

Sand and Dressing

Roland Taylor sets about investigating the requirements for bunker sand and top dressing and comes up with some interesting results

BUNKER SAND

The modern greenkeeper has to thank, barren windswept terrain and animals for the development of the bunker. In the dim distant past the first courses were links courses, ones which were often situated in fairly hostile locations.

Sheep, cattle and rabbits devoured the grass cover leaving tracts of exposed sand and then through erosion, pits were formed that became traps for the wayward shot.

This added interest to the game and led to bunkers being introduced as part of inland courses. One factor at the time, which could well have not been taken into account, was the sand that went into these bunkers - sand will not do.

The grain size defines sand and there are various theories and figures of between 0,2mm and 1.6mm are suggested. It can be composed of various minerals but quartz makes up most of the world's sand. It is evolved by the action of water and ice on rock and is resistant to being broken down by mechanical and chemical means.

As far as bunkers are concerned there are a number of factors that make high quality sand.

These include:

- Particle size and shape
- Free draining ability
- Standard of playing surface (Penterometre)
- Low lime content
- Colour

Out of these, 'the standard of the playing surface' is the most important. If a ball lands on it how far does it sink into the surface (fried egg test)? The shape of the particles plays a major part in this aspect. Angular shaped particles compact close together so are more resistant to a ball penetrating them.

However, a playing surface must not be so hard that the ball bounces off it. Rounded sand is softer and a ball is likely to be buried in it. These types of particles tend to move more freely, so the playing surface and bunker face can become unstable.

Good drainage is also important. Soaking wet sand is going to cause all kinds of problems. Likewise, if it becomes contaminated with a run-off of soil after an exceptionally heavy down pour. In both instances the playability will be affected.

In the case of the soil contamination, replacement is the only answer, but this is unlikely to be practical, so it is then a case of leaving it until an appropriate time and taking any flak from players.

The STRI have laid down specifications for bunker sand and a good supplier will regular test their products to ensure they meet these parameters.

At present trials are being carried out by STRI in conjunction with WRAP (Waste Resources Action Programme) to determine the viability of using sand derived from recycled glass as an alternative for bunkers.



▲ Fairway one month after treatment, July 2003

Bunkers are the bane of many golfers lives and likewise they may be a headache for some greenkeepers because they need a lot of attention. Finding the right quality sand and having the equipment to dress and maintain it, is a major part in winning the battle.

COMPOST TOP DRESSING

It had to come to an end - applying tons of artificial chemicals into the soil in the form of fertilisers, pesticides and weed killers.

The indications are that legislators recognise the folly and each year are implementing more stringent controls on what can and cannot be used. Increasingly man is beginning to realise that he will have to turn to natural solutions for the answers.

No golf course is the same and during the boom period when they were springing up across the country, like mushrooms, many were built on farmland with very little consideration given to the underlying soil structure, especially as far as fairways were concerned. More attention was paid to the greens.

With the plethora of courses that are now available, players have plenty of choice, so the condition of all the playing surfaces is constantly under the spotlight.

Any greenkeeper will tell you how pernicky golfers are, so maintaining high standards is a constant battle. To compound this situation significant weather changes have occurred. Long periods of drought and milder winters are becoming the norm.

This has meant courses that were built over difficult soil conditions suffer quicker than those where consideration was given from the start to drainage and root zone layers. Many of the older courses were designed and built at a time when nobody could envisage the climatic changes and the growth in the sport.

This must leave many greenkeepers in a dilemma as to how they can maintain acceptable playing surfaces. Their armoury of chemicals and fertilisers is rapidly depleting and for many, budget restrictions also curtail some of the programmes they would like to carry out.

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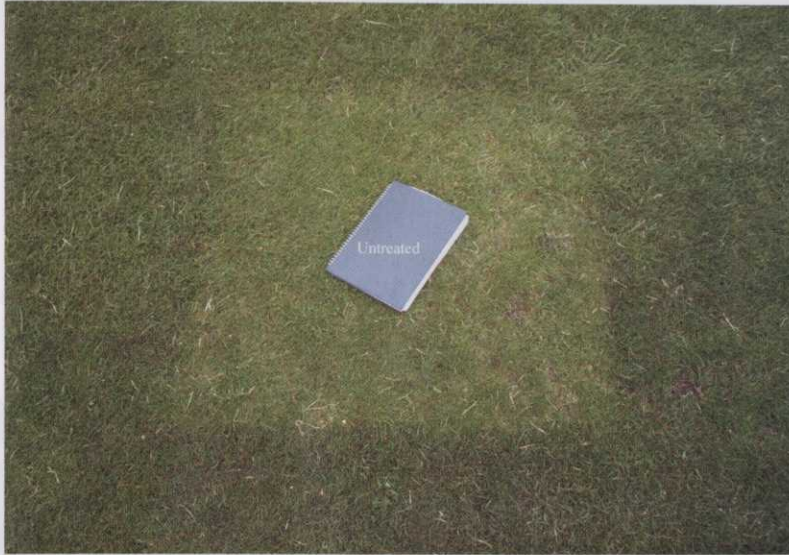
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▲ Area untreated against one that was treated with compost

In this type of situation, greens have the priority. So what can be done to improve the vast expanses of fairways and the tees? One answer is to investigate the possibilities of using high quality green organic compost as a regular top dressing.

