

up to 35°C and this is a period when the conditions would be best suited to growing Bent grass rather than the native Perennial Poa. The greens are a mixture of Perennial Poa and Bentgrass at a ratio of around 90/10. The Poa at OCC is virtually unique to this area of the States with its resilience making it a very hardy and tough species. There are not many greens in the world that could withstand the torture these greens receive every day.

Perennial Poa also differs in respect to what British Greenkeepers are familiar with, in that it produces very little in the way of seed heads in the spring, avoiding the bumpy surfaces they bring with them. The leaf blade is extremely fine and creates a very dense sward. The fairways and tees are a mixture of Bent and Poa at a ratio opposite to that of the greens, the rough consists of a mixture of Poa annua, Kentucky bluegrass and various cultivars of Ryegrass.

Intense aerification plays an integral role in the upkeep of the course. Through years of aerifying at a depth of only 2-3 inches, the greens had



An aerial view of this stunning course



The unique and infamous church pews

developed a very severe perched water table which was restricting root growth and in turn affecting the turf quality. It was decided that Drill and Fill was the best technique to break through this layer and begin to alter the sub soil. This operation involves drilling down to 12 inches, removing the debris and filling the cavity with sand. The greens are then cleared of any debris and the crew will come straight back and Quad tine the greens twice more. This creates many small holes and quickens up the healing process. Zimmers is a believer in doing as much of the work by hand and reducing machinery traffic on the greens. In order to fill all the empty holes, the sand is applied using shovels and brooms.

The final step is Sand Injection which involves a machine to inject sand into the greens profile using a high-pressure jet of water. The sand is incorporated into the water before entering the soil profile. During aerification over 50 tonnes of sand is put into the greens profile and over the past five years the infiltration rate through the soil has risen from half an inch to over six inches per hour.

Throughout the height of the season the greens are vented every 2-3 weeks using pencil tines at two inch spacing, this operation is carried out first thing in the morning and the greens are then rolled before being cut to eliminate any scalping that may occur due to tufting.

The approaches and tees are aerified in a similar way to that of greens, but with larger 5/8th tines. Aerification on the fairways is carried out with two Ransomes GA-60 aerifiers, operated by modified Cushman utility vehicles. All roughs and fairways are slit using an 'Aerway' machine towed behind a Cushman and they are also deep tined. The knives penetrate up to eight inches deep creating an ideal slit which helps with water infiltration and root development. OCC has also undergone a very intense rough renovation programme, in an attempt to eradicate Poa Annua. During the autumn the rough has also been aerified using the GA-60's and then over seeded with a Kentucky Bluegrass/Ryegrass mix, the plugs and seed are then dragged and broken up.

OCC employs nearly 45 staff within the grounds department, including three Assistants, ten Turf Graduates and almost 20 Turf Interns. Immense effort is put into providing these interns with housing, food and offering them the very best opportunity to take as much away from their time at Oakmont.

John Zimmers has been building his current staff for the past two to three years, creating an operation that virtually runs itself. Every day

begins with the interns setting up all the mowers, loading them on trailers and checking fluids. This is followed by a 5-10 minute meeting in which the Superintendent and his Assistants update the crew on any relevant news and issue the morning assignments.

OCC is famous for having, quite possibly, the fastest greens in the world and it comes as no surprise that they require the most attention. All playing surfaces are cut every day during the season, with greens being cut three to four times every morning at 0.086 (2.2mm) using Jacobsen hand units with solid rollers. The hand units are responsible for 2-3 cuts while a triplex is used to make the first cut to remove dew and save on labour. The clean up cut is carried out using a separate mower set at 2.6mm and this is usually done every other day to reduce wear. After the Greens are cut they are rolled using Salsco ride on rollers, a process that is carried out on average, five times per week. Tees and Approaches are cut every day using Toro 1000 hand units set at 8.4mm and 6.5mm respectively. Fairways are cut at 9mm with grooved rollers by 7-9 people with triplexes. They operate in pairs splitting each fairway in half, one person working towards the tee end while the other works toward the green. There is also a person who works by himself with a triplex, set at the same height but with solid rollers on the units. This mower is used to cut the clean up pass around each fairway and reduces stress to the grass plant.



