

MICHAEL BIRD looks at  
some of the latest  
design ideas and  
innovations available to  
the turf professional

Requiring tractors of 16hp+, the trailed 1.2m (4ft) wide Litamina retains the unique Sisis spiral brush design and has a leading fixed brush which helps loosen and lift wet leaves and other flattened material. The hopper can be tipped without leaving the tractor's seat.

Collectors have been available for some time for use with mid-mounted rotary mowing decks, the majority relying on the draught created by the blades to move grass, leaves and litter from the deck into the collector. However, their efficiency is impaired significantly in damp conditions.

PeCo, distributed in the UK by Greenland, produce a range of diesel-engined vacuum collectors suitable for use with mid-mounted rotary mowing decks on compact tractors and with dedicated out-front rotary mowers from companies including Ransomes, Toro, Jacobsen, Ford, John Deere, Gravely and Kubota. Able to operate in conjunction with the mower or as a self-propelled grass, leaf and waste materials collector in its own right, the PeCo Lawn Vac system has a 6hp electric-start diesel engine direct driving an impeller which sucks grass and other material from the deck into a hopper. All auxiliary engine controls are mounted adjacent to the operator and the 18ft<sup>3</sup> (0.8m<sup>3</sup>) aluminium container can be tipped from the driver's seat.

Self-contained vacuum collectors were developed originally for use by turf producers, employing powerful suction and wide "hoover-like" heads to lift and remove damaging clippings from new and old growth. Over the past few years, there has been a rash of developments in this area to give these units greater versatility and wider appeal to the turf maintenance industry.

Available with capacities of 5.1 and 12.4yd<sup>3</sup> (3 9.5m<sup>3</sup>), Brouwer's BV 138 and BV 85 trailed units from Turfland are designed to work behind tractors of 20 and 35 pto hp respectively. Features include flotation tyres, strong lightweight construction and a low power requirement, minimising tractor size and weight and possible surface damage. Both models have floating suction heads to follow contours accurately, important if maximum vacuum is to be maintained. The suction produced by the powerful fan (dual impellers on the smaller 8V 138 machine) is said to be able to handle debris ranging from thatch from vertical mowing to grass clippings, leaves, paper, cans and hollow corings. Options include a suction hose attachment, enabling the operator to remove debris from greens, tees and other areas where the machine cannot gain access.

Also from North America comes the two model Tuff Vac range, distributed by Turfmech Machinery. Available in 4.5 and 8yd<sup>3</sup> (3.4 and 6.1m<sup>3</sup>) capacities, the two machines have moving



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bed floors for unloading and fully-floating suction heads. An option offered by Tuff Vac not available on the Brouwer machines is a rotary brush for the suction head. However, Turfmech says that the brush option

accounts for only 10% of sales in the UK. The reason given is that the brush reduces working speed and limits the overall pick-up width, although it is claimed to be good for lifting wet leaves. For scarifying, both Turfland

and Turfmech prefer a separate operation ahead of the vacuum collector, this being faster and cleaner, they say, eliminating any risk of reseeding detached material.

The Tuff Vac range comes with 5ft and 8ft (1.5m and 2.4m) suction heads, the smaller model also being available with an auxiliary engine-driven fan for use behind turf vehicles and other power units without a pto or with insufficient horsepower.

Also developed originally for turf growers is the Dutch-built Trilo vacuum sweeper range from MJT Contracts. On the 11m<sup>3</sup> Clean Sweep, the company offers a three section scarifier attachment which operates in front of the floating 2m suction head, giving it excellent ground-following characteristics. A powered brush is available as an option and the machine has a cab-controlled wander hose as standard. The 4.5m<sup>3</sup> capacity Trilo Mini Sweep has a brush fitted as standard to its floating head 1.5m vacuum head. Alternatively, it can now be equipped with a scarifier. This model features high-tip emptying and is suitable for tractors of 35hp plus. New from the company at this year's IoG exhibition is a 7m<sup>3</sup> machine aimed, says Trilo, at the golf course user. Requiring tractors of 35hp, it has as options a 2m sweeper head and a scarifier. Unloading, like its bigger brother, is by moving floor.