At present it is relatively inexpensive, at least 50% less than a proprietary brand. Unfortunately, there is a slight problem when compost is mentioned, most people think of a heap at the bottom of the garden so it is important to point out this is not your run of the mill compost. This material is very different; it is made to the highest of standards and graded to meet the requirements of the turf industry.

The usage of organic waste in this country has been, and still is, slow on being taken up, compared to some of our European partners. Germany realised the need to develop composting and its uses well over three decades ago. Only in recent years have there been any significant developments in UK, but there is still a long way to go.

At least some organisations and golf clubs are beginning to look closer at the possibilities of using recycled material, as an alternative source of both soil improver and slow release fertiliser. This is mainly as a top dressing for their fairways.

By its nature, green waste compost contains various nutrients with Nitrogen being the main one. This is generally in a slow release form and there are micro-organisms present to work in conjunction with the soil bacteria to release the nitrogen for the plants.

Potassium (potash) is also present to help produce strong plants that are less prone to disease. The addition of plenty of organic matter is beneficial to all types of soil.

It improves the soil structure, thereby the flow of water and the levels of moisture are retained for longer periods. In a nutshell, it's a natural phenomenon to recycle organic matter; it is only when man starts changing the rules that the problems start occurring.

As far as compost for top dressing is concerned, the key to the right end product, is the company carrying out the composting and the quality of material from their suppliers.

Tree Fella who is based at Shoeburyness in Essex has recently made a considerable investment in the latest composting system to ensure the highest quality product.

All the base material is sourced from reputable suppliers to ensure that it is free of unwanted foreign bodies. In some cases to ensure this, it is sorted by hand. On reaching the composting site it is shredded and placed in large covered bays.

These are closed off when full and fans introduce air into the organic matter through a series of under-floor ducts. If the unit becomes too hot, air can also be supplied via an air pipe in the roof, this ensures that the active compost remains at the required temperature.

Regular monitoring of moisture levels is carried out to maintain optimum conditions for the micro-organisms to carry out their work of breaking down the organic matter.

After four weeks the compost is removed from the bays and placed in windrows outside where the process continues. During its remaining period of maturation, the windrows are regularly turned to maintain throughout the required oxygen and temperature levels.

Where compost is for golf course use it is left to mature for 16 weeks. At this stage the compost is a rich dark colour dark peat, it is then screened to the specified size and is ready for delivery.

The team at Tree Fella recognise the importance of quality control at all stages and are BSI PAS 100 approved. This scheme, which was launched in November 2002 was

sponsored by the Waste and Resources Action Programme (WRAP) and developed by The Composting Association.

BSI PAS 100 is published by the British Standards Institute and specifies the minimum requirements for the selection of suitable input materials, the processing of the compost, quality of the final material and labelling.

The main objectives in drawing up BSI PAS 100 are to give users confidence in the end products and enable producers to differentiate their products as safe, highly reliable and with a high performance level.

Records are kept at all stages of the process and there is a minimum frequency for sampling and analyses. Recommended guidelines are given regarding temperature control and turning for the sanitization of the compost.

In 2002 ReMaDe Essex a local government funded recyclable market development project, commissioned Enviro Consulting Ltd to carry out compost trials at Lexden Woods Golf Course, Colchester.

Two plots were established, one on an extensively worn tee, the other on a fairway. These were treated with compost screened at 10mm and applied at depths of 6mm and 12mm.

Comparisons were drawn with other plots, an untreated area and one which had been top dressed with a standard sand based mixture. The trials demonstrated that the composted areas improved in colour, growth was not excessive and grass re-established itself on the worn tee more rapidly than the untreated and sand based areas.

A number of local course managers and greenkeepers were invited to a discussion and workshop regarding the trials.

From the information gathered, plus the findings of Enviro Consulting Ltd, a number of recommendations were drawn up regarding the use of compost top dressing on courses.

These include:

- Top dressing to be mainly carried out in spring and autumn when the soil is warm and moist.
- Only fine particle (10mm) compost should be used and worked into the turf.
- Application rates are up to 6mm deep on fine turfs and fairways and 12mm for tees and courser grass areas.

Neil Sjoberg, owner of Epping Golf Course, was one of those who attended the workshop. He decided compost could be the answer to his problem of 15 hectares of fairways with poor quality turf. This was largely due to the fact the course had been built on land left over from the construction of the M11, the underlying soil being heavy London clay.



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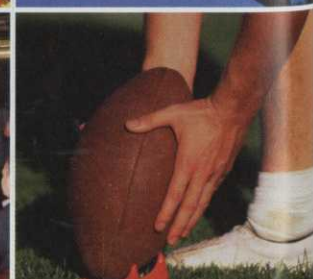
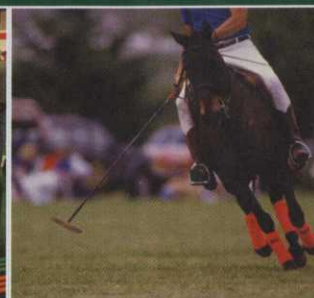
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▲ Fairway, May 2004

During March 2003, 100-tonnes of 10mm compost were purchased from Tree Fella and spread at the rate of 25-tonnes per hectare at a layer of 6mm thick. This disappeared in two days and within a month there were signs of a change. The grass had taken on a darker colour, was thicker and golfers were reporting that the playing surface had greatly improved. A second application was carried out in July 2003 and this spring has seen a marked improvement in all the treated fairways.