The stress that the turf is under during the summer from mowing and high volumes of play, can be immense, this, coupled with the high humidity levels in Pittsburgh, make spraying and watering the most important factors. Although Oakmont is equipped with the very latest irrigation system the greens/approach heads are never used, all watering to these areas is carried out by hand. 3-4 employees are entrusted with the responsibility of preparing the greens every morning after the mowing is complete. No two days are ever the same and the waterer must learn to observe the changes in the greens appearance and demands. The aim is to give the green just enough water to be able to survive, with the option of 'touching up' localised wilt during the afternoon.

The greens have to be as fast as possible at all times which means that they have to kept 'on the edge' at all times. During the summer the greens will start to wilt just after lunch and they will then be touched up if required for the remainder of the afternoon. The humidity plays a massive role in the amount of water applied, if the temperature is 35°C and humidity is 95% this will require a lot less water than if the temperature was cool and there was very little humidity. The waterer could have to cool off the green five or six times during the afternoon in an attempt to keep the grass plant cool. Once the temperatures begin to drop and the water crew deems it time, the course is 'put to bed', a process that involves watering hot spots and problem areas, building moisture in these areas and giving the turf enough water to recover over night. All surfaces (excluding greens) are watered at night if necessary and then any daily watering is done by hand, utilising a crew of up to 12 people.

Most spraying, and OCC use Floratine products and Primo Maxx, is carried out on a Monday morning as the course is closed until lunchtime in order to prepare for the corporate shotgun later that day. Oakmont is fortunate enough that it has enough equipment to be able to spray any day of the week and it is not uncommon to spray up to three times a week depending on the pressure the turf is under.





As this spring approaches, the crew will be under pressure to prepare the course for the upcoming US Open, a task that is made slightly easier by the high standards kept at OCC every other day of the year. It has often been said that if the Open had to be moved to a different venue any year, then Oakmont would be ready.

The general course maintenance will not change with the exception of growing up the rough, the USGA have again adopted a 'graduated rough' as they did at Winged Foot GC last year. The first cut will be 6ft wide and cut at 1 ¾ inches, the second cut will be 12ft wide and cut at 4 inches and will incorporate most of the bunker and green complexes, finally the third cut for the deep rough will be at 6 inches.

OCC has been preparing for this event for the last seven years and it is only as we come closer to the final stages of the preparation that it truly becomes apparent what we are about to be a part of. The regular staff will be helped out by an extra 120 volunteers during the week of the tournament and they will be assisting all aspects of course maintenance. 20 people will mow greens while raking the bunkers will swallow up another 30 people, this puts a serious dent into the staff quota and it is easy to see where the extra help is essential.

Along with the golf course itself the USGA also builds a small town around all 18 holes, from the merchandise tents and media facilities to

the volunteer tents and grandstands. Over 12,000 cubic yards of gravel for these to be built on. When all is said and done and the final putt is sunk on Sunday afternoon, I hope to look back on this experience with great satisfaction knowing that I have been a part of something truly special...

I would like give extreme thanks to Mr. John F. Zimmers Jr. for all he has done for my career, I hope to keep learning from him for many more years to come. I would also like to thank Mike O'Keeffe, at The Ohio State University. Being part of the programme was truly the best thing that I ever did and gave me a lot of opportunities. Thanks also to LC Lambrecht/Golfstock for the great photos, Gareth Woosnam and his team at Oswestry Golf Club and Reaseheath College.

About the Programme

It is run by Michael O'Keeffe and they bring trainees from all over the world to top courses, such as Oakmont, Merion, Pine Valley, The Olympic Club, Pebble Beach. You have to be single, drug free, have a clean drivers license and be between the age of 19 and 29 years old. If you have any questions about the programme feel free to email me at: mccaffreydavid@hotmail.com or Michael O'Keeffe at: okeeffe.1@osu.edu

The website for Oakmont is: www.oakmont-countryclub.org



PUMP IT UP

Probably the biggest investment a golf club makes, outside of a new clubhouse, is its irrigation system. It might not be something that's used every day, or even every month, but Course Managers would invariably describe it as one of their most useful tools.