One rare development in the machinery market is a reduction in price. However, Landtec Products say they have been able to cut the cost of their Promark 1050 Vacuum by more than 30% thanks primarily to revisions in production methods and cost-

**1 The Brouwer BV-85 Vacuum has an 8ft suction pick-up head a standard. The 12" diameter wander hose is spring-balanced**

**2 Holding up to 8cu yd of material, the Tuff Vac 8000 has a two section suction head, moving floor unloading and dual wheels on independent hubs to eliminate scuffing on turns**

**3 PeCo Lawn Vac system provides suction collection on out-front rotary mowers**

**4 The Charterhouse Turf Tidy includes a gutter brush and wide-angle pto for work in tight corners**

# A clean SWEEP

ings by Ariens, the new owners of Pro-mark machines. The unit, which was developed initially to collect de-tached material on Californian golf courses, is completely self-contained having an 18hp petrol engine, 1.5m suction head and 3m suction hose attachment. It can be towed by virtually any power unit, has a 3.8m<sup>3</sup> hopper and, in deference to pollution control regulations, runs on unleaded fuel.

For all-round versatility, there are few vacuum sweepers which can surpass the features offered as standard on the British-built Grandsweep range from Ryetec. The company markets four trailed models with capacities from 1.75m<sup>3</sup> to 8m<sup>3</sup>, suitable for use with tractors from 15hp to 5hp. All are equipped with Goodyear Terra Tires and have pto fans and hydraulically-driven sweeping/scarifying brushes on fully-floating headers incorporating powered lift and height-adjustable wheels.

Wander hoses are standard on all machines which tip hydraulically for unloading. A further benefit is that the wander hose can be connected directly to a mid-mounted mower deck for powered grass collection. An optional gully brush is available for use on hard surfaces.

A powered gully brush and scarifier are offered also by Ransomes to extend the working versatility of its three ranges of conventional sweepers which come in pedestrian, trailed and ride-on versions. The top-of-the-range

1500 can be specified with an optional water sprinkler system for dust suppression.

Significantly reduced noise is claimed for the new Billy Goat VQ801HP outdoor sweeper from Bob Andrews Limited, making it ideal for work close to golf hotel and resort complexes. The secret, says Ken Salt of Andrews, lies in the use of a new computer-designed impeller which can operate with high efficiency at slower engine speeds. The result is less noise, engine wear and fuel consumption. Self-propelled, with an optional tow-behind "chariot" for the operator, the sweeper has a Honda 8hp petrol engine, 30in vacuum pickup and 8.7ft<sup>3</sup> (0.25m<sup>3</sup>) bag capacity.

Said to be the quietest unit currently available, the hand-held Sabre BLV25 Blower/Vac from Hemming and Wood is powered by a 25cc petrol engine producing just 70 decibels at 50ft.

Finally, available with a choice of interchangeable sweeping, scarifying or flail heads, the trailed Charterhouse Turf Tidy, has a 5ft (1.5m) working width and is suitable for use with tractors from 20hp upwards, according to the job being carried out. Tipping of the 2.2m<sup>3</sup> hopper is hydraulic with a tipped clearance of 5.25ft (1.6m). To minimise the risk of compaction, the machine runs on dual rear wheels. Options include a gutter brush and wide-angle pto for use in tight corners.



An engine-driven fan on Promark's 1050 Vacuum provides suction at a 1.5m pick-up head or through a 3m wander hose



Ground clearance and brush pressure are controlled hydraulically on the Ransomes 2000 trailed sweeper. A scarifying reel is optional

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When the motor car buyer purchases a Lada, can he expect Lamborghini performance and quality? Of course not, it's a foolish question: the difference is chalk and cheese!

It is surprising then, that many would-be purchasers of top dressing for use of fine turf playing surfaces approach the whole subject with a Lada mentality. Perhaps the comparison is unkind, for the Lada does at least have merit within its defined marketplace and there are thousands of satisfied users. What is beyond argument, however, is that those who beat a path to the door of the cheapest source of top dressing are stepping into a minefield.

To answer the sort of questions that ought to be asked but are often overlooked or ignored, I spoke to Tim Banks, managing director of Fen Turf Dressings Ltd., long time manufacturers and suppliers of Fendress™, used on many championship courses.

Let us first look at what we mean by top dressing. In essence we are referring to the application of a bulky medium prepared specifically for the purpose of improving the playing surface, which will (or should) have the ability to deliver the following benefits to surfaces that have been subjected to golfers, maintenance procedures, weather extremes, diseases and insect attacks. Frequent top dressing applications will ensure :-

- The levelling off of the playing surface to ensure smoother, faster, firmer and more accurate putting conditions for a rolling golf ball.