One of the main objectives of this exercise is, by regularly applying this relatively inexpensive compost, the underlying soil profile will be altered and opened up, so stronger root systems can develop and denser top growth will ensue.

Compost for turf applications is still fairly new, but as can be seen from the above, there is plenty of research taking place to increase both the standards and quality of the finished material.

In addition to the commercial sector, STRI are carrying out trials with some golf clubs regarding the viability of composting their own green matter.

In-house recycling is not new, as many greenkeepers in the past produced their own top dressing, simply because there was nothing else readily available. Modern composting methods have eliminated most of the problems that were experienced at that time.

For those course managers and green keepers interested in using composted organic waste there are some tips worth spending time following up.

- Finding the right composter is paramount. It is not the answer to simply contact a supplier. You need to ensure that the end product is made correctly and the raw materials are of the highest standard. If the composter is BSI PAS100 certified then this means the quality of the material is produced to the highest standard.
- Have a sample of the composted material analysed. STRI are one organisation that will carry out this work, but there are other labs throughout the country. The kind of information you will receive includes, NPK and pH levels, the presence of any contaminants plus overall particle size.

- If an outside contractor is used to spread the top dressing then it is important to ensure they are experienced in golf course work.
- It is worth finding out if there is a ReMaDe member in your locality. Contact them, as they can give you plenty of free advice and put you in touch with suitable composters. Your local authority or county council will tell you if there is one operating in your area.

Organisations that can be of help are:

- ReMade Essex (www.remadessex.org.uk)
- WRAP (www.wrap.org.uk): the contact is Louise Hollingsworth (Organics Technical Manager).
- The Compost Association (www.compost.org.uk). This website includes a summary of the BSI PAS100 requirements for certification and will have a list of member.

It is obvious that man is messing the planet up for their children and grand children and future generations.

Over the last five decades we have virtually filled every available hole in this country with waste and built hills and small mountains of the stuff.

Millions of tonnes of inorganic fertiliser and other chemicals have been applied to the land.

Our rivers streams and lakes have been polluted with nitrates, industrial waste, effluence and the life sustaining air we breathe is heavily contaminated.

It is now slowly dawning on humanity that something has got to be done. Recycling our green matter is miniscule compared to other steps that will, over the course of the next few years, have to be taken to slow the process of destruction down.

Using organic matter is a contributory factor and after all it is only emulating what nature has been doing for millions of years.

Using recycled organic matter in the form of a top dressing will not be to everyone's liking, but legislation is already curtailing a lot of past turf management practises and alternatives will have to be sought.

Is recycled green material not worth considering?

HNC Managing Sports Turf. Improving an area

Over a recent spring and summer several fairy rings appeared on one of the greens at Scraftoft Golf Club. While at the moment the problem fairy rings are small there is potential for them and the problems associated with fairy rings to increase.

The maintenance procedures outlined below are carried out on the greens at Scraftoft Golf Club.

CUTTING: The greens are cut to between 3.5mm and 7mm with a ride on type mower but when ground conditions are too wet or when grass growth is minimal the greens are cut with a Certees mower. Turfgrass clippings are removed after every mowing. Verti-cutting is carried out every three to four weeks in the growing season depending on the weather and levels of play and stress on the greens.

AERATION: Typically, in any given year, an aeration programme on the greens would consist of six winter slitting, an autumn and spring half-inch hollow core followed by core removal and heavy a top dress. A deep aeration like Vertidrain or earthquake is carried out in late autumn, depending on ground conditions. No quad tining is carried out as lack of equipment and budgetary constraints inhibit this practice. All aeration procedures are carried out by contractors (apart from slitting) because at present the golf club does not own any equipment suitable for the job.

SURFACTANTS: Wetting agents are applied in granular forms just after hollow coring and before top dressing. One or two liquid applications are applied throughout the summer months and in dry spells hand watering is also carried out.

FUNGICIDES: Typically fungicide applications are carried out in spring and in autumn, usually between two and four applications a year. The applications are both curative and preventative. Products used include, carbendazim, fenarimol and chlorothalonil. These are usually for the cure or prevention of *Microdochium nivale* (fusarium patch disease) and occasionally anthracnose.

TOP DRESSING: Heavy dressings after Spring and Autumn hollow coring is carried out to encourage soil exchange. Light dressings applied four to six times throughout the growing season to prevent layering between the thatch and dressing. With just over one and a half hectares 9000kgs are applied per annum.

Throughout the year the greens are firm, free draining and have reasonable pace, smoothness and consistency, which are playable for the majority of the year.

They are free from weeds, worms and disease, and are composed of approximately 90% *Poa annua* other grass species make up the remaining 10%. The thatch levels on the majority of the greens are between 20 and 40 millimetres.

The growth rates are even and consistent throughout the main playing season, with 100% grass coverage being the norm. However recently on the 10th green some fairy rings have appeared.

