

SubAir System

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making "significant developments."

Ferris explained the SubAir system features a blower — installed either in a vault below ground or on a portable trailer. The blower can distribute air into the root zone, or reverse the air flow to suck soil moisture — and with it some gasses — out of the soil.

"The main thing is, you need the gravel blanket [found in USGA green construction]," said Benson. "That blanket evenly distributes the air."

The portable SubAir unit, which is hooked into the green's main drainage pipe, is about \$8,000, Ferris said. The cost to install the permanent unit underground in a vault at construction is about \$16,000 to \$17,000 including labor, he said.

"It is so logical," said Hiers. "If a person uses it correctly, it will almost certainly reduce pesticide usage because you will make that soil less than friendly to fungus... You can take away excessive moisture, create the right temperature and get oxygen to the roots. That produces a plant with longer, deeper, healthier roots that is more resilient to disease, insects and traffic damage. You're going from a 90-pound weakling to a 180-pound linebacker."

"We also think we have good potential for controlling sodium," Benson said. "Being able to flush the greens out at our convenience, we should be able to monitor and hold down salt buildup, which is a big problem out West and in certain other parts of the country."

"The theory is absolutely correct," said Dr. Michael Hurdzan. A golf course architect who owns a PhD in environmental turfgrass physiology, Hurdzan was nevertheless reticent to support SubAir until it is proven in the field.

To that end, Ferris hired retired Pennsylvania State University Prof. Joseph Duich to study oxygenation, soil moisture removal, temperature control and root development with SubAir. It has been demonstrated on more than 40 greens around the country and was installed on two 17,000-square-foot greens at The Tennessee Golf Foundation's Little Course at Aspen Grove in Franklin, Tenn.

Joe Kennedy, superintendent at The Legends of Tennessee as well as The Little Course, which was seeded last September, reported good results so far, but added he will know a lot more later this year.

"Will it work? Time will tell," he said. "All indications are that it will. It definitely moves air. We have been able to create dew on a low-humidity day to get green. From that standpoint, we feel we may be able to do away with some surface fans."

Kennedy is mostly looking at air movement and temperature moderation. The Little Course's 17,000-square foot double green for the 4th and 8th holes, and its 17,000-square-foot putting course both have cooling systems — a four-foot deep network of pipe through which air is drawn.

"When the air came through the cooling grid, it — not the soil — dropped 30 degrees," Kennedy said. "We won't know until this summer what effect that will have on the soil. But that part is promising."

Meanwhile, it could also affect grasses, allowing superintendents to grow bentgrass further south, or Bermudagrass further north by controlling soil temperature. Benson added, "Guys with Bermudagrass who overseed because of

fear of five or six cold days in the winter, would have a way to dodge those five or six days, and they would no longer have to overseed."

Some had questioned whether SubAir would work as well on older USGA greens, which were built with more restricted macro and micro pores. But Benson said that, somewhat surprisingly, test greens have shown "age is not a factor."

"We fully expect a number of situations where the greens have significant problems where the soil is not acting as it should," Ferris said. "We've developed a tool with which we can go into the gravel blanket on any spot on the green and find out how good the [air] movement is. We will be able to find those areas, and that will allow the superintendent to focus on them and deal with them appropriately."

SubAir: New spin on an established practice

SubAir may be brilliant in its simplicity. But in theory, it is certainly not new. The agricultural industry has used the "treat-the-subsurface" theory since the 1920s. Dr. William Daniels, now retired from Purdue University, invented the fluid- and air-based Prescription Athletic Turf (PAT) System in 1972, and since then has seen it installed in 31 National Football League, college and high school fields. But a golf course application, based on moving air, not water, is new. And it could have profound implications for turf care.

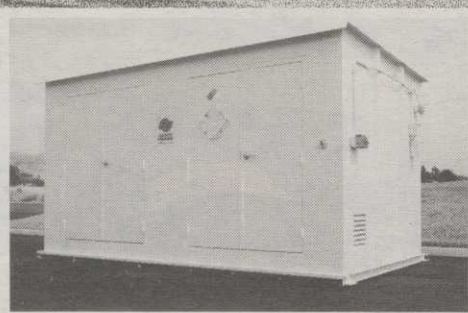
"Trying to get air into the roots and trying to keep grass growing under

adversity has always been a challenge, particularly when we sheer it down to the ground at 3/16-inch cut," Dr. Daniel said. "Where this ball game is going, I don't know."

Daniels reported that, with his PAT system, "a 1.5-horsepower pump on a vacuum blower can pull 100 cubic feet of air a minute out of a football field. Theoretically, in about 20 minutes you've changed the air completely."