But an irrigation system is only as good as its pump station so making sure it is working efficiently is incredibly important.

There are three types of pump station that can be used on a golf course. There is the controller controlled pressurisation of mains which doesn't carry pressure until it is programmed to do so then it takes around five minutes for the pressure to build up. The other two are both pressurised mains systems, one a standard pressurised system, while the larger systems offer variable frequency control which means it only supplies enough water to perform the task it's been asked to do.

"The first two systems are ideal for nine to 18 hole golf courses which run one or two pumps but the variable speed pumps are ideal for larger facilities with more than one golf course which perhaps run three or four stations at the same time," explained Martin Hinchliffe, of North Staffs Irrigation.

"The particular pump station that a club needs is determined by the enormity and complexity of its irrigation system."



Once the correct station has been selected location becomes an important issue.

"The fundamental thing about pump stations is that you need a water supply and you need an electricity supply and those two things dictate what you are able to do," explained Martin.

If a golf club is in a remote area it might only have a 240 volt supply and that puts constraints on the type of pump you can have. A regular 18 hole course wishing to cover greens and tees will require a capacity of at least 4.4kW.

A club may decide that it wants its pump station beside the maintenance facility and not next to the clubhouse but if the club has three phase electricity but the maintenance facility only has single phase, which is often the case, a three phase cable would have to be run from the clubhouse which adds to the cost of the project and has to be factored in.

The other main considerations for positioning a pump station come down to water pressure. Irrigation water is drawn from one of several potential sources – the mains; a borehole; a holding tank or reservoir; a pond or stream.

"The major problem we come across when drawing from a pond or stream is that the pump is, without exception, above the water source so the water has to be sucked up by the pump before it is delivered out of the pump and, in doing these two jobs, this means you lose pressure on the delivery.

"If the pump station is below the water supply and this happens in the case of a holding tank and with a purpose built reservoir, gravity helps the water into the pump so it doesn't have to do any work and retains its power for pumping the water out."

If the topography of the golf course is also unusual it can also cause problems. Even if the water source was not the issue there are elements to consider when it comes to pump pressure. "If you have a mountainous course and put the pump station on top of the hill you'd have pump pressure and gravity providing a lot of pressure at the bottom of the course. If you put the pump station at the bottom of the hill you'd need a lot of pressure to pump the water to the top of the course," explained Martin.

"Ideally the best place to locate the station would be the middle of the course, half way up the hill, because what you'd be looking for is a working water pressure of 8 bar – 120 PSI. Normally sprinklers work

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between 6 and 7 bar but if you get too much pressure it atomises the water jet so you wouldn't get the range you required from your sprinklers," he explained.

Silting is also an issue particularly from natural water sources like ponds and streams and filters should be fitted to make cleaning much easier.

One final consideration when it comes to locating your pump station is that curse of the modern day golf club – vandalism. If the pump station is too exposed and/or isolated it becomes a much more attraction proposition for vandals and they can cause much damage to the electronics. If your pump station is exposed try to make it secure as possible. If it does become damaged it's Sod's Law that it is just before Captain's Day, in the middle of a drought or just when you want to assist the success of your overseeding!

- **Always check out the available electricity supply before positioning a pump station**
- **Assess which type of system best suits the needs of the golf course**
- **Be aware that if you are drawing water from a pond or stream, or below the level of the pump station, extra pumping power will be needed**
- **Too much water pressure can cause as many problems as too little water pressure**
- **Try to ensure that the pump station is position at a half way point on the course in terms of height**
- **Take potential vandalism problems into account when position a pump station**

Thanks to Martin Hinchliffe, Sales Director of North Staffs Irrigation, and to Rainbird for their assistance in the production of this feature.