"Fairy rings appear as circles or arcs of dark green grass, often with thin or dead grass just inside or outside the rings. Fairy rings can be caused by one or more of about sixty species of soil inhibiting fungi that feed on

decaying organic matter, sometimes mushrooms appear in the rings, especially following rainfall or intensive irrigation.

"As the fungal mass grows the soil can become hydrophobic, resulting in desecration of the Turfgrass. There is no easy or inexpensive way to control this disease. The most effective measure involves stripping the sod, fumigating the soil and replanting with clean sod." (Turgeon. 1999).

"Disease is an interaction between the plant and a pathogen that disrupts the normal growth and appearance of the plant.

- Turfgrass disease development requires three components; Susceptible Turfgrass host (always present).
- Virulent pathogen (always present).
- Conducive environment in which the host and pathogen interact (changes frequently).

Any stress (environmental or of human origin) placed on the turf will weaken it and make it more susceptible to disease development.

Concentrate on managing the environment of each individual area on the Golf Course to manage the potential problems. Most fungi are totally harmless, using only dead organic matter for growth.

These fungi are extremely important in turfgrass as decay organisms that help reduce thatch, and as competitive organisms that help provide natural biological controls. Excess thatch increases the population of fungi that potentially cause disease if the proper environmental conditions develop.

Therefore excess thatch may also create a stressful environment, especially when the thatch layer becomes hydrophobic. Roots may live in the thatch and never move into the soil layer." (Schumann, G.L. et al, 1998).

During the growing season the fairy rings have only a minor effect on the playing conditions. With the potential for the rings to increase in size and their effect on the aesthetic appearance of the green warrants an investigation into a process on how to eradicate them.

As Schumann mentions above, "excess thatch may also create a stressful environment, especially when the thatch layer becomes hydrophobic". It seems that excessive thatch levels and disease go hand in hand.

Historical means of fairy ring eradication have been disruptive, expensive and even dangerous; also many of the treatments were ineffective. Following an extensive literature search new methods of fairy ring management using chemical (fungicides) control have shown to be very effective in the control of fairy rings.

Following an extensive literature search the only current and effective treatments for fairy rings was found on the Internet.

I read of two recent research studies undertaken in the States, which have successfully used azoxystrobin to treat established fairy rings. At present azoxystrobin only has a UK licence for the treatment of *Microdochium nivale* (fusarium patch).

Before the hydrophobic conditions associated with fairy rings occur a cultural programme of aeration and thatch reduction is seen as best practice as a preventative measure. Also substituting azoxystrobin fungicide for others

that have previously been used, I'm sure, will have a positive effect not only on the fairy rings but other diseases as well.

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STUDY ONE

In the first study which took place in 1997 using fungicides in the control of Localised dry spots (L.D.S.) or type 3 fairy rings and type 1 and 2 fairy rings it was noted that,

"While wetting agents can manage the systems of L.D.S. (as can cultural practices such as verti cutting, areaification, top dressing and hand watering) a fungicide such as Prostar or Heritage is necessary to kill the fungus that causes dry spot or fairy rings. (Gelernter W. 1998).

In studies previous to this one applications of fungicide have been ineffective in the management of fairy rings because traditional fungicides find it impossible to penetrate hydrophobic soils and so have no effect on the pathogen fungi.

STUDY TWO

Fidanza, M. wrote in 2002 following the World Scientific Congress of Golf at St. Andrews, Scotland a paper called 'Conventional and innovative methods for fairy ring management in turfgrass' was presented. The study took place in the States in five different locations, using conventional and innovative methods of fairy ring management between 1996 and 1999.

"Overall best fairy ring control based on creeping bent grass recovery (i.e., <5% reoccurrence in Type 1 and Type 2 fairy ring symptoms from July 1 through to August 5, 99) was observed in those plots with high-pressure injection (HPI) azoxystrobin.

Turfgrass recovery and regrowth effects were first observed five days (July 6, 1999) after treatments were applied. The visual appearance in plots treated with HPI azoxystrobin was easily observed due to the rapid turfgrass recovery and apparent resumption of growth within the treated areas." (Fidanza, M. 2002).

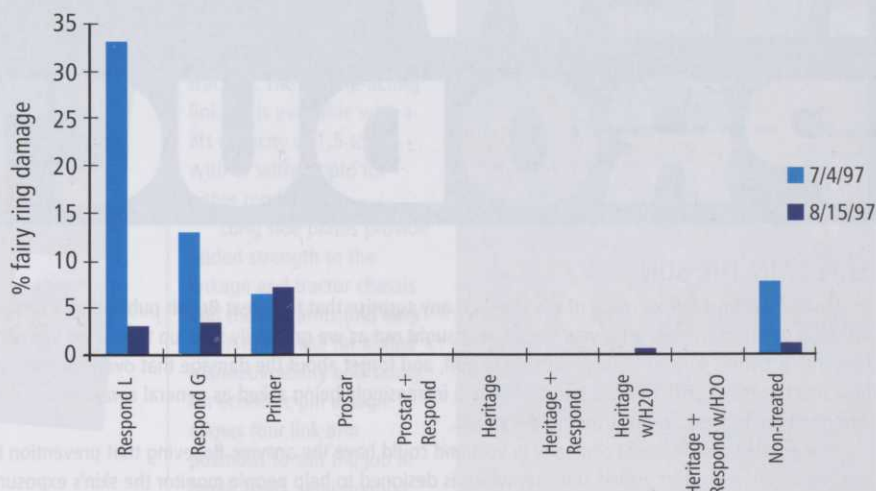
In the two studies the only difference was that one trial was carried out using a high-pressure injector to apply the fungicide and in the other a traditional boom sprayer was used.