Ferris estimates a complete air exchange in an average-size golf green in about 15 minutes with SubAir, using its 10-horsepower electric motor or 18-horsepower gas engine.

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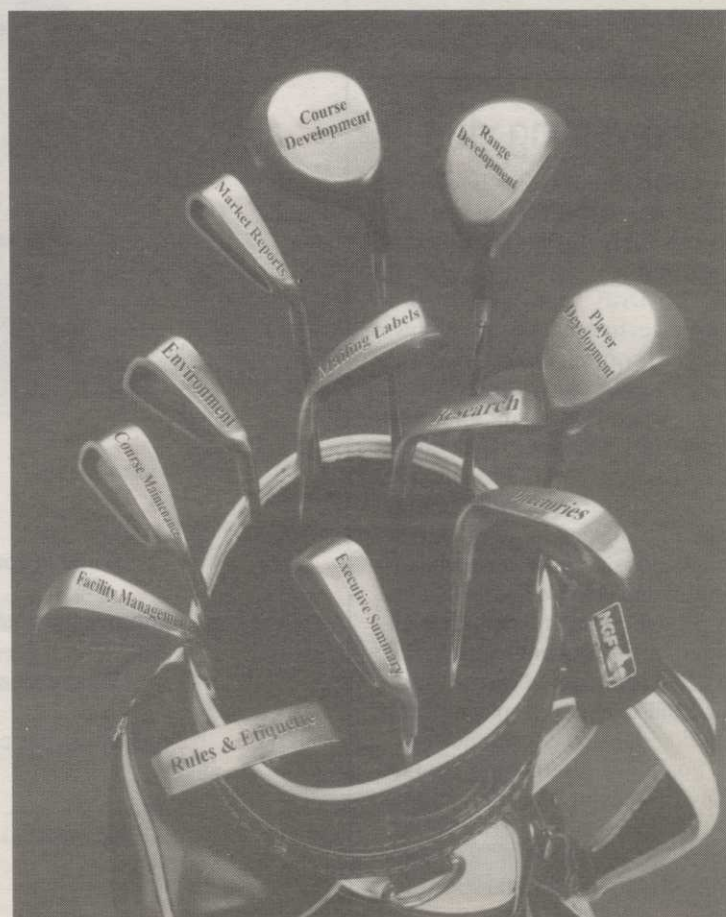
CIRCLE #174/BOOTH #2011-2013

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Aquatrols unveils wetting agent and soil surfactant

Cherry Hill, N.J.-based Aquatrols has introduced two new products for turf professionals — InfilTRx and Primer 604.

InfilTRx soil penetrant was developed to try to outperform all wetting agents applied through irrigation systems.

Primer 604 Matrix Flow Soil Surfactant is a new category of surfactant chemistry that Aquatrols claims goes a step beyond the performance characteristics of other wetting agents.

For more information call Aquatrols at 1-800-257-7797.

CIRCLE #303

Ransomes launches new rotary mower

Ransomes America Corporation has launched a new series of riding rotary mowers called the Front Line 700 Series.

The Ransomes Front Line 723D features a 23-horsepower liquid-cooled Kubota diesel engine. Model 725 is powered by a 25-hp air-cooled gas engine. Both models have a top cutting speed of 6 m.p.h. and a top transport speed of 8.25 m.p.h.

Four different cutting decks are available for the new series. Three maintenance attachments are adaptable to the mowers by removing the cutting deck and attaching a special adapter kit: a core destroyer for post-aeration cleanup, a snow blower and snow blade, and a front-end brush for cleaning sidewalks and parking lots. For more information contact Ransomes America Corporation at P.O. Box 82409, Lincoln, Neb. 68501; or call 1-800-228-4444.

CIRCLE #304

Preventing drift

Environmental Technologies (ET) has introduced a walking boom spray applicator aimed at preventing spray drift.

The Drift Guard WB70 is a three-section boom that follows ground contours to improve the accuracy of spray applications. The wings fold easily for transport and storage. The boom comes with a standard nozzle-flow monitor, pressure gauge and digital speedometer. An enclosed design also improves operator and environmental safety.

Two additional models are available: an 18-foot boom system and a 6-foot sprayer that can be towed or front-mounted in place of the cutting deck on a front mower.

For more information contact Environmental Technologies at 101-110 Research Drive, Saskatoon, SK, Canada, S7N 3R3; or call 306-934-3832 or fax 306-934-1615.