FIRST AID IN THE GOLF CLUB

BIGGA'S Health & Safety series produced by Xact



Legal Requirements

No matter how safe the workplace or how well risks are managed, accidents can still happen. Members, employees or visitors may be injured or taken ill while in the Club or the Course and arrangements must be in place to give them some level of first-aid assistance as soon as possible. The Health and Safety (First Aid) Regulations 1981 put a legal duty on employers to make adequate first-aid provisions for their employees.

In addition to any legal duty and the moral obligation of employers to provide first-aid, there may be other additional benefits. Prompt first-aid is likely to lead to a faster recovery by an injured member, visitor or employee who may require less time off work.

Every Club should have a person delegated to take charge of the provision of first aid. The level of training required is dependent on the risks, the possible severity of injuries, the number of employees and the proximity of expert professional help.

High risk areas or activities e.g. chain-saw use, would be best served by a trained First Aider as any likely injury would be severe and prompt action may be needed to prevent death.

Lower risk areas/activities could be handled by an Emergency Appointed Person or Appointed Person. An Emergency Appointed Person would be able to help in situations of heavy bleeding or emergency resuscitation. An Appointed Person should limit their assistance to making the casualty comfortable and summoning medical assistance. There is also a duty to ensure that First Aid supplies are replenished as required. The name

of the person who provides First Aid should be prominently displayed in the Clubhouse and associated buildings.

Advice on Treatment

Under no circumstances delay in sending for an ambulance if medical or nursing personnel are likely to be required. If you are administering First Aid, ensure someone else telephones for help.

First aid should only be administered if you are trained to do so. Persons not trained to administer first aid should not attempt to do so unless death is likely before trained medical personnel can take charge.

Above all, personal safety must always be a priority. There is little point in trying to save someone else's life if the likely result is two fatalities instead of one.

The First Aid Box

First Aid boxes should contain a guidance card detailing the most important actions to follow as well as sufficient adhesive and wound dressing for the injuries envisaged.

Records

Remember to make an entry in the accident book and that certain injuries are reportable to the enforcing authorities under RIDDOR.

Minor Injuries

Where necessary, minor injuries can be treated by the casualty using materials from the first-aid box, but they must inform the Appointed Person or First-Aider and an entry made in the accident book.



THE ECONOMIC VALUE OF 'GREEN' COMPOST UTILISED AS A TURF TOPDRESSING

By Ron Alexander

Golf course and other sports turf management faces many changes moving into the future. Golf course superintendents face the challenge of expanded course usage, a shrinking selection of pesticides, climatic change and tightening maintenance budgets. For these specific reasons, the use of compost in sports turf management around the world has expanded significantly. Golf course superintendents in the UK have a unique opportunity to benefit from the expanded production of compost. Real compost (sometimes called green compost in the UK) is the product resulting from the controlled biological decomposition of organic material that has been sanitised through the generation of heat and stabilised to the point that it is beneficial to plant growth. Real compost is not peat based. Compost can be produced from many feedstocks, however, the majority of composts produced in the UK are produced from green waste (grass clippings, leaves, brush). Composts can be produced so that they possess very consistent characteristics.

The Benefits of Using Compost in Turf Management

Having a proper amount of organic matter in the soil is essential for soil health. These healthy soils allow turf to flourish, because they provide it with a better medium for which to grow and derive their sustenance. This is sometimes forgotten in the sports turf industry, where sand-based media are used and concerns about softness of playing surfaces are an issue. Compost adds high quality organic matter to soils and sand-based media, increasing its quality and long-term success through a variety of benefits:

- Improved soil structure and tilth
- Improved water holding in light soils
- Reduced bulk density in heavy soils
- Supplies slow release macro and micro plant nutrients
- More even turf colour, plus green-up without excessive growth
- Increases soil cation exchange capacity
- Improved wear tolerance
- Reduced surface hardness
- Provides and feeds beneficial soil microorganisms
- Biological disease suppression
- Promotes recovery on heavy-use turf sites
- Weed free

The majority of these benefits were demonstrated during a Sports Turf Research Institute (STRI) research project (October 2005) completed on the use of compost in topdressing (sponsored by Waste & Resources Action Programme).