It is clearly shown in Table 1 (below) that in the non-treated plot number 10 the amount of percentage localised dry spot and percentage fairy ring damage was high.

However in plot no 6 and 8 where Heritage was applied at 4oz per 1000 sq ft, the reduction in both diseases and the increase in turf quality were dramatic. In table 2 (above) the results are seen to be very marked, also worthy of note is the reduction in turf quality by using respond and primer wetting agents alone. Prostar is a fungicide that is at present not available in the UK.

▼ Table 2

Management of Type B fairy ring symptoms with fungicides and wetting agents



"The most effective way to control diseases is to stop them before plants become infected. Almost all fungicides can act on the surface of the plant to prevent fungal penetration into the leaf surface. In contrast, not all fungicides can stop the progression of disease once fungi have colonised the plant. To do so the fungicide must penetrate the plant surface and control; pathogen activity within the plant", (Agnew M. L. 1999).

The results of the trials are very clear, azoxystrobin is in the new generation of fungicides that penetrate the surface of the grass plant and control pathogens from the inside out. This action of the movement gives the fungicide a chance to work even in hydrophobic soils.

The results of the search were very interesting in that all the research carried out is very novel. Until very recently fair ring management had been somewhat hit and miss but, I'm sure that with new technologies in fungicide development the problem may become a thing of the past.

There was very little that I could find in books.

CHANGES TO MAINTENANCE PROCEDURES.

As with all management techniques the aim is to develop, encourage and sustain healthy turfgrass and to reduce hydrophobic soil conditions to prevent the problem before it arises.

A well-aerated soil with appropriate thatch levels using cultural methods is the preventative answer to fairy rings. It is my intention to make changes to the "Maintenance Policy" in 2004 including:

- Encourage the golf club to purchase a tractor-mounted aerator in order to reduce contractor costs and have the ability to carry out micro tinning during the main playing season. Micro tinning will help reduce the amount of thatch without much disruption to play.
- Increase the amount of verti-cutting from once every three to four weeks to once every two weeks.

However; these methods alone will not remove already established fairy rings. Applying azoxystrobin fungicide, instead of those which have been previously applied, may have a positive effect on the current fairy ring problem and may also inhibit any further outbreaks.

Given the research undertaken the only chemical control available in the UK for fairy ring management is azoxystrobin.

Without doubt azoxystrobin (Heritage) helps reduce the effects of fairy rings; it is even quoted on the University of Nebraska Fungicide trade names. (Watkins 1999) as a control.

However in the UK the license is only for the control of Fusarium patch in turf (see annex 3) and any attempt to control any other disease would be contrary to the Control of Substances Hazardous to Health Act 1989.

A change in the timings of fungicide applications to co-inside with hollow coring, reducing the volume of thatch with more verti cutting and increasing the volumes of top dressing will, I am sure, have a beneficial effect in the greens in general and a positive effect on the current fairy ring problem.

▼ Table 1

Trt. #	Product	Rate/1000 sq ft	Turfgrass Quality Rating				% localised dry spot damage		% fairy ring damage		# fairy rings per plot	
			5/2/97	5/30/97	7/4/97	8/15/97	7/4/97	8/15/97	7/4/97	8/15/97	7/4/97	8/15/97
1	Respond L*	3 oz	7.7 ab	6.7 ab	6.3 c	6.3 bc	3.7 ab	3.3 ab	33.3 a	3.0 a	11.3 a	5.3 ab
2	Respond G*	5 lb	7.8 a	6.8 ab	7.0 b	6.2 bc	1.0 b	3.3 ab	13.3 ab	3.7 a	4.7 b	6.7 a
3	Primer 604	6 oz	7.2 b	6.9 ab	7.2 ab	6.9 bc	0.0 b	0.0 b	6.7 b	7.3 a	2.7 b	3.7 ab
4	ProStar 50 WP	6 oz	5.3 c	6.0 c	5.5 d	6.0 c	18.3 a	7.5 a	0.0 c	0.0 b	0.0 c	0.0 b
5	ProStar 50WP + Respond	6 oz + 3 oz	7.5 ab	7.2 a	7.2 ab	7.2 b	0.0 b	3.3 ab	0.0 c	0.0 b	0.0 c	0.0 b
6	Heritage	0.4 oz	7.2 b	7.0 ab	7.6 a	7.3 ab	0.0 b	1.7 b	0.0 c	0.0 b	0.0 c	0.0 b
7	Heritage + Respond	0.4 oz + 3 oz	7.8 a	6.8 ab	7.6 a	7.3 ab	0.0 b	1.7 b	0.0 c	0.0 b	0.0 c	0.0 b
8	Heritage*	0.4 oz	7.0 b	7.2 a	7.5 ab	6.9 bc	0.0 b	0.0 b	0.0 c	1.0 b	0.0 c	1.0 b
9	Heritage + Respond*	0.4 oz + 3 oz	7.7 ab	7.2 a	7.4 ab	7.5 a	0.0 b	3.3 ab	0.0 c	0.0 b	0.0 c	0.0 b
10	Non-treated		7.3 ab	6.5 bc	6.3 c	6.1 c	11.0 a	6.7 ab	8.3 b	1.7 a	5.0 b	1.7 b

