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Blowers, Sweepers, Vacuums

*These Power Tools are Taking
the Industry by Storm.*

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Cover photo: International Marketing
Exchange Inc. featuring the Redmax
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EDITOR'S FOCUS

BACKPACK AND HAND-HELD BLOWERS are some of the hottest selling items in the lawn and landscape maintenance industry today. Not only do they provide convenience and portability, but they enable the contractor to do his job about 30 percent faster.

That's not news to anybody who knows this industry. What is making the news, however, is a local governmental trend in the United States to severely restrict the activities of the power blower mainly because of its incessant whine.

City officials in California, Maryland, New Jersey and some 97 other cities across the country are attempting to enact legislation to limit or ban the use of the blower. With the exception of a few communities, such efforts have failed to date, but protests raised by environmentalists and homeowners are far from over.

When you look at all the power equipment available today, you may wonder



why the power blower is at the center of this noise pollution controversy. The consensus among industry professionals is that the blower is being singled out because it's generally run at a higher

rpm. It's not so much a problem for work sites, but more so for residential areas.

Because there is confusion over how far this type of legislation can be carried and even more confusion over how to enforce noise level ordinances, most cities are limiting their actions to time-use ordinances. This should already be common practice for lawn and landscape professionals.

The industry — contractors and manufacturers alike — needs to band together to fight any attempts at restricting the use of the power blower. The benefits of this product and the damage a blower ban would cause, need to be explained to city governments who are idly passing restrictions.

An alternative to the blower used to be plain old water, but in a time of drought and water shortages, the industry cannot afford such an option. This industry cannot afford to lose the power blower. — *Cindy Code.* ■

Cindy Code
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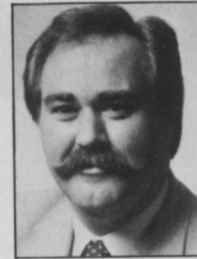
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U.S., BRITISH STUDENTS ATTEND JACOBSEN SEMINAR

Jacobsen Division of Textron recently hosted 36 of the top turf students from North America and Britain during the company's 22nd annual college student seminar. The three-day program was held in Racine, Wis.

During the seminar, students met and questioned turf managers, educators and golf course superintendents on topics ranging from budgeting and personnel management to preparing for professional sports events.

For the first time since its inception, this year's seminar was attended by a pair of students from the United Kingdom. Christopher Harvey and David Williams made the trans-Atlantic trip accompanied by British Institute of Groundsmanship representatives Eddie Seaward and Brian Robinson. The Institute and Jacobsen will sponsor a similar program in Britain later this year.

In addition to classroom work, students had the opportunity to use the latest in turf equipment, toured a major sports



Four students discuss turf equipment features with Jacobsen Training Manager Ralph Sylvester (left).

facility and were given a glimpse of the technology involved in designing and building turf machinery.

Jacobsen's student seminar brings together the top seniors from schools with major turf programs, often giving them their first chance to compare their knowledge and skills with those of other students. Turf program department heads at U.S. and Canadian colleges are asked to nominate students interested in a turf management career.

"The idea behind the seminar is to pass along as much first-hand knowledge and information to these young people as we can," said Jacobsen President Robert Reid. "We want them to know what to expect when they step into the job market, and how they can make the most of opportunities."

Reid said the company's support of the seminar is easily justified because of the enthusiasm shown for the program by both educators and

students. Jacobsen pays the cost of transportation, housing and meals for the students and for guest speakers who donate their time and expertise.

VIRGINIA TECH OFFERS NEW LANDSCAPE/TURF PROGRAMS

Virginia Tech's two-year agriculture technology program is adding a landscape and turf management option to its existing agriculture program. The program graduated its first class in May.

The landscape and turf management option is being added to the program in response to the industry's need for experienced professionals to fill a variety of managerial and technical jobs.

