

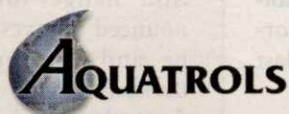


# TURNING TRADITIONAL SALT MANAGEMENT ON ITS HEAD.

Providing Solutions  
to the Water  
Management Puzzle



**SALT SUCKS.** Yep, draws the water right out of your turf through the roots. And it's happening more and more – soil salinity and irrigation water quality are becoming an ever-increasing problem. Traditional treatments such as gypsum are slow-acting and provide inconsistent results. Turn traditional salt management on its head with Caltrisal – it moves desiccating salts away from the rootzone quickly and efficiently. Caltrisal can be sprayed or injected, and can be applied in conjunction with liquid fertilizers, making application a snap. Switch to Caltrisal – your turf will thank you for it.



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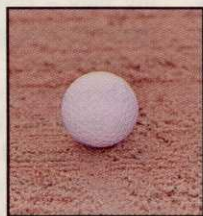
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Now you can have bunkers that are consistently perfect in firmness, finish and playability

Four new Smithco models offer easier servicing, the only diesel option, the world's only electric drive, new features, economical pricing and more.

The widest range of accessories and implements give you better bunkers every time.

Smithco has been setting the standards for bunker rakes for the past 35 years, and our current line-up provides new and exclusive features that make them the best we've ever made. Depending on your needs and your budget, you'll find a rake that is superior to the competition.



*Playable lies every time*

From the economical G-star, with many new features, to the Super Star, the most sophisticated in the industry, they all provide you with special engineering features to make bunkers that are consistently perfect in firmness, finish and playability.

Combined with the widest range of accessories available, Smithco offers you a bunker rake system that's the best in the business.

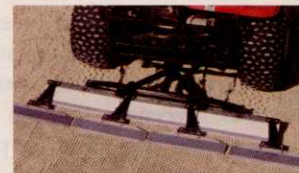


*New Smithco G-star*

From patented Speed Boss, that lets the superintendent set the bunker speed, to our brush finish attachments, you get the system you need to maintain the best bunkers in the business.



**Patented Speed Boss**  
Superintendent sets the raking speed



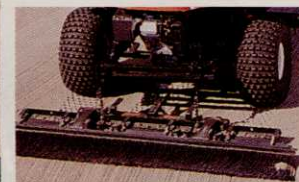
**Tournament Finish Rake**  
Exclusive design for firmest, most playable surfaces



**Aluminum Front-Mounted Plow**  
Lightweight, easier to operate



**Sand Trap Cultivator**  
Loosens and conditions crusty and wet sand



**Brush Attachment**  
Works in combination with sand rake for an unparalleled smooth finish

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and we'll arrange for a demonstration of the new Smithco Bunker Rake System



Try one. You'll buy one.

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***They value its reputation  
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## Cut back callbacks with the proven power of Roundup PRO®.

You can't afford herbicides that let you down. That's why you get to the root



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The logo features the word "Roundup" in a large, bold, black font with a green swoosh underneath. Below it, "PRO" is written in a blue, bold font. Underneath "PRO" is the word "Herbicide" in a smaller, blue font.



*The Brand You Trust*

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The latest herbicide innovation from the maker of Roundup PRO® herbicide, QuikPRO™ herbicide combines quick action with complete control, roots and all. You and your customers will benefit from fast, visible results as well as continued, superior weed control.



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- Rainfast in one hour – guaranteed.
- Quick uptake moves weed-killing power right to the roots, where it can't wash away.

## Easy to use with easy-to-see results.

- All-in-one, quick-mixing formulation reduces hassles and errors of tank mixing.
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# GRADEN



## ST ANDREWS KEEP ON GROOVIN'

St Andrews Links Trust bought three pedestrian Graden Scarifiers in 2001 for use on their six public golf courses. Gordon Moir, Links Super-intendent has been delighted with the purchases.