NEW PRODUCTS

SAFETY IN THE SUN

Starved of sunshine for much of the year is it any surprise that the great British public throw caution to the wind at the first sign of summer? Year after year we all get caught out as we gratefully soak up the sun as we participate in our favourite activities such as sailing, walking or golf, and forget about the damage that overexposure can do to our skin. But how much is too much? This is a question that is increasingly being asked as general awareness is rising regarding the detrimental effects of overexposure to the sun.

One product development company in Scotland could have the answer. Believing that prevention is better than cure, it has developed a product, called Sunsure, which is designed to help people monitor the skin's exposure to the sun. The scientifically tested optical lens is a 'magic eye' that detects when the skin has had enough sun before it starts to burn. Used in conjunction with high factor sun creams, regular checks with the device would alert those responsible for others when maximum exposure to the sun has been reached, and the time has arrived to take preventative measures.

It could be the answer everyone is looking for.

"We've found that when people monitor themselves with a Sunsure when they are in the sun they are always amazed just how quickly changes start occurring. People often don't realise just how powerful the sun is," said Managing Director, Donald Smith, of Albyn of Stonehaven.

Further information on Sunsure can be found at www.sunsure.com



GOLF TEE SIGNS

March saw the launch of a new division of RC Marble called Golf Tee Signs. The new division is devoted exclusively to supplying granite signage to the Golf and Leisure Industry.

The decision to establish the new company follows an extremely effective 12 month sales initiative to break into the golf signage market. Golf Tee Signs will be headed by Sales Executive, Dean Poynter.

"We will be looking to consolidate what has been an incredibly successful year and establish Golf Tee Signs as the leading company for granite golf signage in the UK and Europe," said Dean RC Marble has been supplying quality granite

products since 1957. Establishing Golf Tee Signs is in recognition that the golf sector requires total commitment.

"We have to ensure that we keep pace with the rapid expansion into the golf market, in terms of production, sales and service," said Dean.

"We have already proven that there is a wealth of demand for top quality, granite signs, by competing for and winning significant contracts at prestigious installations such as the De Vere Belfry, De Vere Slayley Hall, and Wentworth Club."

Golf Tee Signs manufacture and supply a range of standard or bespoke Tee Signs, point of play markers, fairway distance signs and mow-over discs as well as entrance signs, course maps and other information displays. All are made of natural granite mounted on wood, metal or stone depending on the installation and offer a colourful, natural, durable, and maintenance free solution to long term signage requirements.

For further information Tel: 01422 347127.

NEW LOOK PEDESTRIAN MOWER

Austrian-based Reform-Werke has launched the new Reform M3 range of pedestrian mowers.

The launch follows the acquisition by Reform-Werke of hydrostatic pedestrian mowers from Swiss company Bucher Automotive, a division of Bucher Industries AG. A recognised specialist in agricultural and municipal technology, Reform has revamped the range to include additional Reform features.

Offering all the benefits of innovative Reform technology - including the ability to handle steep slopes, easy handlebar steering, user-friendly operation, optimum weight distribution, ergonomically arranged levers and low centre of gravity - the Reform M3 range ideal for steep terrain. A clutch brake ensures extra safety.

One of the key advantages of the M3 range is the ability to switch into reverse gear without having to release the handlebar. A choice of three forward and three reverse gears means the mowers can be tailored according to different terrain and forage conditions and the LK and DK models also offer three forward and reverse crawler gears. The patented independent wheel steering brake clutches on the and LK models are operated by means of a series of conveniently positioned levers on the handlegrips and make for easy manoeuvrability with the minimum of effort.

Other key new features include a new rubber steering column bearing, developed in conjunction with the Vienna Technical University, which ensures the mower is safe to manoeuvre and keeps vibration to an absolute minimum. Vibrations are further damped by means of rubber bearings on the handlebar. A clamp lever enables the steering column on all



three M3 models to be adjusted to any height: while on the LK and DK models, the handlebar can also be adjusted horizontally for mowing in even the trickiest situation.

All three models feature the new ultra-large appliance connector with graduated connection pin and automatically engaging pto - making it simpler to change the appliance attachment without tools.

Prices for the Reform M3 range start at £4,962.

For further information Tel: 01423 358928.

ATTILA BROCHURE LAUNCHED

Etesia has launched a new brochure which provides a comprehensive over-view of the company's full Attila range. Included is the recently launched 180cm Attila A180 all-terrain brushcutter. The special feature of this machine is its hydraulic automatic self-levelling system which ensures that the operator, engine and controls are always in the vertical position, while the floating cutting units follow the terrain's contours. This provides total comfort and safety for the user when working on banks up to 27 degrees.