"The existing demand in lawn care and golf course management is probably two to four job opportunities for every graduate," said David Chalmers, extension agronomist at Virginia Tech.

Kevin Grueber, a Tech extension specialist, said there are numerous opportunities for graduates with training in landscaping. "It's a rapidly and continually expanding industry and there are not enough qualified people to meet the needs."

Graduates of the two-year program in landscape and turf management could expect starting salaries of \$15,000 to \$24,000 for assistant golf course superintendents.

OMC PLANS TO SELL CUSHMAN, LAWN-BOY

CUSHMAN AND LAWN-BOY, two divisions of the Outboard Marine Corp., are on the trading block. Ryan and Brouwer, two subsidiaries of Cushman, are also for sale.

The effort to sell the companies comes as OMC announced third quarter earnings at least 50 percent below the same quarter in 1988, when the company reported net earnings of \$23.3 million. The poor showing is attributed to a slowdown in demand for marine products and the continued impact of last year's drought on mowing businesses.

OMC, based in Waukegan, Ill., is a manufacturer of marine products, commercial and consumer turf maintenance equipment and light industrial vehicles.

The sale is expected to be completed by the end of September.

"Cushman has done very well," said Wayne Jones, OMC vice president, strategic planning, "but we've decided to focus our attention on what constitutes 85 percent of our business. The marine industry is very competitive."

OMC reported sales of nearly \$1.7 billion in 1988, \$245 million of which stems from Cushman and Lawn-Boy.

Although there's no guarantee that all facets relating to the lawn maintenance industry will be sold as a package, Cushman President Stuart Rafos said, he expects the group to be sold together and the divisions to remain essentially the same.

"Any buyer will be interested in Cushman because Cushman has been a successful company in terms of growth and profit, to the extent where it exceeded any other division owned by OMC," Rafos said. "We cer-

tainly hope to maintain the name, it's one of the primary assets of the company."

Rafos, who is also a vice president with the Outboard Marine Corp., said he hoped to remain with Cushman after the sale.

"We expect Cushman will be purchased by a strategic buyer engaged in the market Cushman is involved in whereas OMC is in the marine industry," Rafos said. "It's a positive step for the future and will enable us to take advantage of the market position of a parent corporation."

OMC has owned Lawn Boy, or a similar model under a different name, since the early 1930's. The company then purchased Cushman and Ryan in 1957 and 1968 respectively. More recent purchases include Brouwer Turf Equipment in 1986 and Noland Car Co. in January.

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For more information contact: Michael Bell, director, 1060 Animal Science Bldg., Virginia Tech, Blacksburg, Va., 24061; 703/231-7649.

CHIPCO TURF FUNGICIDE REGISTERED FOR USE IN CALIF.

CHIPCO® 26019 FLO turf fungicide was recently registered for use in California, according to the Rhone-Poulenc Ag Co.

The flowable formulation of CHIPCO® 26019 has been available outside of California for two years. It offers the same broad spectrum, long residual disease control of CHIPCO® 26019 wettable powder with the added convenience of a liquid formulation.

CHIPCO® 26019 may be applied at the rate of three to eight ounces depending upon the turf disease present.

COOL SPRING CREATES IDEAL CLIMATE FOR LEAF SPOT IN TURF

This spring's cold, cloudy weather, coupled with excessive rain in some areas, is providing an ideal climate for "leaf spot" on cool season grasses, according to industry reports.

Be on the lookout for lawn areas or entire lawns that seem off-color — almost chlorotic as if from an iron deficiency. These areas or lawns may not be responding to fertilization as expected.

Leaf spot shows up as small, oblong, purplish-brown spots on the upper surface of the grass blade. Lesions run together and cause the leaf to shrivel into a lifeless dull brown color. Lesions also appear in irregular patterns on the plant sheath.

As the disease progresses, the plant may appear to be rotting away into a "melting-out" process. At this stage the plant is destroyed and large areas or entire lawns become severely thinned.