Unfortunately, when assessing the use of a new product, it is difficult to actually quantify these benefits. When assessing the value of compost in certain applications, we must consider not only the physical, chemical and biological benefits in general, but also the value it can lend to reduced chemical fertiliser, pesticide and irrigation costs. The following example illustrates the value of compost used as a turf topdressing. In saying this, it should be understood that neat compost (unblended with sand) is not a 100% replacement for sand-based topdressings often used in golf course management. It is not recommended to use neat compost as a topdressing on tees and greens or to fill in deep holes. However, it is an excellent topdressing for large turf areas, such as fairways, where it is too expensive to use a sand-based topdressing.

ECONOMICS - Fertiliser

Most composters have avoided comparing their compost products to chemical fertiliser, however, the innate content of slow release nutrients in compost, both macro and micro-nutrients, can be a huge asset to golf course superintendents. As we know, fertilisers can contain macro and/or micronutrients. Most chemical fertilisers contain primarily N:P:K, whereas compost contains these three nutrients plus all of the micronutrients too. Artificial fertiliser formulations vary depending on the end use of the product.

Comparison of Compost and Chemical Fertiliser Nutrients

Fertilisers on the market today are sold with a guaranteed N:P:K value. For example, two newer fertiliser formulations used on sports turf are 12-3-24 and 3-3-32, and they contain high quality, controlled slow release nitrogen sources. These products are often applied at a rate of 300 kg per hectare. At these rates, the 12-3-24 product provides:

- 36 kg/hectare of nitrogen*
- 9 kg/hectare of phosphorous
- 72 kg/hectare of potassium

*Calculation example: 300 kg/hectare fertiliser x 12% nitrogen fertiliser
= 36 kg/hectare of nitrogen

Perhaps more common fertilisers used within the sports turf industry include a 12-6-6 or 12-3-9, used in the spring/summer, and 3-12-12, used in the autumn. These products contain quick release forms of nitrogen, and therefore, are much less expensive than the controlled release products (costing as little as £0.50 per kg). These products would also be applied at a 300kg per hectare application rate. A compost possessing a typical nutrient ratio of 0.8-0.3-0.6 (N-P-K, on a wet weight basis) with a 37% moisture content, and applied at 62 cubic metres per hectare (a typical 6mm topdressing rate), will provide:

- 210kg/hectare of total nitrogen - approximately 21kg/hectare of available nitrogen (typically estimated at 10% availability the first year)
- 79kg/hectare of total phosphorous - approximately 12kg/hectare of available phosphorous (typically estimated at 15% availability the first year)
- 157kg/hectare of total potassium - approximately 126kg/hectare of available potassium (typically estimated at 80% availability the first year) during the first year of application.

Using this example, you can see that using compost at a common topdressing application rate can often provide enough nutrients to replace a typical application of chemical fertiliser.