CIRCLE #305

Single-point infeed grinder from SIP

Simplex-Ideal-Peerless has developed the Peerless 2000, a table-top reel grinder with single-point infeed, now available to superintendents.

The Peerless 2000 eliminates alignment of the grinding head to the reel support rails. The grinding head track shafts and reel support rails are hardened, ground, and hard-chrome plated, then precision mounted on an all-welded table made from 3/8"

thick steel plate.

The Peerless 2000 features a 1-horsepower grinding motor, a 1/3-hp variable-speed spin motor, a 6" by 1 1/2" spin-grinding wheel, and a 6" by 1/2" wheel for single-blade relief grinding.

For more information on the Peerless 2000, contact Simplex-Ideal-Peerless at P.O. Box 1236, Oldsmar, Fla 34677; or call 1-800-888-6658.

CIRCLE #301

K-Power offers two new fertilizer blends

Vicksburg Chemical Company of Memphis, Tenn., has launched a pair of new fertilizer blends aimed at the golf course market.

Both feature a blended controlled-release fertilizer from potassium and nitrate the company says will reduce maintenance and ensure continuous feeding of nutrients.

The 24-4-12 K-Power Blend Fertilizer is designed to provide 50 percent controlled-release potassium and 32 percent controlled-release nitrogen derived from polymer-coated potassium

nitrate.

Vicksburg has also developed a new blended fertilizer for use on greens and close-cut turf.

The "12-0-42 K-Power Mini-Prill Blend Fertilizer" is designed to provide 50 percent controlled-release nitrogen and potassium from polymer-coated potassium nitrate. The product aims to reduce maintenance needs and ensure continuous feeding of nutrients.

For more information call Vicksburg at 901-458-3300.

CIRCLE #302

FOR YOUR CREW, THE GOOD NEWS IS THEY WON'T HAVE TO SPEND AS MUCH TIME MOWING.



Some of your crew may think we invented Primo® to improve the quality of their lives.

What we had in mind, actually, was improving the quality of your course.

With Primo, you don't have to mow as often. Which frees up time to rebuild sand traps, tend to flower beds, and take care of all the other things that usually get put on the back burner.



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Respond concentrates on root depth

Turf managers looking for more effective, environmentally sound products to boost turf growth now can choose Respond, a new plant biostimulant from Sustane Corp. Researchers at Virginia Polytechnic Institute field-tested the product for three years and found that, when turf comes under stress such as drought, chemical or pest pressure, and salt build-up in soil, Respond improves plant growth.

Respond's ability to help increase root depth and overall root mass is designed to result

in more efficient use of moisture and nutrients. Respond contains scientifically blended components — including cold processed seaweed extracts, humic acid, chelated iron and other essential plant-growth nutrients — formulated using a unique process that provides optimum performance.

For more information about Respond, contact Sustane at Suite 101, 6667 West Old Shakopee Road, Bloomington, Minn., 55438; or call 1-800-383-4081.

CIRCLE #306

Toro unveils new Reelmaster 5300-D

Toro has introduced the new Reelmaster 5300-D, a lightweight fairway mower it says will be ideal for cutting seasonal turf like Bermuda grass, hills and higher altitudes. The 5300-D has an all-new 32-horsepower diesel engine, a new hydraulic reel system, and a larger cooling system. The new system gives operators a 25 percent increase in power at the cutting unit.

The new 5300-D also fea-

tures an automated control electronics system with two diagnostic tools that can make servicing the unit faster and easier. It also has an electronic unit that controls clip height relative to mowing speed.

For more information contact The Toro Company, Commercial Marketing Services Dept., 8111 Lyndale Ave. S., Minneapolis, Minn. 55420-1196, or call 1-800-803-8676.

CIRCLE #307

Bio Trans offers new bio-catalyst

Bio-Trans 221 — a balanced one-part ready-to-use bio-catalyst — is designed to enhance beneficial microbial growth for the golf course and landscape markets.

The advantages of Bio-Trans 221: It can be used on all turfgrasses and as a foliar spray for woody and ornamentals; reduction of thatch; loosening compacted soil; and maximizing the plant's ability to utilize water and uptake beneficial nutrients by creating an environment that supports the plant/soil matrix and microbial activity.

For more information, contact Southern Specialty Seeds at 1-800-240-0243.

CIRCLE #308

Bigfoot sighting, courtesy of PSB

PSB Company, division of White Castle, Inc. and manufacturer of fertilizer spreaders since 1946, has announced a new commercial spreader, the BF1 Bigfoot.