"We have found them to be very efficient and quick machines to use for scarifying playing surfaces prior to overseeding and sanding operations. We have had so much success with the pedestrian

Gradens that we purchased a tractor mounted Graden in 2002 to enable us to scarify larger areas such as fairways. All in all the Graden is a first rate machine".

JOE BEDFORD  
CHAIRMAN  
F.E.G.G.A.  
Federation of European  
Golf Greenkeepers Associations

"With 65,000 Rounds over 27- Holes on 12,500m<sup>2</sup> of greens we require Aeration throughout the year. Combined with our Hollowcoreing Programme in Spring and Autumn linear Aeration with the Graden has given consistency to our surfaces, improving Drainage leading to Firmer Faster Greens.

With the wet Year we experienced in 2002 our Greens performed superbly, so take a bow Graden"

Course Superintendent  
Hollystown Golf Club, Ireland

**"I HIGHLY RECOMMEND THE GRADEN TO ANYONE WHO WANTS A BETTER PUTTING SURFACE AND HEALTHIER TURF."**



Rick Elyea, Director of Golf and Marketing for tee-2-green has witnessed the benefits of the Graden while working with their Penn varieties of Creeping Bent Grasses.

"I was introduced to the Graden unit four years ago at a Tee-2-Green roundtable discussion. I was impressed with the performance of the machine and what it can do to revitalise the turf grass plants. I have found that the machine allows the golf course superintendent the ability to vary the depth of blade penetration, width by blade size or removal of blades. It has been very helpful in removing



the grow-in layer on greens, excessive biomass, almost twice as much as aeration and provides an excellent seedbed.

I have seen more golf courses use the graden to renovate

their greens. They are able to adjust the penetration depth to a maximum depth of 1<sup>3</sup>/<sub>4</sub>" (45mm) with most greenkeepers targeting the area from 1/4" to 1/2" or 0.6mm to 12 mm.

They then follow the machine by dropping seed into the grooves, dragging the greens mix or sand back over the seed and wait for the new seedlings to emerge.

I have seen courses do this once a month through the growing season with very good success and little disruption of play to the golfers.

I highly recommend the Graden to anyone who wants a better putting surface and healthier turf."

## AT LAST "THE RIGHT TOOL FOR THE JOB"

Using the Graden on cricket squares is now increasing in popularity in the UK. Keith Kensett of Turfmasters and also an experienced contractor, always felt strongly that cricket clubs would benefit greatly from the machine, and demonstrated it to the English Cricket Board. The blades cut easily through the harder clay surfaces, removing thatch and fibre, without the need to pre soak, and being from Australia, has already proved itself on Australian cricket squares.

Following the success Worcestershire County Cricket Club had with the Graden, many other cricket clubs at county, league and village standard have now followed suit. These include County Cricket Grounds such as Northampton, Sussex, Hampshire, Warwickshire, and Somerset County Cricket Clubs plus many others. This widespread use of the Graden has lead one leading cricket groundsman to say "I can't imagine a cricket ground anywhere in the world that could not benefit from this machine"

David Bates, Head Groundsman at Northamptonshire CC and Chairman of the First Class Headquarter Groundsman Committee stated: "I believe the Graden has revolutionised the process by which cricket groundsman remove unwanted fibre and debris. The power, and when needed, the severity, enables the control and reduction of thatch layers for all standards of playing surfaces.

Roger Ward, an ECB advisor saw a Graden demo at Cheam Cricket Club along with Chris Woods, and their combined comments that this machine would completely change the way cricket groundsman treat their squares has become true. Cricket groundsman are amazed that they can scarify their squares so effectively without first watering.



CHRIS ROBERTS  
Course Manager  
LUDLOW GOLF CLUB, UK

"We have used the Graden with 2mm blades 4 times on our worst greens, this has dramatically reduced our thatch layer in less than 5 months. It has also eradicated a black layer problem we had and has made the greens a lot firmer and free draining.

The other noticeable difference after using the Graden was the root development, two weeks after the first operation new white roots were seen following all the way down every groove. After the four times we have used it, we have turned one of our weakest greens into one of our strongest."





