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The Cutting Crew

Roland Taylor looks at the myriad of non-grass cutting machinery which is on the market at the moment and gives some useful advice on what to look for before buying.

Keeping a course looking immaculate at the turn of the century (not the last one!) must have been a greenkeepers nightmare. There would have been very little mechanisation in the machinery sheds to make life easier. As most of the work was done by hand it required a great deal of skill to achieve the results members in those days expected. Labour was relatively cheap, but one suspects, that most clubs kept their grounds maintenance staff to a minimum and on a tight budget. Thank goodness for man's inventiveness in coming up with mechanised solutions.

A walk round BTME or SALTEX reveals that for virtually every task there is now a powered unit available to carry it out. This is great, but as often happens, companies see an opportunity and suddenly the choice becomes overwhelming. It then becomes a question of sorting out the wheat from the chaff and to do this you are in a better position, if you are aware of exactly what goes on under those bright shining covers. Hopefully, by the end of this feature, you will have some ideas regarding hand-held power equipment now on offer.

TRIMMERS/BRUSHCUTTERS AND CLEARING SAWS

These are not the same machines although some models will take different cutting heads.

TRIMMERS

George Ballas was bored, he had nothing to do and there was no sport on the telly, so, he went into his garage in Houston, Texas, and cobbled together an electric lawn edger, a popcorn tin and some fishing line. "What's that for?" cried his neighbours. "Cutting grass", he replied. They fell about laughing, but not for long. The trimmer had arrived. George called his invention a Weed Eater and went on to sell millions throughout the world.

This type of machine is designed, mainly for cutting grass, although they will deal with light vegetative growth as well. Trimmers are generally, electrically powered and sold mainly to domestic customers. Some companies offer petrol engine units, but like their electric counterparts, they are mainly bought by the man in the street.

BRUSHCUTTERS/CLEARING SAWS

The brushcutter and its larger cousin, the clearing saw, evolved from the chainsaw and were first used for forestry work. As their name implies the brushcutter was developed for clearing undergrowth and tall vegetation. The clearing saws harvested saplings and small trees. Interchangeable cutting heads were introduced at a later stage to provide more versatility.



ENGINES

In the past, the two-stroke engine has proved the best. This is about to change in the next few years, because of regulations regarding exhaust emission. The engine as we now know it, will no longer be available. Its replacement is likely to be a mini four-stroke power unit. However, man's ingenuity is coming to the fore and some variations on this principle are beginning to surface (more information on the latest developments will be covered over the next few months).

Any system that relies on a constant speed, to achieve satisfactory results, requires the availability of extra power when it is needed, so engine output is critical. Certainly, you have got to be looking at least a 25cc rating for a professional application, higher if possible. Below this level the machine will be under powered, especially in long, wet grass or thick stemmed undergrowth. This situation is dangerous and can seriously damage the brushcutter.

CLUTCHES

On some cheaper models the drive is direct from the engine to shaft. If this type of unit is used in heavy conditions then either the drive shaft or engine is likely to be damaged.

Virtually, all brushcutters have some form of clutch that is there to act as a safety feature. It ensures that when an engine is ticking over and not under throttle, the drive shaft is disengaged. This reduces the possibility of an operator coming into contact with a moving cutterhead and also means the engine does not have to be switch off when walking between sites.

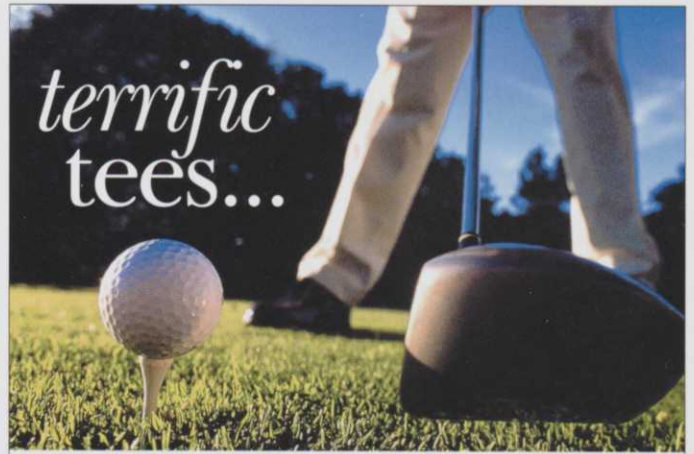
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The Cutting Crew

A throttle can come 'off adjustment' so the engine does not slow down sufficiently to stop the blade assembly spinning. From a Health and Safety point of view, if this happens the machine needs to be correctly adjusted, as soon as possible.