# TOP DRESSING

## What it is ● What it does

- The building up of an excellent growing medium for the future.
- The ability to assist in improving poorly drained areas.
- The ability to improve drought resistance (depending upon the make-up of the compost).
- The application of a product which contains small amounts of plant food value which reduces the need for artificial feeding.

Having established the need for top dressing (and there surely can be none who doubt its efficacy?), the recommendation is one of little and often during the season of growth rather than one heavy application which smothers grass cover.

Next must come a further decision, to buy in or prepare one's own? It will not surprise the reader to learn that as a manufacturer Tim Banks is biased in favour of the latter, but as he points out, the facts speak for themselves.

"The Club thinking of preparing its own top dressing", he says, "must consider that it is an expensive and

essentially long-term business unless they are already geared up specifically for the purpose - this includes the purchase and installation of costly machinery and a storage area that is suitable for both preparation and storage of the finished product. Furthermore, unless considerable quantities are required, say for a huge complex, the capital outlay makes in-house preparation hard to justify. This, coupled with the need to establish an impeccable and continuous supply of suitable base material to produce a good compost, makes it a doubtful proposition. There is also the convenience factor, for personnel employed on such work must be properly costed into the overall expense: no-one works for nothing!"

In talking essential quality, and making the valid point of an often in-built resistance to accept quality before considering price, the question asked most often at Tim's company (and I'm sure his company is no isolated exception) is invariably

'how much?' - only rarely is the question posed 'what does your top dressing contain?'.

I find this puzzling and must fall into agreement with Tim when he declares "Quality putting surfaces deserve a quality top dressing. Surely the most important question should therefore be 'what are the constituents; tell me the ratios of materials and the analysis of particle size; what is the pH; how low is the clay and silt content?'".

So what makes a good top dressing? Tim's opinion is that it should be - indeed must be - a free-draining material from a constant source (very, very important) which contains minimal clay and silt particles. Heavy loams containing large proportions of clay must be avoided at all costs, for such clay content will increase compaction, reduce drainage potential and increase rather than stem ball bounce. To this free-draining substance must be added a lime-free, washed silica sand of the right shape (rounded to sub-angular) and with the correct particle range. Sand quarried from the Leighton Buzzard area in Bedfordshire is particularly famed for containing these desirable properties. It is considered unwise to use soft, local sands, especially those which have a content containing lime, for this will increase alkalinity, a negative factor. The finished product should be neutral to slightly acidic, for this will encourage desirable finer grasses such as Festuca and Agrostis. Any mixture which is alkaline will produce in abundance the one thing that greenkeepers

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297

# TOP DRESSING

abhor – the weed grass *Poa annua*.

If all this isn't enough, the greenkeeper should heed another note of caution: use of materials which are too fine will almost certainly produce layering of the surface which will encourage, at best, hydrophobic conditions and at worst a total capping of the growing medium.

The exact proportion of each ingredient in top dressing can be determined by ground conditions and that degree of excellence which the greenkeeper seeks to achieve. In Britain, sandy dressings are considered preferable in assisting drainage and for their ability to rapidly integrate into the soil. Remembering this, the greenkeeper should establish (by soil testing, if necessary) his existing soil texture and seek a top-dressing which has similar characteristics. The problem of 'layering' will decrease if the top dressing mix is consistently close to the particle size of the existing texture.

Finally, one other important function of top dressing is the biological control of thatch. In time, thatch is decomposed by microbes living in the soil and the action of top dressing, especially when filling core holes, brings soil into contact with the thatch and speeds up the decomposing process.

Popular mixes today, according to Tim, are 70%/30% and 80%/20%, the higher percentages being sand, the lower Fensoil. These allow light and regular top dressing to be

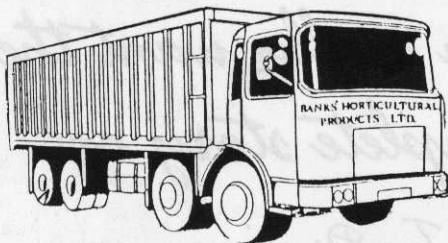
applied throughout the playing season to achieve maximum effect.