The brochure also includes Attila 95cm and 85cm ride-ons, plus the AV51 pedestrian machine. Telephone: 01926 403319 for a copy.



NEW KAWASAKI BRUSHCUTTER

Kawasaki has given the UK brushcutter market a sharper cutting edge with the addition of two new models to an already impressive line-up.

Significant technical advances reinforce the Japanese manufacturer's established reputation for performance and durability within the professional and domestic markets and the two new models are expected to increase market share further.

The loop handle KBL27-A and the horn handle KBH27-A come equipped with improved, 27cc two-stroke, horizontal shaft petrol engines and will replace the existing KBL26-A and KBH26-A brushcutters within the seven model line-up at the lighter end of the range.

Among the improvements are enhanced operation and smoother start with the introduction of a new carburettor fitted with a slow idle starter device which prevents the blade turning during start-up. The start-up operation has been further improved through reduced pulling force made possible with Kawasaki's Advanced Recoil (KAR) starter which is a standard feature.

A built-in spark plug, fully covered carburettor, one-piece fan housing and advanced overall shape give the two new brushcutters additional features for what has emerged in the UK as a very discerning market over recent years.

A new nylon line cutter has been designed to add to the range's user-friendly reputation while the high ergonomic standards for the benefit of operators focusing on balance, weight and vibration, inherent within the line-up, have not been compromised in any way. Full compliance with EPA and EU emission regulations as well as RFI suppression is standard throughout the range.

The new brushcutters, which are already available from official Kawasaki power product dealers, come with a two year warranty and cost £310 (loop) and £325 (horn) plus VAT respectively. Each new Kawasaki brushcutter also comes with harness and goggles.

For further information Tel: 01285 654777.



NEW FRONT LINKAGES

Opico has launched a neat front linkage and pto for the Kubota ME8200 and ME9000 Series compact tractors. The double-acting linkage is available with a lift capacity of 1.5 tons, with or without pto for either model.

Long side plates provide added strength to the linkage and tractor chassis and the link arms fold back when not in use for added manoeuvrability and safety. An eccentric pin design allows four link arm positions to suit the job in hand: fixed, semi-floating, fully floating and vertical for storage.



The front pto gearbox is capable of delivering up to 200 hp, and hence is well on top of the job with even the ME9000. It features an oil immersed multiple plate clutch using electro hydraulic "Soft Start" engagement to avoid "snatching" and possible implement damage when the pto is engaged.

Like all OPICO front linkages, it is painted in two-pack and baked to give the same quality of finish as the tractor to which it is fitted. Prices are £1456 without pto, £3484 with pto. Fitting service prices range from £140 to £380.

For further information Tel: 01778 421111.

IMPROVEMENTS TO MINI EXCAVATORS

Kubota, has unveiled two significantly improved additions to its top-selling KX-3 Series of mini excavators.

The new KX41-3 and KX36-3 models are claimed to be the most powerful minis in their class, setting new standards in quality, performance, operator safety, reliability and comfort.

They are designed for the efficient handling of the broadest range of jobs and their versatility makes them ideal for many different applications and users, from civil engineering to landscaping and for owner operators to plant hire companies.

Among the numerous new features, variable displacement pumps are fitted to both machines for optimum oil flow and pressure, maximising fuel efficiency and minimising noise levels.

Smooth, simultaneous and precise control of the boom, arm, bucket and slew is achieved with Kubota's unique hydraulic system.

An 1100mm arm fitted as standard provides a maximum digging force of 7.8 kN (796 kgf). The digging force of the bucket is 15.6 kN.

It is powered by a three-cylinder Kubota D902 engine with 898cc displacement, providing economical and environmentally clean power, and weighs 1610 kg (with cab).

In addition to the KX41-3S model, which has a standard undercarriage, the KX41-3V features a variable track gauge.

Both models offer two-speed travel. The minimum travelling speed for the KX41-3S is 2.4 km/h and the maximum is 4.3 km/h. For the KX41-3V the respective speeds are 2.2 km/h and 4.0 km/h.

To minimise operator fatigue, the cab provides maximum comfort by offering more legroom and a weight adjustable semi-suspension seat.

For further information Tel: 01844 214500.





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SCOTTISH REGION

Central

The first golf tournament of the season was held by courtesy of Crail Golfing Society on April 29 over the Craighead Course and with a "slight" North Sea breeze blowing it turned out to be a real test of golf even for the "good" players.

Nevertheless over 65 members and guests (club officials) enjoyed a great day both on the course and in the clubhouse.

Our sincere thanks go to everyone at Crail for the courtesy extended to us, especially Course Manager, Alan Purdie, and his staff for the excellent condition of the course, Club Secretary, Margaret Hunter for all her assistance, Margaret and her staff in the Clubhouse for keeping us fed and watered throughout the day with her first class catering.

Club Captain, Jim Elder, and Vice Captain, David Manders, who both joined us on the day, with Jim (hope the finger was ok for the golf in Portugal!) presenting our prizes to the winners following the evening meal.

Thanks also to Peter Boyd and Kevin Brunton for dealing with the cards before and after golf. To everyone who supported the raffle by donating prizes and purchasing tickets. "Thanks for your support".

Special thanks are due to the patrons of the Scottish Region for their continued support which contributes towards the provision of the prizes at our tournaments. Hope I have included everyone who helped if not SORRY!