DAVEY TREE CO. BUYS OHIO TREE SURGERY

The Davey Tree Expert Co. recently acquired the Ohio Tree Surgery division of Kuemmerling Associates Inc., Columbus, Ohio.

With the acquisition, Davey becomes the largest tree care company in Columbus. In addition, it places Davey in the grounds maintenance business for the first time in the Columbus market.

"In effect, we were able to more than double our operational size in Columbus," said Gordon Ober, Davey's vice

president of new ventures and chief negotiator of the transaction. "Other than Washington D.C., Columbus now represents Davey's highest dollar volume in any one city."

The name Ohio Tree Surgery will continue to be used during the transition. George Gaumer, Davey's area manager for Columbus, said Davey will use the Ohio Tree name along with Davey's on correspondence and service vehicles.

"It is important that Ohio Tree customers don't lose sight of the company that has served them well. We want to reassure them that Davey intends to provide the care and service they have been receiving," Gaumer said.

"Perhaps the best reassurance we can give our customers is that we are retaining all Ohio Tree employees. At some point they will be wearing different uniforms and driving different colored vehicles but their commitment to their work will be unchanged."

BIOLOGICAL FIRE ANT CONTROL PLANNED FOR 1991

Evans BioControl Inc. and the University of Florida will develop, commercialize and market a biological pesticide for the control of fire ants.

A licensing agreement between the two gives EBI exclusive worldwide marketing rights to products developed as a result of the university's research involving the



Illustration: USDA

fungal pathogen and related technology identified for control of fire ants.

Isolated in Brazil, the biological pathogen providing control of fire ants is a specific strain of a fungus species already present in the U.S., according to Jerry Stimac, research entomologist at the university. This particular strain co-evolved with fire ants, therefore it's more adapted to control of the pest than anything else.

Environmental Protection Agency registration and sales are expected for the 1991 application season.

SALES TRAINING VIDEOS AVAILABLE FROM SNAPPER

Snapper Power Equipment is making available three product demonstration/

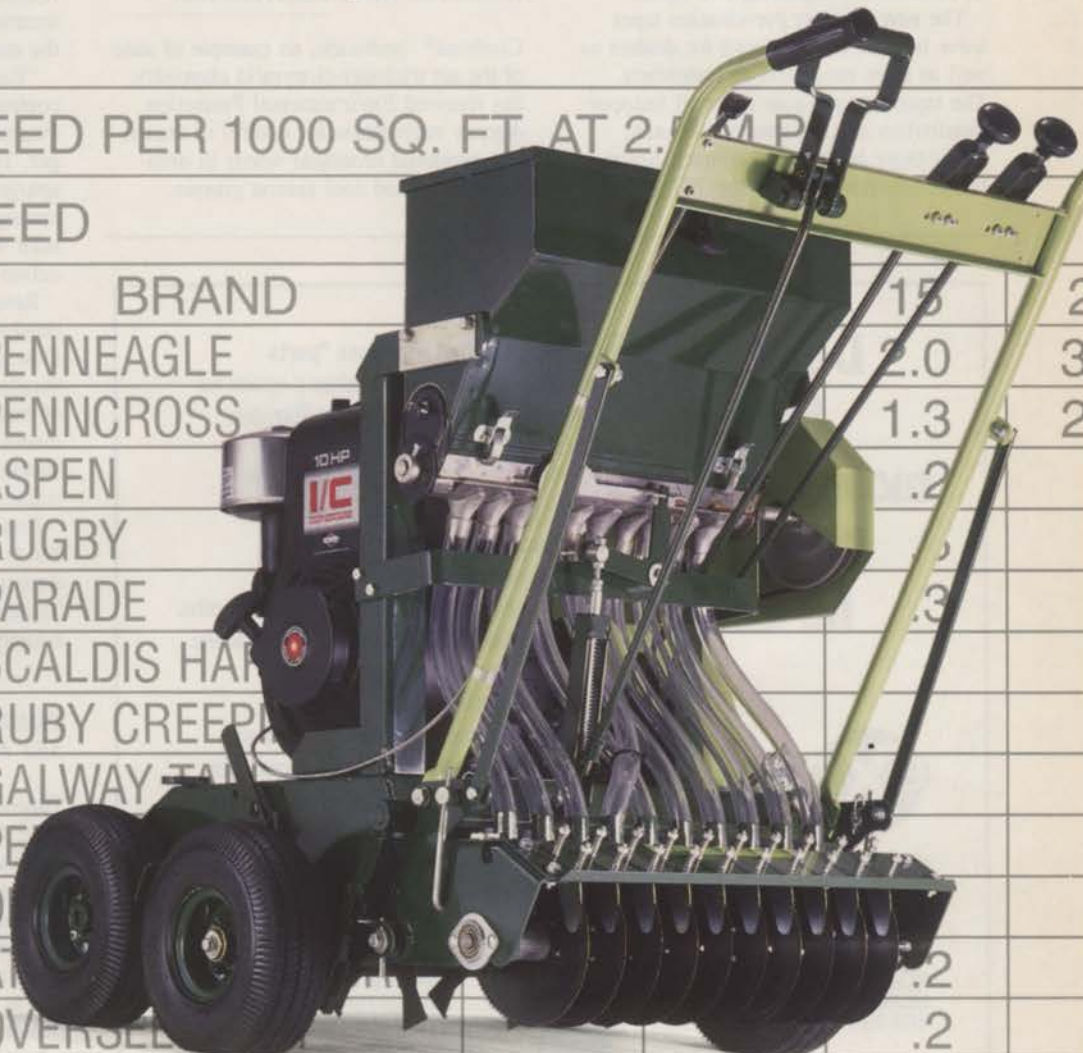
(continued on page 8)