The golf market in top dressing is competitive, often to the point of foolishness, of companies working for peanuts. I don't profess to understand the motives behind such business transactions but appreciate that which has been said before – nobody works for nothing. What I do understand is that for many, price is an important consideration and this blinkered mentality results in an awful lot of highly suspect junk being foisted upon the unwary. Should price alone be the prime consideration or indeed the overriding factor? Let us look at a way of comparing like with like. The cost of a visitor green fee at a popular Club – my own Club – is now over £25. Eight years ago the cost was under a tenner. The cost of high quality top dressing material eight years ago was around £20 a ton, today it is around £25 a ton. As an inflation buster and measured against the cost-of-living index, it can be seen in real terms that cost has actually decreased! Put into perspective, nothing is worse for the long-term effectiveness of your greens than the application of an inferior product.

If there is a message here it is one of caution: you only get what you pay for. For once the computer world has the perfect one-liner to sum up that philosophy. Heed it well: RUBBISH IN – RUBBISH OUT.

• David White was talking to Tim Banks.

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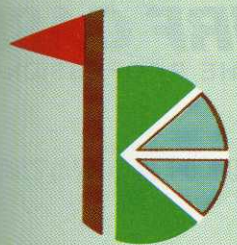
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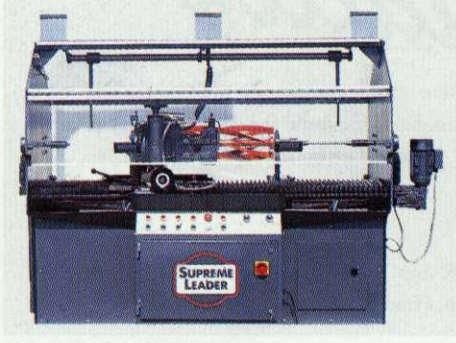
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# TRADE TOPICS



■ The Aardvark, seen recently on trials at Eaton and Royal Cromer, is the culmination of three years of research and development by Anglia Soil Restructuring Ltd. The third prototype has brought the machine to its present highly developed state, built upon its own chassis with twin axles and running on softac tyres, the widest tyres available for their diameter. The weight of the Aardvark has always been an important design feature and ground pressure is claimed to be less than the human footprint.

The injection probe, rear mounted to avoid running over treated ground, inserts a 20mm diameter probe into the ground and releases compressed air at varying depths from 250mm down to 1 metre, depending on the levels at which the machine is required to operate.

It may be necessary to make multiple releases of compressed air at several depths if there is more than one compaction layer, for irrigation sedimentation, compaction, anaerobic peat layers, iron pans and poor drainage may occur as multiple situations that require aeration at different depths. Washed and graded Silica sand 2-3.5mm in diameter is recommended for long term aeration and drainage. The average sized green can be dealt with in minutes rather than hours and is ready for play without further treatment. Details: Tel: 0603 404367.

■ A major new development in barrelled oils storage has been launched by Dee Bank Engineering Ltd. The banded store complements the popular Saferite range of flammable and hazardous substance storage vaults.



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■ John Deere has appointed two further companies to its expanding grounds care equipment dealer network. They are Balmers Garden Machinery of Burnley (tel: 0282 53900), and A J Scambler of Hemingford Abbots, near Cambridge (tel: 0480 495909).

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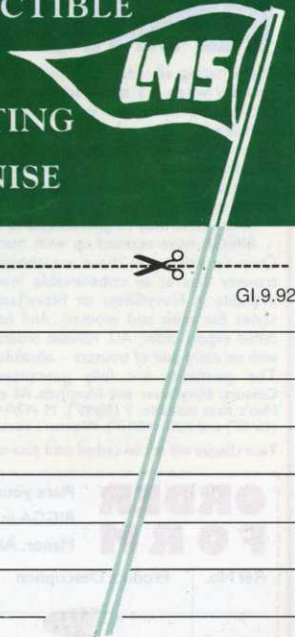
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# Too good to be true