SHAFTS

Apart from engine sizes and cutting heads, one of the most important components of a trimmer, brushcutter or clearing saw, is hidden from sight, this is the flexible drive shaft.

These can be made from flexible steel and consist of either a soft steel rod or a wire core encased in a coiled wire sheath. This type of drive is okay for light work, but it can unwind, or in some cases break, if placed under a heavy load.

For heavy-duty work the answer is a solid straight shaft made from high carbon steel. These will absorb the twisting forces that are created, in certain conditions and because there are no joints where stress levels can build-up the chance of a breakage occurring are less likely. The shaft is supported at intervals throughout its length by rubber mounted, brass bushes, which also help to absorb vibration. Another advantage is this type of shaft is that they are longer, so produce a wider cutting area.



VIBRATION

A brushcutter is often used for fairly long periods. Excessive vibration will cause damage to the operators hands and arms, Health & Safety issue guide lines on this subject. With a larger brushcutter there is an increased possibility of twist and kick from high impact loads. This will also become very evident if the blade becomes blunt. Quality machines have built-in shock absorbers to minimise this problem. As these are likely to vary between models, it is a feature that requires particular attention when buying a unit. Another thing to be on the look out for, is how the fuel tank is mounted. If it is screwed directly on to the engine block, due to vibration, the bolts can damage a plastic tank. The best method is where the tank is situated underneath the engine away from the exhaust and held in place by anti vibration, elastic straps.

CARBURETTORS

Whatever the salesman says, a diaphragm carburettor, with a sliding throttle valve, is the best, for working at virtually any angle. These produce a constant power output over the whole rpm range, especially at the lower end where fuel/air mixture can sometimes be effected.

HANDLES

When it comes to a choice of handles it has to be the dual type with foam grips. The blade head is travelling at over 8000 rpm, if it comes into contact with something solid the machine is going to take some holding. In addition, they give the operator more stability on rough ground and an easier swinging action when cutting.

CUTTING HEADS

A brushcutter usually comes fitted with a nylon line unit. This will have a built in carrier, which has either manual line feed, or a semi-automatic system that is activated by tapping the head on the ground.

The correct diameter and weight of line should always be used, if it is too heavy, then overloading will occur. This drastically reduces the speed of the head and the line can then become entangled in vegetation and the chance of the clutch shoes burning out is greatly increased. The quality of cut will also be appalling.

When buying nylon line always go for quality, rather than price, it will give longer service.

In a new brushcutter's pack there are, generally, some metal blades. These can be used for other applications than grass cutting. A blade with eight cutters is ideal for taking down dead, dried weeds and rushes, whilst a shredder/brush type is for working on areas of tangled grass and undergrowth. The circulars saws are best suited were bushes, saplings and trees are predominant.



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BACKPACKS

Brushcutters are usually handheld units, but some manufacturers also offer backpack models. These are designed for working on steep slopes, ditches and embankments. The engine is carried on the back, like a rucksack and there is a flexible drive between the power unit and shaft. They are said to reduce operator fatigue and make it easier when working over difficult terrain.

EDGING MACHINES

You often see the visual effect of a finely cut expanse of turf, marred by uncut edges not usually on golf courses, I hasten to add. Edging has traditionally been done with shears, but this method is a very time consuming operation. Using a machine is a far quicker and more cost effective, there are a number of these now available. They are basically a rotary blade, mounted vertically rather than horizontally. There is some form of guide, with a depth control, that runs along the edge and they are mostly pushed units on either wheels or rollers. An edger will trim bunker's surrounds and the sides of paths in a matter of minutes. On some models the angle of the blade can be altered to deal with any feathers of grass against walls and other obstacles. A few companies are now offer an edging attachment to fit on some of their specially designed trimmers and brushcutters.