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	PARADE	.3	
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(continued from page 6)

sales training video tapes. These tapes, one each on walk mowers, rear engine riders and lawn tractors are one hour in length, with each presentation being 10 to 12 minutes and repeating five times.

The new Snapper presentation tapes serve both as sales training for dealers as well as sales presenters to consumers. The tapes are available from all Snapper distributors at a net cost of \$10 each.

For more information contact: Snapper Power Equipment, P.O. Box 777, Mc-

Donough, Ga. 30253; 404/957-9141. Order part number 00285 for walk mowers, 00293 for rear engine riders and 00291 for lawn tractors.

CONFRONT HERBICIDE RECEIVES EPA REGISTRATION

Confront® herbicide, an example of state of the art triclopyr-clopyralid chemistry, has received Environmental Protection Agency registration for control of annual and perennial broadleaf weeds in ornamental turf and cool season grasses.

The new product, from The Dow Chemical Co., Midland, Mich., is composed of an amine salt formulation containing one part clopyralid to three parts triclopyr per gallon. Both active ingredients act as a plant hormone mimic, disrupting plant cell growth. Initial control results are noticed four to six days after treatment, with full results occurring in the ensuing weeks.

"Each active ingredient in Confront controls a variety of weeds," said Rob Peterson, turf product marketing manager. Triclopyr controls ground ivy, oxalis, spurge, violets, chickweed and speedwell, among others, while clopyralid controls such weeds as musk thistle, clover, dandelion and plantain.

Research on Confront herbicide was conducted over the past three seasons by Dow specialists working with major universities. Results showed excellent control of major broadleaf weeds and performance on a level equal to or better than standard three-way herbicides in the field studies.

Confront will be introduced in November at the annual Professional Lawn Care Association of America Convention and Trade Show, Las Vegas, Nev. It will be available for sale after Jan. 1.

COMPUTER SEMINAR SERIES SET FOR AUGUST, OCTOBER

Thornton Computer Systems of Maineville, Ohio, is offering a series of computer seminars titled "Considering Computerization for Your Company."