Prize winners on the day were as follows:

Best Scratch (Daval Trophy) Brian Heggie, Aucterarder, 82; Best Nett (Greentech Trophy) Tom Comerford, Grangemouth, 74. 1st Class 1. H/cap (Toro Trophy) Michael Love, Grangemouth, 77 (bih). 1st Class 2. H/cap, Stuart Pearson, Aberdour, 77. 2nd Class 1st H/cap (Section Trophy) Mark White, St Andrews, 79. 2nd Class 2. H/cap, Ian Jarvis, Alloa, 82 (bih).

3rd Class 1. H/cap (Section Trophy) Donald Gardner, Sconnie, 76. 3rd Class 2. H/cap. Malcolm Lowe, Tower of Lethandy, 85. Stewart's Quaich. M. Love/T. Comerford, Grangemouth, 151. Patrons, Peter Taylor, STS, 75. Guests – David Manders – Crail, 79

Remember the Autumn Tournament at Downfied on September 29, there's sure to be a big entry for this one, so get your forms in early!

One new member to welcome this month and he is Jon Methven, from the Dukes Course at St Andrews, Welcome, Jon, and we hope to meet you at some of our future events.

We are in the process of renewing the Section Trophies and it's important that all 'old' trophies are returned in order that they can be included in the history of the Section.

At the moment there appears to be one missing which is the Trade and Visitors' Trophy, and, as far as I can make out, it was last seen around 1989/90. If anyone has any idea where this trophy is could you please arrange for it to be returned to me or any Section committee member. Thanks!

John Crawford



Ayrshire

The Spring Outing hosted by Prestwick St Nicholas Golf Club was a resounding success with 30 participants. Our thanks to Club Captain, David Gilmour, and the committee for use of the course and facilities, also to Tom Hepburn for help with arranging the day, the bar and catering staff for a superb meal and refreshments and lastly to John MacLachlan and the greenstaff for providing a wonderfully conditioned course, especially in mid-April.

Prize winners were as follows;

Scratch Prize – Steven Kelly, Lockerbie, 69 pts; First Class: 1. Alan Forrest, Western Gales, 36 pts; 2. John Mair, Bellshill, 35 pts; 3. Stephen Higgins, Ardeer, 35 pts; 4. Dennis Tweddell, Turnberry, 34 pts; 5. George Brown, Turnberry, 33 pts; 6. John MacLachlan, St. Nicholas, 32 pts.

Second Class: 1. Colin Smith, St. Nicholas, 38 pts; 2. Iain Barr, Largs, 31 pts; 3. Innes Tait, Lockerbie, 31 pts; 4. Richard Fulton, St. Nicholas, 30 pts; 5. Dale Norquoy, Irvine, 30 pts; 6. Martin Lothian, Turnberry, 26 pts.

Trade Prize. Derek Duthie, Aitkens.

Thanks to all who attended in particular those travelling a considerable distance. Confirmation of the Autumn outing will appear in next month's news.

The Scottish Greenkeepers ran out handsome winners in the recent Greenkeepers vs. Club Secretaries match at North Berwick Golf Club. The golf course was in great condition and what a layout! Those that have played there will know but for any who haven't, I must urge you to put it on that 'must play' list now!

That just leaves me to welcome three new members to the birthplace of the Open Section, Iain MacDonald, Largs Golf Club; Steven Kelly, Lockerbie, and Mark O'Brien, Prestwick St. Nicholas.

Any news phone me on 01292 478606.

Ee ay ee ay Adios

Dennis Tweddell



NORTHERN REGION

BIGGA NORTHERN REGION GOLF MANAGEMENT TROPHY 2004

The Golf Management Trophy event is a team event sponsored by Scotts UK Professional. It is open to golf clubs in the Northern Region, and this is the inaugural year for the event in the Northern Region.

The format is aimed at bringing together the various management elements of golf clubs with the opportunity to win equipment for the golf club plus individual prizes, and is an 18 holes Better-ball Stableford competition.

Teams comprise a greenkeeper who must be a member of BIGGA; Golf Club Secretary or Manager; Club Captain or Vice Captain and Chairman of Green or a Member of the Club Committee. The entry fee is £100 per team, which includes the golf and a meal after play.

The events for 2004 are at Teesside Golf Club on Wednesday, August 18, and Carden Park Golf Club on Monday, August 23. There are places remaining at both venues, so if you wish to enter a team from your golf club please contact Peter Larter the Regional Administrator on 01476 550115.

North Wales

After attaining his 25mts swimming badge rather late in life, Andy Peel, from Bull Bay GC, has entered in an Iron Man Competition – it starts from Amlch on Anglesey with a swim across the sea to Conwy where he then jumps on a bicycle and rides around the castle and over the bridge to the Great Orme in Llandudno. After running over the top and down the other side he will swim back to Amlch to run across the finish line. We all wish him the best of luck and hope the sharks are not very hungry on that day.

Also from the Island of Anglesey, Paul Taylor, of Henllys Hall GC, is doing a sponsored parachute jump in aid of the Cancer Ward in Bangor Hospital this will take place in July and if any of you wish to sponsor Paul he has the form