ROTARY BROOMS

These come as complete units or an attachment, as part of a system. They look like a brushcutter with a horizontal drum, that incorporates flexible fins, that are designed to work on turf, without causing surface damage. On golf courses they can be used for keeping tees, fairways and greens clear of debris. Raking and grading the sand, or simply brushing it back into bunkers, are other tasks they will perform. In addition, these power brooms or sweepers are used for removing aeration cores, sweeping up leaves and cleaning paths and car parks. In the winter they are ideal for clearing snow and mud of hard surfaces.

POLE PRUNERS

When it comes to chainsaws unless you have a qualified operator on the staff, any work involving these is best left to a tree surgeon or arboriculturist.

However, over recent years pole pruners have been introduced. These consisting of a small chainsaw attached to a telescopic shaft, and depending on the make, will deal with branches as high as 5 metres from the ground. A major benefit of these, is the operator does not have to climb ladders, so it can be a one-man job. They are particular useful for dealing with storm damaged or dead branches that may be a hazard, especially, over walkway and paths. Some companies also offer a long-reach hedge cutting attachment for their pole pruners, these are the answer when it comes to shaping and trimming large bushes and ornamental shrubs.

WHAT TO WEAR

Like all other machinery, in the interests of safety, there are set rules that apply then using any handheld units. The operators kit should include; safety helmet, the correct footwear, ear protectors, gloves and a full-face mask rather than goggles. If a chainsaw is being used then the Health & Safety Executives Protective Clothing Recommendations should be worn. At all times it is necessary to follow the guidelines on safe use of the equipment. This is usually found in the manuals or paperwork supplied with the machine.