Designed specifically for owner/managers and other executives within the green industry, the programs are held in Cincinnati at Thornton Computer's offices. The two-day seminars will be offered in August and October.

Attendees will benefit from small group presentations and discussions about green industry computer systems, and a tour of the landscape, nursery and garden center operations of Thornton Environmental Industries, all of which are computerized.

In addition, there will be a hands-on walk-through of SLICE — the System for Landscape/Nursery Information Control and Estimating — developed by Thornton Computer and currently in use in more than 200 green industry businesses.

Dates for the seminars are Aug. 28-29 and Oct. 2-3. Call 800/543-7249, 800/582-6129 in Ohio, for more information.

CAMPAIGN HERBICIDE RECEIVES EXPANDED LABEL

The Environmental Protection Agency has approved an expanded label for Cam-

(continued on page 12)

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*Ask your Exmark dealer for complete details on the Exmark Parts Plus™ program. Some restrictions apply.



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Need more information on the 1989 Green Team Conference and Trade Show?

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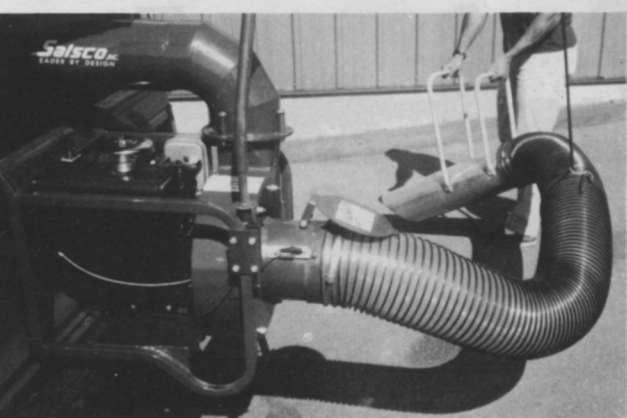
Manufacturer's suggested list price: \$3,999.99*



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Manufacturer's suggested list price: \$1,249.00*

716 LOADERVAC TRUCK LOADER

The 716 (and 720 option) is designed for those big clean-up jobs. Powered by a 16 h.p. Kohler, the 3/8"-thick steel impeller blades make leaf removal easy and efficient. Great options are available to make the 716 an independent trailer unit.

Manufacturer's suggested list price: \$2,822.99*

BY DESIGN



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Manufacturer's suggested list price: **\$2,879.00***



452 DROP SPREADER

With a big 50"-wide hopper, the 452 is the largest of the 450-Series Self-propelled Drop Spreaders. This fast, maneuverable machine can cover 57,200 square feet per hour.

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375 DEETHATCHER/909 HOPPER

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News

(continued from page 8)

paig[®] herbicide from Monsanto. The new label allows Campaign to be tank-mixed with Oust or atrazine and permits application in bahiagrass or tall fescue.

Campaign was used last year throughout the South for summer release of actively growing bermudagrass. The new label allows Campaign to be used for bermudagrass release in the spring prior to green-up, release of bahiagrass and spring and summer applications in tall fescue.

Used alone, Campaign controls or suppresses a wide variety of broadleaf weeds, vines and grasses.

In dormant bahiagrass, the label recommends applying Campaign when winter annuals are in early growth stages, after they have germinated. Treatment when bahiagrass is dormant avoids delays in green-up and helps minimize injury.

Campaign may be applied when tall fescue is four to six inches in height, prior to seedhead emergence, to control or suppress vines and winter annuals.

For more information on Campaign herbicide, write to Campaign, Monsanto, Industrial Products Group, Box M2L, 800 N. Lindbergh Boulevard, St. Louis, Mo. 63167.



New 33,000-square-foot warehouse at Lofts/Great Western Seed Co.

LOFTS SEED EXPANDS WEST COAST FACILITY

Lofts Seed Inc., recently expanded its West Coast facilities to produce and store more turfgrass seed.