## 'GRADEN ON TRIAL'

### CULTIVATION OF SAND ROOT ZONES

J.T. VANINI, J.R. CRUM AND J.N. ROGERS, III  
MICHIGAN STATE UNIVERSITY

At Michigan State University we are conducting research to evaluate two cultivation methods on turfgrass surfaces. We are using a standard hollow-tine core cultivator using  $\frac{3}{8}$ " (0.95 cm) tines on a 2" x 2" (5.1 x 5.1 cm) grid spacing and a Graden GS04 using 2 mm blades on 1 inch (2.5 cm) spacing.

Details of procedures and Results from this study will be published in the 2003 Michigan Turfgrass Conference Proceedings, but there are some initial observations. Although the Graden can be more labour intensive in cleaning debris (due to debris being scattered versus "nice" clean plugs), twice as much surface area is cultivated with the Graden as compared to standard core cultivation. Aggressive cultivation needs to be done on very high sand content root zones because with the accumulation of organic matter, the average soil pore-size is decreased. This creates a zone at the near-surface that holds much more water and decreases aeration in the soil. Also, a smooth surface is easier to produce with the use of a Graden as compared to a core cultivation unit.

We have seen dramatic improvements to golf and athletic fields with the use of the Graden and expect to see the same results with our experiments.



## AERATION THROUGH DEEP SCARIFICATION

BY STEVE ISAAC, STRI AREA MANAGER FOR SCOTLAND & IRELAND

Everyone accepts the importance of a good aeration programme to develop quality turf playing surfaces but the vital area 12-30 mm beneath the turf base, where thatch formation can severely impact on surface water drainage, is often neglected by conventional aeration techniques. This is where deep scarification can play a major role in getting air into the grass roots and the main zone within the soil profile where the plant respire and where moisture and nutrient are taken up by the grass. Experience has clearly shown success in developing firmer surfaces and encouraging new white root growth to scarification lines where the technique has been applied in appropriate conditions. Information from the USGA highlights the greater impact on surface area using the Graden compared to traditional hollow coring, with up to 14.1% area impacted using the 3 mm blades compared to only 4.91% with 12 mm coring tines set to produce a 50 mm by 50 mm hole pattern.

The benefits to aeration are enhanced if quality sand-based top dressing can be worked into scarification lines, though this does necessitate that the operation be undertaken in dry surface conditions, with the 3 mm blades proving most effective in achieving incorporation of the dressing material.

**Steve Isaac works from Blairgowrie ( 01250 875805 or e-mail [steve.isaac@stri.co.uk](mailto:steve.isaac@stri.co.uk)) and his colleague Richard Windows is based in Glasgow ( 0141 334 4262 or e-mail [richard.windows@stri.co.uk](mailto:richard.windows@stri.co.uk)).**



**NEW FOR 2003**

**'DIESEL'  
GRADEN ZERO-TURN MOWER**

2003 will see the launch of the exceptional 'Diesel' Graden Zero Turn mower, this fast and highly maneuverable ride on mower is powered by a 26hp Yanmar Diesel engine and is ideal for cutting cleanly and quickly through tight, restricted areas. The Zero-Turn mower has a forward top speed of over 15Kph and with having the rear wheels independently controlled this give a turning radius of ZERO and gives the operator full control for maneuvering in any situation. There are 2 cutting widths available, 62" and 72" with an option of side or rear discharge.

**GRADEN**

**SCARIFIERS WERE DESIGNED FOR FINE TURF BUT BUILT FOR ANYWHERE**



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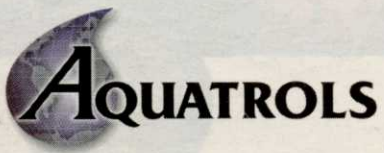
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**You'd like the convenience of a long-term surfactant – if you could find one that really worked.** That's why we've developed Aquatrols Sixteen90. This long-term surfactant remains effective in the soil for up to three months, reducing water repellency and promoting turf uniformity. And unlike some "long-term" surfactants, we guarantee that it's safe to use on all fine turf regardless of climate or environmental conditions.

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