WHAT TO BE ON THE LOOK OUT FOR WHEN BUYING

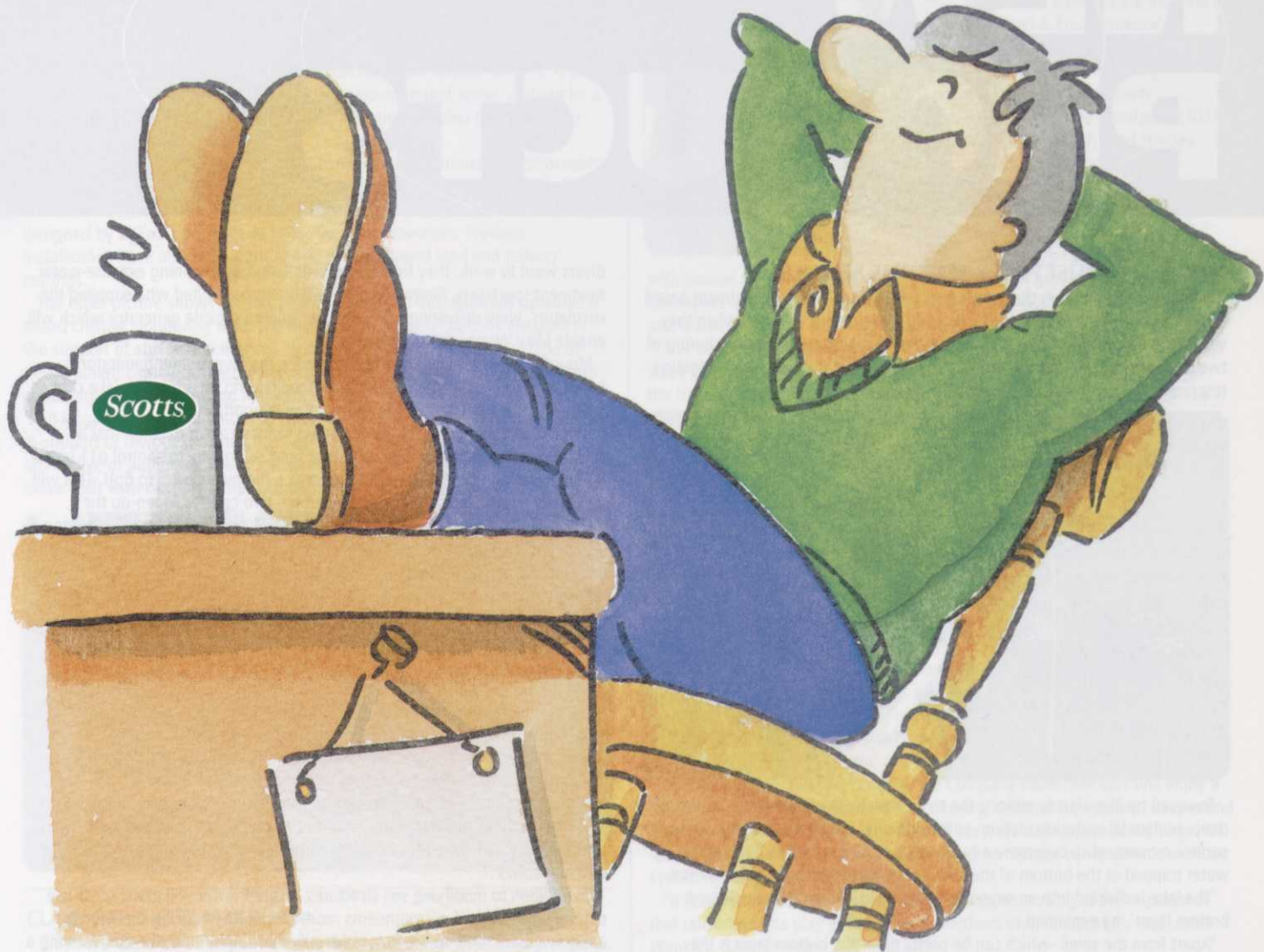
Power-to-weight ratios are an important feature bearing in mind how long a unit is likely to be used. The figures in the literature are fine, but are only a guide. The best way to find out if a unit is not going to cause fatigue problems, is to test it, for at least an hour, in the conditions it will normally be encountering. If, after this period you are not flat on your back or aching from every joint, it could be the model for you. This type of trial will also throw up other things, like how hot the engine gets and the effects on its performance. One suggestion of a good way to carry out this evaluation is the actually hire a particular machine before buying.

There are literally hundreds of models to choose from, so look at specifications carefully, checkout price comparisons, warranty periods and the reputation of both the manufacturer and the company who will be supplying the machine. After sales service and availability of replacement parts are two other important areas to take into consideration.

With so many different models available its advisable to follow the above suggestions to ensure you are buy the right one that meets your specific needs and will give you long reliable service.



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NEW PRODUCTS

ARMY'S SPECIALIST PORT & MARITIME REGIMENT

Five divers, drawn from the Army's specialist Port & Maritime Regiment based at Marchwood, near Southampton, recently created quite a splash when they visited the East Sussex National GC, to assist with positioning and anchoring of two bottom circulator units in one of the club's four lakes used as an irrigation reservoir.



Powered by 3hp electric motors, the two circulators were installed to provide deep, horizontal water circulation -with additional 'up-flow', creating bottom to surface movement-to overcome a build-up of problems caused by anaerobic water trapped at the bottom of the lake, said Course Manager, Mike Watton.

'The lake is divided into an oxygen rich top layer and an oxygen starved bottom layer', he explained.

'Apart from the smell -which can be pretty grim- the bottom layer is the source of troublesome algae growth both in the water and in turf under irrigation. The circulators will help cure this by inducing oxygen deep down into the depths.'

But the circulators are only part of a long-term strategy designed to improve the quality of water held in all four of the club's lakes. As the Army

divers went to work -they treated the installation as a training exercise-water treatment specialists, Ringwood based Hydroscape Limited who supplied the circulators, were delivering a Sweetwater sulphur dioxide generator which will enable Mike Watton to adjust pH levels.