Lofts' West Coast division, Lofts/Great Western, has added more than 5,000 acres for turfgrass seed production. Storage and loading facilities have increased accordingly.

Four to five million pounds of grass seed at one time can be housed in a new warehouse, which has 33,000 square feet and three loading docks.

BROCCOLO RECOGNIZED FOR OUTSTANDING ACHIEVEMENT

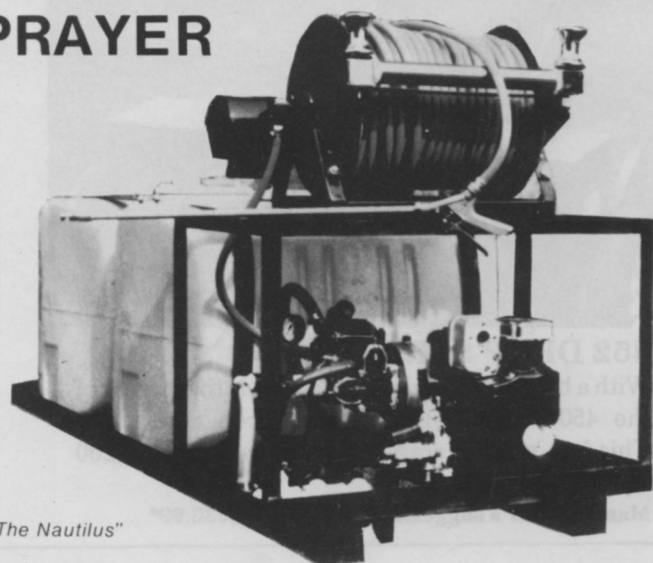
Laurie Broccolo, plant health director at Ted Collins Tree & Landscape, Victor, N.Y., was recently honored by the Community College of the Finger Lakes for outstanding achievement in the lawn and landscape maintenance industry.

The award cited Broccolo for educating the public about modern plant health care methods in connection with her work at Ted Collins and the New York State Lawn Care Association. Broccolo was a 1978 graduate of the college. ■

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Pump: 450 psi/10.5 gpm Udor Tau 35 diaphragm
Motor: Briggs IC 5 hp or Optional Honda
Hose: 300' X 1/2" 600 p.s.i.
Hose Reel: Electric rewind Hannay or Nordic
Gun: Choice of lawn or ornamental
Tank Sizes: 2 X 100 gal.
2 X 150 gal.
2 X 200 gal.

OTHER OPTIONS AVAILABLE



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ASSOCIATION NEWS

THE AMERICAN ASSOCIATION OF Nurserymen, in cooperation with the Small Business Legislative Council, is offering a guidebook to assist business owners in complying with Section 89 of the new tax code.

The 90-page guide, "Unraveling the Mysteries of Section 89: A Business Owner's Guide to Providing Employee

Benefits Under the Tax Code," simplifies the compliance process as much as possible. It includes explanations of qualification rules, statutory benefits, compliance dates and rules, sanctions and a copy of the tax regulations.

The recent Internal Revenue Service regulations are designed to ensure that employers provide ben-

efits such as health, life and accident insurance to all workers, regardless of compensation. Previously, employers were required to provide equal access to benefits, but under the new law they are required to ensure equal participation in benefit packages.

All grower, retail and landscape contracting firms must comply or face IRS penalties that include loss of tax deductions for employers and additional taxes on employees.

The guide is \$30 per book for AAN members and \$60 for nonmembers. Make checks payable to the American Association of Nurserymen.

The **National Landscape Association** is now accepting entries for its 20th Annual National Residential Landscape Awards Program. All single



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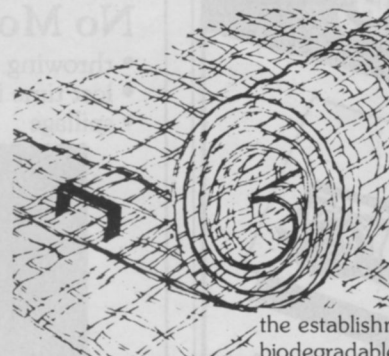
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Projects chosen for national recognition will be announced in February 1990 at The Management Clinic in Louisville, Ky.