Fungicide

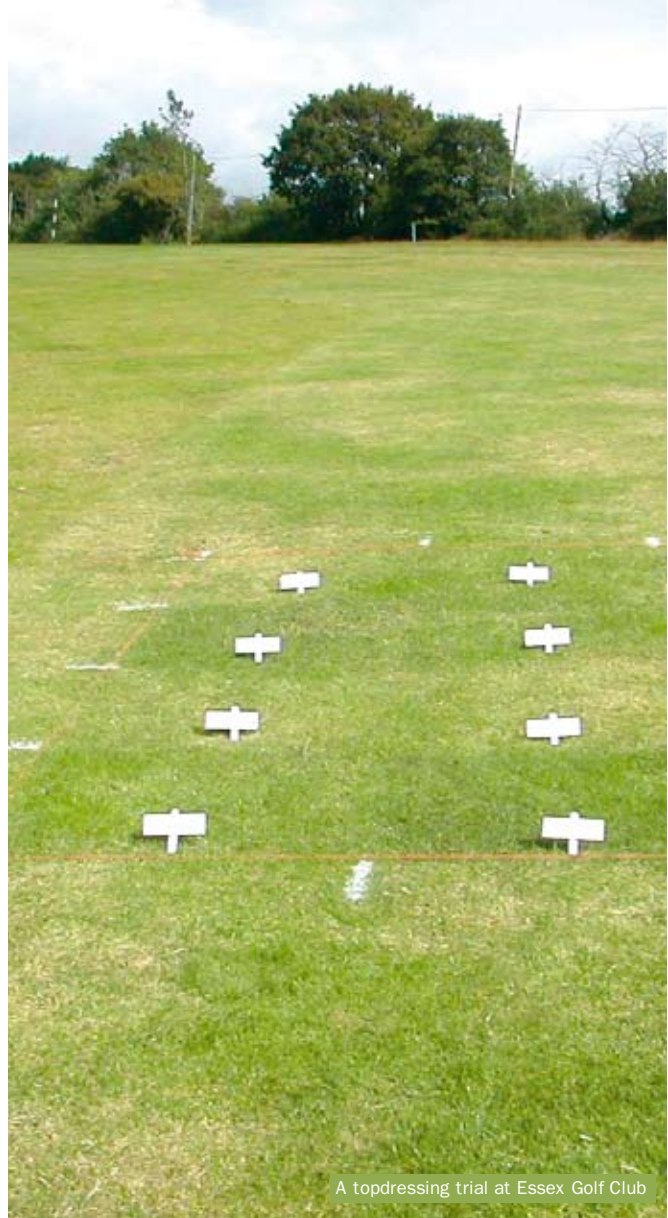
Research from around the world has shown that many composts possess disease (fungal) suppressive properties. Various Ohio State University (USA) research studies completed throughout the 1980's and 1990's, primarily spearheaded by Dr. Harry Hoitink, have even identified the specific modes in which suppression occurs. Commercial labs in the US are now testing composts for microbial populations in order to help predict disease suppression. It should be noted that compost provides preventative disease control, and not curative control.

All pesticides sold in the UK must be registered through DEFRA. Although specific disease suppression claims cannot be made by compost producers, without proper registration, DEFRA allows the following to be stated: "This product is not a pesticide. However, it contains low levels of naturally-occurring soil micro-organisms which may help to suppress soil-borne populations of some plant diseases." Although specific claims cannot be made, research and practical experience has shown that the use of disease suppressive composts could replace, or reduce, the use of fungicides in many turf maintenance scenarios.

Specific chemical fungicides can work as either preventatives or curative, and some possess both properties. Fungicides can be costly to apply, with preventative fungicides such as Myclobutonil and Fenarimol costing £450 to £750 per hectare (we are using £600 per hectare in the example below as a realistic average price). There can be a huge variation in the cost of different fungicides, based on application rate, product type, mode of action, etc. However, the cost figures above, estimate the two fungicides used at a 6 to 8 litre per hectare application rate, at a price of £75 to £100 per litre.

Topdressing

Topdressings physically improve the soil structure, improving drainage and aeration, and may also be used to incorporate organic matter. Many composters market their finely screened composts as turf topdressings, which are used on golf course fairways, sports pitches and even home lawns. Furthermore, many composters are now blending their composts with industry standard sands to create high value topdressings that possess fertilising and disease suppressive properties from the compost.



A topdressing trial at Essex Golf Club

Green composts can be considered as alternatives to peat and topsoil in standard sand-based topdressings.

In the UK golf industry, sand-based topdressings cost approximately £25 to £32 per tonne, delivered, and similar products used to construct tees and greens (using less expensive sand) costs approximately £15 to £20 per tonne, delivered. In the example below, we estimate a finely screened compost being sold at a price of £16 to £17 per cubic metre, delivered, although they often cost less. One tonne of sand-based topdressing is the same approximate volume as one cubic metre of compost, since compost possesses approximately half the bulk density of a sand-based topdressing. Typically, in sports pitch topdressing applications, sand-based topdressings are applied at a 3, 6 or 12mm application rate, depending upon the requirements of the project and available funds.