Mounted on a specially built flatbed trailer, the Sweetwater generator is being used to treat water in three lakes feeding into the irrigation lake cum reservoir, prior to watering selected parts of the golf course.

'We looked at various options -including fountains- but decided that a sulphur dioxide generator was the better (and safer) way to control p11 levels in the water. Ideally, we are aiming to reduce the present 8.5 to 6pH. This will ultimately flocculate soil particles around the two courses, open-up the sub-surface, improving moisture absorption and drainage, said Mike Watton.

'Yes, it will take time-probably 12 months- before we see real benefits both in water quality and improved (turf) growth. For me, it is an interesting and exciting prospect. Side benefits? According to my calculations, treated water will reduce run times -and equally important, consumption- by some thirty percent This in turn, will enable me to save an estimated 40% on electricity used to power the irrigation system. These are impressive figures'.

Adding his own thoughts on the subject, Hydroscape managing director, Peter Roberts, said that the introduction of the Sweetwater sulphur dioxide generator will, when the unit's potential is more widely recognised by green-keepers and groundsman, revolutionise fine turf irrigation techniques.more

'Designed as an add-on to existing (irrigation) systems linked to water abstraction sources like boreholes, ponds and lakes or plumbed-in to reservoirs and storage tanks, the generator enables turf managers to modify and control pH levels in water stored for irrigation purposes, and subsequently absorbed into root zones'.

'In addition to modifying soil structures, treated water will assist grass use natural nutrients and micronutrients more efficiently -reducing the need to apply fertilisers- and, as a bonus, adds solvable sulphur into the soil, forming a fourth major nutrient'.

'The sulphur dioxide generator not only reduces the growth of surf-ace algae, it prevents expensive irrigation pumps, valves and sprinklers becoming clogged by water borne fungus'.

For further information tel: 01425 476 261

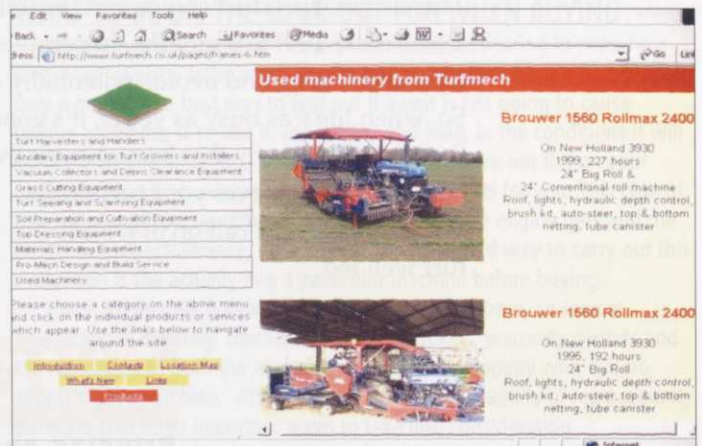
QUALITY USED MACHINERY AVAILABLE ON THE WEB

An impressive line-up of quality pre-owned equipment for use by turf growers, groundsman, contractors and greenkeepers can be viewed in confidence and at leisure by logging-on to the website of Staffordshire-based manufacturer and supplier, Turfmech Machinery.

Located within the Products and Services section of the Turfmech website at www.turfmech.co.uk, the used machinery page can be accessed also via the following direct link: www.turfmech.co.uk/pages/used-equipment/used-machinery.htm

Updated whenever a machine is bought in or sold, the used machinery section of the Turfmech website includes both ex-demonstration equipment and items bought by Turfmech in part-exchange against the supply of a new piece of machinery. From time to time, the used machinery section will also have details of a machine which Turf mech is offering for sale on behalf of a customer.

All of the equipment shown on the website is accompanied by a brief description and the majority will also feature a photograph showing the actual item "in the flesh". Customers have the choice of buying a selected machine "as seen" or with the benefit of a factory-backed warranty, following a thorough inspection, service or overhaul by skilled Turfmech engineers. Price of a specific used machine is available from Turfmech on request, depending on the purchase option selected.