Bigfoot is equipped with 13-inch pneumatic tires, 1.8-cubic-foot hopper capacity and a three-port hopper design allowing sophisticated spread pattern control. It is unique in that its spread pattern trim control and optional edge guard can be activated on the go. Both stainless steel and epoxy powder coat painted frames are available.

For information on PSB and the Bigfoot, call 419-385-8513.

CIRCLE #309

biosys takes aim at surface feeders

Utilizing high-tech "seek and destroy" beneficial nematodes (microscopic organisms), biosys, a Palo Alto-based biological pest control company, has introduced a proven solution to the problem of controlling turf surface feeders and ornamental insects.

The biosys products, marketed to golf courses and professional lawn care and pest control companies as Vector by LESCO, Inc. and Exhibit by Ciba, offer an effective alternative to chemical pesticides. Packaged in an easy-to-use water dispersible granule formulation containing beneficial nematodes, these products can be applied with any standard surface application equipment.

The EPA has exempted beneficial nematodes from registration requirements because they are naturally-occurring organisms and won't harm humans, animals, ground water or beneficial insects such as ladybugs, earthworms and honeybees when used as directed. For more information on Vector, call 1-800-321-5325; for Exhibit, call 1-910-547-1160.

CIRCLE #310

THE BAD NEWS IS THEY'LL HAVE PLENTY OF TIME TO WORK ON EVERYTHING ELSE.



Primo works by redirecting the growth of your grass.

It gives you a thicker, more compact stand, more root mass, and ultimately, better-looking grass.

So if your crew's time could be better spent on some-

thing other than mowing, start using Primo.

We can't promise them more time at the beach, but at least

they'll still get plenty of sun.



CIRCLE #179/BOOTH #6371

**TOUR SMOOTH
FROM STANDARD**

The Tour Smooth Maintenance Rake from Standard Golf features a 22-inch wide, extruded aluminum head, heavy-duty teeth and extra-long, powder-coated aluminum handle (66- or 82-inch). The Tour Smooth is designed for finishing bunker edges quickly and professionally—especially those sand hazards with deep faces. For more information, call 319-266-2638.

CIRCLE #312



NEW PRODUCTS

Royal introduces three new varieties

Royal Seeds has announced the availability of three new turfgrass varieties for spring 1995.

Fairfax Kentucky Bluegrass (BA69-82 in the NTEP) has proved especially tolerant to drought. It's designed for sod production and wherever Kentucky Bluegrasses are needed for harsh conditions.

Omni Perennial Ryegrass is a tight-knit, low-growing perennial ryegrass that has out distanced other ryegrasses under high-stress conditions. Omni has also

fared well when stressed by leafsport, brown patch or drought.

Bonanza II Turf Type Tall Fescue is a turf-type tall fescue you can trust like its predecessor Bonanza—it has staying power.

Fairfax, Omni and Bonanza II are available through the Royal Brand network: Royal Seeds, Salem, Ore. and St. Joseph, Mo.; Beachley-Hardy Seed Co., Shiremanstown, Pa.; Indiana Seed Co., Nobelsville, Ind.; Union Seed Co., Nampa, Idaho; Arkansas Valley Seeds, Denver, Colo.; and Land O'Lakes, Minneapolis.

For the Royal Brand distributor nearest you, call Royal Seeds at 1-800-228-4119.

CIRCLE #314

JRM adds two polymer lines

JRM Chemical has added two new package sizes of its Soil Moist Polymer products. Soil Most Fines, used as a bare-root dip and for packaging media, is now available in a one-pound jar for smaller applications. One pound will make up to forty gallons of a slurry mixture to coat bare-root seedlings to reduce transplanting shock.

The Economy Pack is a three-ounce package of Soil Moist. The pre-measured amount is designed for field applications to help eliminate application errors. The product is packed in a resealable plastic bag.

Soil Moist is designed to reduce plant waterings by 50 percent and last for several seasons.

For more information, contact JRM Chemical, 13600 Broadway Avenue, Cleveland, OH 44125; call 800-962-4010; or fax 216-475-6517.

