

BRIEFS



MORSE JOINS CORON SALES TEAM

SOUDEVERTON, Pa. — Stanley Morse, formerly of Vicksburg Chemical and Arcadian Corp., has joined the CoRon sales team. Morse is now responsible for sales and technical support of CoRon's liquid, controlled-release, nitrogen fertilizer products in the Southwest and mid-South. Morse will be based in College Station, Texas.



Stanley Morse

LUPER TO REP GREENTURF IN S.E.

MCKINNEY, Texas — John Luper has joined GreenTurf International as the southeastern regional sales manager, having previously served as general manager of Liquid Ag Systems in Fort Lauderdale, Fla., GreenTurf's distributor in Florida. A certified golf course superintendent since 1979, Luper can be reached here at GreenTurf by dialing 1-800-799-9074.

PULLIAM PROMOTED AT ZENECA

WILMINGTON, Del. — Keelan Pulliam has been named business director for Zeneca Professional Products, based here. In his new position Pulliam will oversee the division's business growth and direction following Zeneca's recent restructuring, which created five separate business segments in North America. Most recently, Pulliam served as director of sales for Zeneca Ag Products.

CHANGE OF SCENERY FOR DAKOTA

SIoux FALLS, S.D. — Dakota Turf has relocated its offices here. The new address is Dakota Turf, 712 E. 50th St. North, P.O. Box 1859, Sioux Falls, S.D. 57104. The firm can be reached by telephone at 605-336-1873; or by fax at 605-336-0005.

AMIAD TAPS DAVIDSON FOR WEST

VAN NUYS, Calif. — Mike Davidson has been named western regional sales manager for Amiad Filtration System's Irrigation Division, based here. Davidson is a 17-year veteran in the use, design and sales of irrigation filtration systems. The past four years he's served as sales engineer for the Southern California territory.



Mike Davidson

Emissions deadline comes, goes in Calif.

By HAL PHILLIPS

SACRAMENTO, Calif. — Enforcement dates on the California Air Resources Board's (CARB) stricter emission standards have passed, and manufacturers of mowers and utility vehicles have fallen in line. However, engine manufacturers may not be completely up to snuff until later this spring.

Wisconsin Total Power has received CARB approval on its Wisconsin engine models AENL2, BKN2 and THD3, while Kohler will not even request approval for its Magnum model. Other manufacturers — including Briggs & Stratton and

Mitsubishi — have received the okay on some models, but not others.

"In some cases, the engines have not been certified," said Kirk Reimers, chief engineer for Cushman, a division of Ransomes America Corp. "We're not hurting on the sales side because they've been grandfathered. But the engine-switching process has been very expensive.

"Of course, we — as an on-road motorcycle and meter-maid vehicle manufacturer — have been involved with CARB before. They have not other choice but to be hard-line because the EPA has named

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California EPA signs off on Primo and Dimension

SACRAMENTO, Calif. — With all the hoo-hah surrounding the state's strict emissions standards, it's easy to forget California also has separate and stricter laws regarding chemical registration.

However, state officials here have given their approval to a pair of golf course industry products:

- **Primo**, a turf growth management tool manufactured by Greensboro, N.C.-based Ciba Turf & Ornamental, was recently registered by the California Environmental Protection Agency (EPA) for use in the state. Primo, which has been okayed for use in the remaining 49 states since 1993, regulates turf growth by reducing the size of plant cells and is designed to reduce clippings by approximately 50 percent.

- Philadelphia-based Rohm and Haas Co. has received registration from the California EPA for Dimension, a turf herbicide designed to control crabgrass and other susceptible grasses and broadleaves. Dimension is also expected to prove effective against kikuyograss, a problem turf not addressed by many herbicides labeled in California.



With the SubAir unit are (from left) Patrick Bennett & David Ferris, co-owners of SubAir Inc., Dr. Joe Duich of Penn State and Marsh Benson, superintendent of Augusta (Ga.) National.

NEW PRODUCT OF THE MONTH

Ferris to debut SubAir in San Francisco

By MARK LESLIE

Early indications are that golf course superintendents will soon have an important addition to their arsenal. Called SubAir, it is a system that blows air into the drainage network below the root zone of a U.S. Golf Association-spec green.

"It doesn't solve all your problems," said its inventor, Augusta National Golf Club superintendent Marsh Benson. "But it gives a turf manager a much better fighting chance to control the micro-climate he's trying to grow grass in.

"All of us typically have one or two notorious greens that give us problems year-in and year-out. I think that's where the system will

get its start, trying to turn those greens around. Then, with a mobile unit, taking those benefits from green to green."

"It has incredible potential," said Tim Hiers, superintendent at Collier's Reserve in Naples, Fla., who has used SubAir on his greens. "There are a lot of other things you have to do right, but this is a tool that could be extremely beneficial."

"We're working with three angles — oxygen, temperature control and moisture control — using the air system to do all three," said David Ferris, president of SubAir, Inc., which teamed with Benson about a year ago. Benson first designed the system in 1989 and spent four years

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Bishop named new Lebanon president; stays on as COO

LEBANON, Pa. — Katherine Bishop has been elected president of Lebanon Chemical Corporation and its subsidiaries, headquartered here.

Bishop, who was elected president at a recent directors meeting, will continue as chief operating officer and will be responsible for the operations of the business.

At the same meeting, Richard J. Newmaster, Jr., chief administrative officer, was appointed corporate secretary. Newmaster was already serving as secretary of Lebanon's Stanford Seed and Seaboard subsidiaries.

Vernon Bishop will continue as chairman and chief executive officer. Bishop will remain involved in the overall direction of the corporation and in counseling management.

In other Lebanon news, Paul Grosh has been named national sales and marketing manager for Lebanon Turf Products, the division responsible for Country Club fertilizers and grass seed, NX-PRO fertilizers, Greenskeeper fertilizers and grass seed, Lebanon Pro Fertilizers and Lebanon Control Products.

Grosh had served as sales and marketing manager for Professional Products. He joined Lebanon in 1987 as a sales representative and was promoted to sales manager of Southern and Mid-Atlantic sales in 1989.

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.

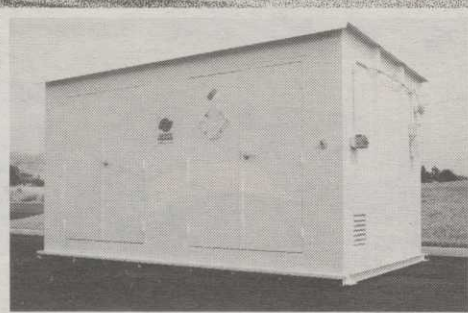
"Trying to get air into the roots and trying to keep grass growing under

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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