2iC – INTERNATIONAL IRRIGATION CONSULTANTS REDUCE WATER COSTS WITH WINTER WATER

Irrigation efficiency is normally measured in terms of the amount of water used by an irrigation system compared with the amount of water benefiting the turf. But this does not relate to cost.

In order for financial efficiency to be demonstrated it is necessary to reduce the unit cost of water. Irrigating with mains potable water is obviously the most expensive method of irrigating, but how many irrigators know that the unit cost of water abstracted in the summer is exactly ten times that of water abstracted in the winter? Winter water, especially from surface streams, is also often of a better quality than high pH, calcareous ground water, and can be a much more reliable prospect for long term irrigation supplies than any other water supply.

Designing flow monitoring systems, carrying out environmental assessments and applying for abstraction licences are in-house specialities of 2iC. Spalding Golf Club had a winter storage reservoir built during August 2002. This was designed by 2iC as a tailor-made fit for the site parameters. Previous installations have also been designed to fit odd shaped land and railway cuttings.

The other picture shows 2iC has also designed and automatically operated a broad crested monitoring weir. The flow data from these stations are used in the support of abstraction licences by 2iC. Having each progressive stage of development carried out by the same team of irrigation professionals, ensures continuity, reduces costs and maintains quality.

All irrigators should monitor the efficiency of their irrigation systems, not least in support of their next abstraction application, but by also considering alternative or additional sources of abstraction, they can help the environment, make their water supply more secure and they can save money.



CLAYMORE GRASS MACHINERY

Claymore Grass Machinery continue to build their range of Yanmar products with the introduction of the Ge22 and Ge28 out front rotary four wheel drive mowers.

These tough, reliable machines have been designed for the professional user where reliability is the key word and ease of maintenance essential.

The Ge22 is powered by a 3TNE74 Yanmar 22hp 1006cc engine with a 28 litre fuel tank.

Hydrostatic drive and rear wheel steering means maximum manoeuvrability and a forward speeds of up to 14km/h are achievable.

Cutting width is 1220mm (48in) from a side-ejection three blade deck that can be flipped up to the upright position without disconnecting the drive shaft for easy servicing.

Safety is a prime consideration with a roll over protection bar as standard and automatic four wheel drive system ensure sure footing in even the worst conditions.

Hydraulic power steering and high backed seat provides operator comfort.

The Ge28 has most of the features of the smaller cut unit, but is powered by a 28hp 1330cc 3TNE82 Yanmar engine and has a 1520mm (60in) cutting width.

The Ge28 also boasts cruise control and tilt steering handle with weight adjusted seat and arm rest and pit stops are few with a 50 litre fuel tank.

Claymore Grass Machinery believe the smooth running, performance and reliability of these new models will be of great interest to the professional user facing ever increasing costs and demands in this highly competitive section of the market.

For further information Tel: 01865 820731



TURF ROLL

Turf roll shelf life can now be extended thanks to the emergence of new 'stay green' grasses being developed by the British Seed Houses turfgrass breeding programme based at the Institute of Grassland & Environmental Research (IGER).

Hosting a grass breeding workshop for Turf Grower Association (TGA) members at IGER last month, British Seed Houses amenity seeds manager Jon Chippendale claimed the turf industry was on the threshold of new era.

"IGER trials comparing So-Green with normal turf have clearly demonstrated that turf growers and landscapers can expect better keeping quality, reduced yellowing and improved summer and winter greenness from turf based on 'stay green grass', he said.

"We are already fielding a large number of consumer enquiries for grass that stays green all year round, but the practical growing and storage benefits to the turf industry are significant too. So-Green — based on the new ryegrass AberNile — combines the sought after 'stay green' benefit with all the other desirable requirements for high quality turf, namely high shoot density and resistance to wear. In addition, AberNile is very resistant to crown rust."

For further information tel: 01925 654411

FIELD SCIENCE LTD

Field Science Ltd, specialise in re-dressing the balance of trace elements in soil. Based on soil analysis, the Company creates tailor-made dressings to replace those vital trace elements missing from so much of the UK soils.