Thomas Delaney, has been appointed director of state government affairs for the **Professional Lawn Care Association of America**. He will work directly with state and local governments on lawn maintenance issues.

After working with the pesticide division of the Georgia Department of Agriculture for 15 years, Delaney brings a wealth of knowledge and contacts to the industry. His responsibilities have included administration of the pesticide applicator certification, recertification and licensing program.

Delaney is active with the American Association of Pesticide Control Officials, currently chairing the chemigation committee and representing the organization on the EPA's Interagency Pesticide Usage Data Planning committee.

Delaney will be responsible for moni-

toring state legislative, regulatory and administrative activity which affects the lawn maintenance industry.

A new organization to fight water restriction bills plaguing landscape contractors is here. **The Green Industry Council**, based in Sacramento County, Calif., will serve as a forum for landscape industry representatives to protect the interests of the landscape industry.

"Our goal is to strengthen our numbers on issues that threaten the landscape industry," said Barry Cohen, council president representing the **California Landscape Contractors Association**.

The council emerged from an organization based in the San Francisco Bay area. Now a statewide organization, members include trade associations, individuals, companies and public agencies with in or associated with the green industry.

In addition to Cohen, its members are Jack Christensen, California Association of Nurserymen, vice president; and Pepper Putnam, Irrigation Association, secretary/treasurer. Local councils will also be formed to carry out the groups's objectives on a regional basis.

Thomas Watschke, professor of turfgrass science at Pennsylvania State University,

was presented a distinguished service award by the **Pennsylvania Turfgrass Council** for outstanding leadership and contributions to the turfgrass industry.

He is widely recognized for his research in turfgrass weed control, growth retardation, turfgrass physiology and microclimate and most recently for his water quality research program which encompasses both runoff and percolating perspectives.

Alex Shigo, one of the foremost authorities on trees in the world and Dayna Waitley, a nominee to the President's Council as Woman of the Year, are among the featured speakers for the **Green Team Conference and Trade Show**, St. Louis, Mo., Nov. 9-12.

Sponsors of the three-day event are the **Associated Landscape Contractors of America** and the **Professional Grounds Management Society**.

Shigo has been working with trees for 30 years and has lectured extensively across the United States, Canada, Europe and Australia. Recently retired from the U.S. Forest Service, he is an internationally recognized researcher credited with the development of expanded interpretations of decay based on new concepts of compartmentalization and microbial succession. ■

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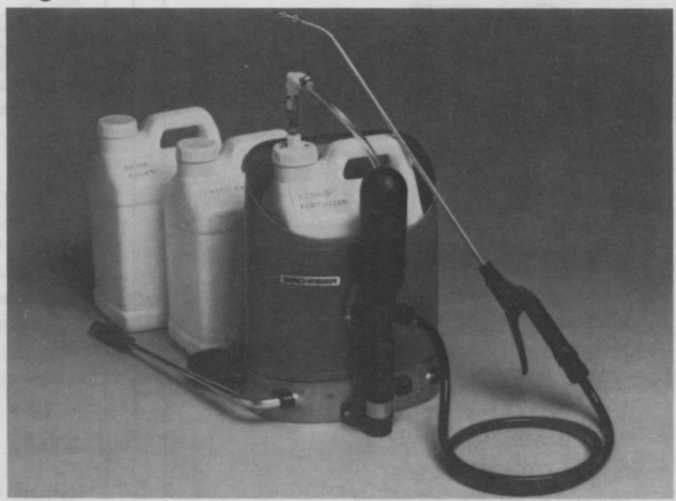
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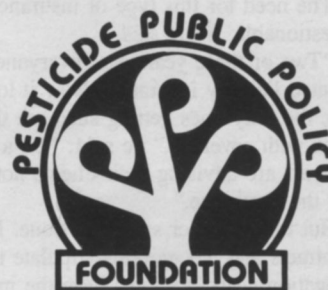
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and their trade associations in the lawn, tree, PCO, golf course, right-of-way, and landscape industries. 3PF is an organization of people like yourself -- people committed to a reasoned pesticide public policy.