Replacement Values

Taking into account the economics outlined in this articles text, the cost to use compost as a topdressing would be £1023 per hectare, or £102.30 per 1,000 square metres, when applied at an approximate 6mm application rate (or 62 cubic metres per hectare). When considering the potential fertiliser and fungicidal benefits of compost, and its value as a replacement for sand-based topdressing, the cost is 40 to 54% of a typical sand-based topdressing.

Relevant product costs are found in Table 1. They represent products used by many turf managers, and those which may be replaced if compost is used as a topdressing.

Table 1 - Relevant Product Costs

Product	General Costs	Area Costs
Sand-Based Topdressing ^a	£25 to £32 per tonne (estimated as £28.50 per tonne foreconomics)	£1767/hectare or £176.70/1,000m ²
Sand-Based Tee/Green Construction Mixes (used as Topdressing)	£15 to £20 per tonne (estimated as £17.50 per tonne for economics)	£1085/hectare or £108.50/1,000m ²
Compost (used as Topdressing) ^a	£16 to £17 per cubic metre (estimated as £16.50 per metre for economics)	£1023/hectare, or £102.30/1,000m ²
Fertiliser 1 ^b (containing controlled release nitrogen)	£1.25 to £1.30 per kg (estimated as £1.27 per kg for economics)	£381/hectare, or £38.10/1,000m ²
Fertiliser 2 ^b (containing quick release nitrogen)	£0.50 per kg	£150/hectare, or £15.00/1,000m ²
Fungicide ^c	£75 to £100 per litre (estimated as £75 per litre for economics)	£600/hectare, or £60/1,000m ²
Seed	£5 per kg (Dwarf Perennial Ryegrass)	£833/hectare, or £83.30/1,000m ²

- a Applied at 6mm, or 62 metres/hectare
- b Using nutrient examples from the text, compost with a nutrient ratio of 0.8-0.3-0.6 applied at 6mm layer, an Autumn 3-3-32 fertiliser (with controlled release nitrogen) or a 3-12-12 fertiliser (with quick release nitrogen) applied at 300kg/hectare.
- c Using Myclobutanol (at 8 litres/hectare) or Fenaramol (at 6 litres/hectare)

A detailed cost comparison can be developed using these estimated cost figures (see Table 2 and 3). This comparison illustrates that a compost topdressing can fulfill the function of three products normally used in the management of high quality turf (a physical topdressing, with fertilising and disease suppressive properties). To be fair, two scenarios are illustrated – one comparing a compost topdressing to more expensive products and one to lower cost products. Either way, these figures illustrate that compost used in a turf topdressing application may be able to fulfill a cultural and economic niche within the golf industry. And you will see, that the results will speak for themselves.



Going one step further as far as the economics, and using football pitch experience from the Northeastern region of the US, the use of compost as a sports pitch topdressing allowed the managers of the largest sports pitch venue in New England to reduce the amount of grass seed they used by two-thirds (Compost for turfgrass: multifaceted organic ally, Sports Turf Magazine, August 2005). Dwarf Perennial Ryegrass is commonly used on sports pitches in the UK. At an application rate of 167kg per hectare, the cost of treating a hectare would be £833. Even if the use of compost would decrease the application rate of grass seed by only fifty percent, that would further save the sports turf manager an additional £400 per hectare.

Table 2 – High Cost Comparison on a 1000m2 Basis

Product Costs	Sand-Based Topdressing	Compost used as Topdressing
Topdressing (using STRI/USGA approved tee/green topdressing)	£176.70	£102.30
Autumn Fertiliser (containing controlled release nitrogen)	£38.10	£0
Fungicide	£60	£0
Total Costs	£274.80	£102.30
Grass Seed	£83.30	£41.65
Total Costs (with grass seed)	£358.10	£143.95

Table 3 – Low Cost Comparison on a 1000m2 Basis

Product Costs	Sand-Based Topdressing	Compost used as Topdressing
Topdressing (using tee/green construction mix as the topdressing)	£108.50	£102.30
Autumn Fertiliser (containing quick release nitrogen)	£15.10	£0
Fungicide	£60	£0
Total Costs	£183.50	£102.30
Grass Seed	£83.30	£41.65
Total Costs (with grass seed)	£266.80	£143.95

Obviously, different cost figures and application rates could be used within the economic comparison within this paper, based on specific project requirements. That said, however, it is obvious that significant cost savings can be obtained through the use of compost in the management of golf courses.

