 211678; Web: [www.makita.com](http://www.makita.com).