"So little is understood of the importance of trace elements and their vital role in creating a healthy growing environment for grass plants. Without the correct balance of trace elements, nutrients are 'locked-up' and not available for uptake by the plants - a situation usually aggravated by the excessive use of artificial fertilisers in a bid to induce growth and colour of the award," said Martin Lane, Technical Director,

By correcting the nutrient balance, the Company claims the user will enjoy a denser greener sward, with increased tillering, reduced top-growth, deeper and broader rooting, faster repairing tees and fairways and improved drainage. Of special importance is the increased resistance to disease as the plant's immune system improves.

"It is essential that greenkeepers have an understanding of the importance that micronutrients play in the growing medium of their courses", said John Wanklyn, Sales Director.

The Company offers a free course visit and appraisal. For further information or to arrange an advisory visit please contact Field Science Ltd, Downview House, Grove Avenue, Coombe Dingle, Bristol BS9 2RN Tel: 01170 856 550 Fax: 0117 900 2432 Improv.fieldscience.co.uk

RETONA LTD

Recently introduced to the UK by Glasgow-based Retona Ltd, ComCat® is a low cost and easy to use grass strengthening agent, which improves root development and gives better colour. Extracted from non toxic wild plants, this bio-catalyst is a natural and organic product that requires no special handling.

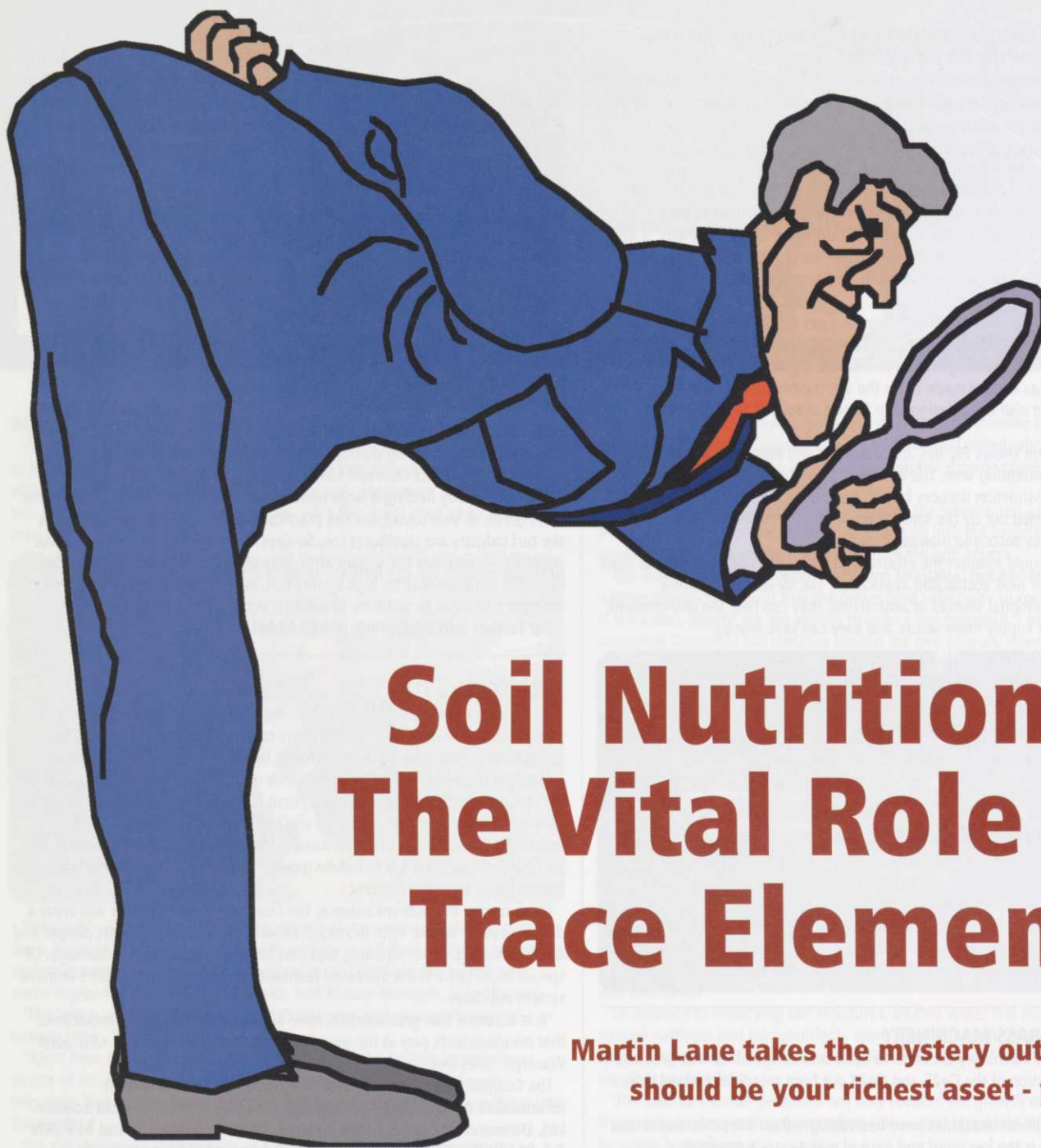
ComCat® is absorbed either by the seed or by the grass through all parts of the leaf blade and root. The effect unfolds with the positive stimulation of the grass' defence mechanisms and the improvement of the root development, resulting in deeper roots with higher bio-mass. This enhances the grass' resistance to biotic and abiotic stress factors such as disease and drought. ComCat® accelerates the uptake and assimilation of available nutrients that increases turf density, improves chlorophyll content and intensifies the turf colour. It also makes more efficient use of any added nitrates.