CIRCLE #314

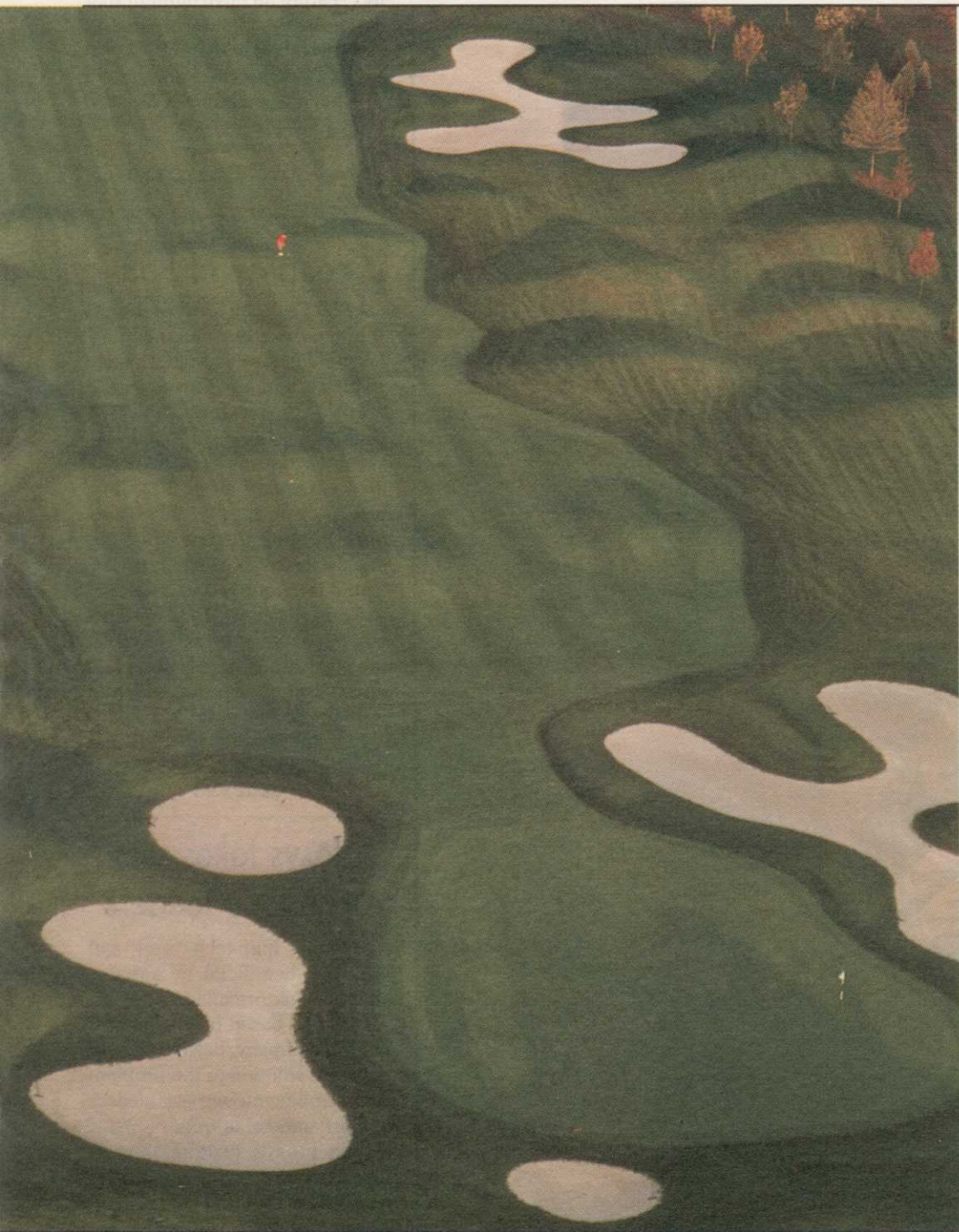
Protection with SunOut towelettes

Save money and protect yourself with new SunOut sunscreen towelettes from Unispur Corp. of Dallas.

New SunOut is a handy, disposable, single-use towelette soaked in SPF 15 or SPF 30 sunscreen. Packaged in convenient, tear-open packs, SunOut provides an inexpensive sunscreen option for quick protection at the point-of-purchase. One application costs about \$1.00, compared to paying up to \$10.00 for a large bottle of sunscreen, or even \$2.50 for a smaller squeeze tube.

Simply tear open the pack, remove and unfold the saturated 8-by-11-inch towelette, and wipe the sunscreen on. One towelette covers arms legs, face, and neck for UVA/UVB protection up to four hours. For complete details on SunOut, distributorships, or Unispur Corp., call 1-800-348-0889.

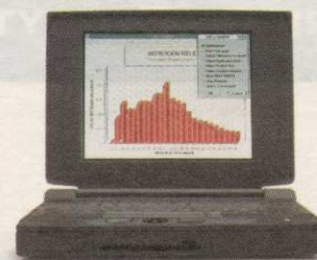
CIRCLE #311



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