Author:

Ron Alexander is president of R. Alexander Associates, Inc. (Apex, North Carolina, USA, Telephone: 001919 3678350, www.alexassoc.net), a company specialising in product development and end use for organic recycled products. Mr. Alexander is a horticulturalist with over 23 years of experience (six in the UK) working with compost. He has built golf courses using compost in the US and has worked with golf course superintendents throughout the UK.

The author would like to thank WRAP, Rigby-Taylor and the STRI for its support and assistance during the development of this article.

For more info on compost use, go to the WRAP website at www.wrap.org.uk

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INFORMATION IS POWER

Scott MacCallum learns how one golf club has purchased a full course survey package and is about to reap the benefits of what it has produced

As the saying goes, “Information is Power”. In essence it means that the more facts you have at your fingertips the more chance you have to be successful. Think back to the efforts that have been made to gather information. There was that famous first census, during King Herod’s time; Britain’s first ordinance survey map was published in 1801; every 10 years or so we are asked to complete a Government census, while Googleearth.com succeeded in the small task of producing a 3D map of the entire globe. The more information that people gather the more they can achieve.

It is precisely this philosophy, which has encouraged more and more golf clubs to have their courses professionally surveyed.

There are several types of surveys. There is the below ground variety which highlight soil structure and help to uncover drains long left undiscovered when the first course plans have been destroyed or lost. Then there is the above ground surveys which can help, as talked about in last month’s magazine, routing buggy tracks around courses and ensure slopes are not excessively steep.

These surveys are much more like your traditional ordinance survey map, although some can be virtually three dimensional, and allow accurate planning on course and course management issues to be carried out.

Like many things in life, though, you get what you pay for. A quality survey costs money and nowadays more than ever golf clubs must make its hard earned finances work as hard as is possible.

With that in mind any alternative benefits that can be generated from the initial survey could help to offset the cost would be hugely welcome.

Longniddry Golf Club, near Edinburgh, has recently had its course surveyed by Optimize Golf, and are just beginning to appreciate what it will do for them.

“It is early days for us, as we only took delivery of the full system in March,” explained Longniddry Secretary, Bob Gunning.

“We bought the survey for the course management system which came

with it and we looked at the commercial benefits as the icing on the cake,” he explained.

Those commercial benefits include course planners, pin placement cards, and web tours of the course. There is also the ability for a player to have his round and score marked out on an overhead picture of the golf course – great for a tournament winning, or course record score but perhaps not so desirable for your regular higher handicapper’s efforts!

“What it does give us is a much more professional look which is invaluable when it comes to marketing the golf course,” said Bob, adding that having the survey put Longniddry in the same bracket as Carnoustie and Muirfield who have also been surveyed by the same company.

As a members’ club Bob found that members who had paid for the survey through their membership subscriptions were reluctant to pay again for course guides, pin location cards and the hand held distance devices which can be rented or bought.

“As is probably common, members of golf clubs feel they pay enough for their golf and don’t like paying for anything else so I didn’t hold out much hope for them paying for the additional benefits and that is certainly how it has turned out so far.”

However, visitors are a different category and although the season is still to start in earnest Bob was confident that the club’s healthy visitor market will respond to the sale of the course guides in the pro shop.

“What we’d like to do is ultimately build the cost of the course planner and the pin position cards into the green fee and then give visitors a welcome pack when they arrive containing a course planner and pin card.”

He reiterated, however, that any additional business generated was purely bonus and that the main reason for going ahead with the survey was the benefit it brought to Head Greenkeeper, Philip Holmes, and the management of the golf course.

“I’m someone who likes things to be under control and to have things recorded properly and systematically. That’s what appealed to me about