ComCat® is supplied as a powder and dissolves in water making it easy to apply with a spray. Developed in Germany, ComCat® is also certified under EU regulation 2092/91 for use in organic farming.

For further information contact: Jim Wotherspoon

Tel: 0141 556 5755 Fax: 0141 556 7255 Email: info@retona.co.uk

Sharp eyed readers will have noticed that in last month's New Product section the photograph of the Complete Weed Control Weed-It Machine was placed alongside the Aquaflex moisture sensor. Apologies for any confusion.



Soil Nutrition & The Vital Role of Trace Elements

Martin Lane takes the mystery out of what should be your richest asset - your soil

In the last 20 years or so the science of greenkeeping has become much more demanding as golf has massively increased in popularity. Greenkeepers are now under constant pressure from the golfers to provide perfect, dark green, even playing surfaces -just like Augusta! The snag is that, unlike at Augusta, they can't close the course for six months of every year. To achieve perfection all year round is therefore, rather a tall order in our northern climate.

The density of human traffic and the demand for all-year-round course availability has led to a revolution in course design and maintenance. The increase in popularity of sand-based greens has been due partly to American influence and partly to this need to provide all-year playing conditions. All golfers appreciate the excellent playability of these surfaces throughout the seasons, as do the clubs as they compete for business.

As always, there is a downside. Trying to grow and maintain fine golf

turf on sand can be complicated, time-consuming and expensive. As a result, a whole industry has grown up offering a myriad of off-the-shelf products all claiming to be the answer to the greenkeepers' prayers, but often just adding to the confusion. As we pour on thatch-reducing agents and microbial inoculates, do we ever ask ourselves how we came to kill off all the native organisms in the first place? As we spray on the fungicides do we wonder why golf courses are now so vulnerable to fungal attack?

The effect of all this has been to distance us from our roots (oh dear!) and allow us to forget that Nature knows a great deal more about growing grass than we do. Our role in life is to assist it, not spit in its face! In recent years it has been all too easy to forget that we are dealing with a sensitive ecosystem that has been around for millions of years. To understand fully the problems generated on our somewhat artificial playing surfaces, we first have to take a close look at normal soil.

Soil is made up of a mixture of rock particles, organic matter and living organisms. In ideal circumstance these exist in symbiotic harmony and this, with the addition of sunlight, rain and the Earth's atmosphere, offers the perfect growing medium for plants. As the constituent rock particles naturally weather, mineral nutrients are released into the soil and are taken