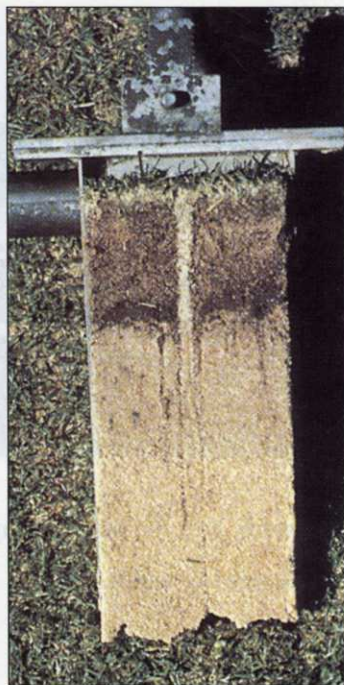
Here we go again! Calls and letters are coming in from people or about people who are going to build pure sand greens (using a uniform coarse sand, no less) instead of USGA specification greens because of some article they read recently in a widely distributed turf publication. And why not? After all, the article says that all-sand greens are easier and cheaper to build... nice and simple. All the complicated, high-tech, unnecessary, costly steps have been eliminated. No need to worry about today's inconsistent organic materials, or about gravel drainage beds or intermediate coarse sand layers.

Worried about water retention? Just mix some water-absorbent polymers or other unproven inorganic amendment into the top few inches of the sand profile, place the whole 12" rootzone on top of the existing soil base with some drain lines installed in it, and grow healthy, carefree turf.

Revolutionary, you say? No, it isn't. Sounds too good to be true, you say? Yes, it is!

There's usually a price to pay for taking a shortcut, and hundreds of greenkeepers (and their Clubs) around the world have paid a high price for taking the 'easy' way with pure sand greens and untested modifications. Our experience tells us this:

- Pure sand greens built without a perched water table are often extremely droughty and experience severe dry spot problems.
- There is no buffering capacity in pure sand greens, and wide shifts in pH can occur very quickly.
- Pure sand greens often require extremely high rates of fertilizer during establishment and for several years thereafter. Rates as high as 30-40 lbs. N/1000 sq. ft. or more per year have been reported. Potassium, phosphorus, and micro-nutrients also must be applied more frequently and in greater amounts.
- Disease problems often are much more severe on pure sand greens. It is a medium with extremely low microbial activity and offers almost no resistance to take-all patch, root pythium, and other root diseases.
- Lateral movement of water through the sand rootzone to



The grow-in layer on a pure sand green can cause layering problems that eventually lead to black layer

drainage tiles may occur very slowly in some sands, resulting in wet areas between tiles and dry streaks over the tiles.

- Pure sand greens often are harder and less resilient than modified rootzones. Surface wear and root and shoot damage occur more readily, particularly with sharp sands.
- According to work by Dr. James B. Beard, pure sand rootzone construction has a significant negative effect on root hair development and maintenance compared to a properly mixed rootzone.
- Greens built of unmodified, round sands that fall in a narrow particle size range are unstable. Footprinting and tyre tracking can occur for years after construction.
- The grow-in layer of sloughed-off root organic material on pure sand greens is often quite dense. This layer can create a perched water table in the top 3 to 5 inch zone, and black layer frequently results.

As far as adding water-absorbent polymers and other unproven inorganic amendments into the top several inches of the profile is concerned, this is nothing more than gambling with other people's money and the greenkeeper's job

security. The Green Section specs are based on decades of field experience and university-based research. Unproven alternatives should not be promoted until thoroughly researched and field tested.

Proponents of pure sand greens and other 'fast and easy' methods suggest that the golf Club hire itself a good greenkeeper, since a top greenkeeper can grow grass on anything, including concrete. This is a cop-out! Lousy construction eventually begets lousy turf. The Club often pays big bucks to get out of the mess and the greenkeeper often pays with his job.

Last, but not least, how can the golf industry accept pure sand greens - or any other method - that requires extremely heavy use of water and fertilizer? It's environmentally irresponsible. Who wants to be first to be challenged about what happens to 40 lbs.

N/1,000 sq. ft./year applied to a droughty, pure sand rootzone?

Space in this column does not permit a thorough rebuttal to all of the misleading statements used to rationalize pure sand greens and other untested methods. The fact is, USGA greens offer the best compromise to allow a green to drain properly and to resist compaction while holding reasonable amounts of moisture and nutrients for plant growth. Don't be fooled by anyone into thinking that greens can be built easily and cheaply without having to pay for it later with interest. Pure sand rootzones and their untested modified versions should not be encouraged or condoned.

■ The author, James T Snow, is National Director, USGA Green Section. This article first appeared in volume 30, No 4 of the USGA Green Section Record and is reproduced here with due acknowledgement and thanks.

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