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IRRIGATION

IRRIGATION ASSOCIATION SEARCHING FOR LIABILITY COVERAGE

The quest for liability coverage has been a long and rocky journey for irrigation designers, and the rough ride isn't over yet. While an overseas company has begun offering a liability insurance plan and the Irrigation Association is working on one of its own, irrigation designers are at a crossroad.

According to Bob Sears, executive vice president of the Irrigation Association, the problem of getting the insurance is not a financial one.

"It's more difficult than costly," he said. "Irrigation designers represent such a small business potential for insurance companies that none are too excited about setting up a program."

The need for this type of insurance is questionable, Sears said.

"Two or three years ago, everyone wanted liability insurance. Now it looks like the only ones getting sued are the ones with coverage," he said. "So a lot of lawyers are advising their clients not to get the insurance."

But this is easier said than done. Many contracts and bid requests stipulate that irrigation designers must have the insurance. In other words, to get the job you must have the coverage.

Recently, Leatzow & Associates of Glen Ellyn, Ill., began offering a liability insurance plan for irrigation designers. The coverage is underwritten by Professional Protective Insurance Ltd., headquartered in the British West Indies. While the IA accepted an advertisement for the program for publication in the association



Photo: Rain Bird Turf Division.

newsletter, the IA stressed that it did not endorse the plan.

"It's not that we've decided not to endorse it," Sears said, "but there has not been a decision made to endorse it. I feel we can do better for our designers with a major, domestic carrier."

The association itself is working on providing irrigation designers with such a domestic plan. According to Sears, the IA's insurance broker is attempting to set up a program with green industry groups with similar exposure and risk. This too presents a challenge.

"It's difficult to find groups that have

similar job descriptions and similar risks," Sears said. One group under consideration is fire sprinkler system designers, whose risk is much greater than that of irrigation designers.

Despite the difficulties, Sears said, he remains optimistic. "I have high hopes that our insurance program manager will put something together. Meanwhile, Leatzow & Associates offers an alternative for those guys who have to have the insurance."

EWING IRRIGATION BUYS PACIFIC PRODUCTS INC.

Ewing Irrigation Products recently purchased Pacific Products Inc., according to Ray York, chief operating officer of Ewing Irrigation.

The acquisition gives Ewing control over management and operations of Pacific Products' California locations in El Cajon, San Marcos, Rancho Cucamonga and Orange. Ewing will also reopen Pacific Products' Carlsbad office.

Ewing Irrigation, originally founded in 1922 as Atlas Lawn Sprinkler, is one of California's oldest turf irrigation distributors. With the addition of Pacific Products, the state's oldest Rain Bird Master Turf Distributor, Ewing becomes the largest wholesale irrigation distributor in California with 21 statewide locations, according to the company.

CERTIFIED IRRIGATION DESIGNER EXAMS SET

The Irrigation Association will hold Certified Irrigation Designer exams twice each month through November and once in December. The exam schedule is: Aug. 10, Sun Valley, Ind.; Aug. 28, Laurel, Md.; Sept. 5, Lethbridge, Alberta; Sept. 7, Phoenix, Ariz.; Oct. 23, Detroit, Mich.; Oct. 30, Grand Rapids, Mich.; Nov. 12, Anaheim, Calif., (at the IA Expo);

(continued on page 66)

U.S. IRRIGATION DELEGATION TOURS U.S.S.R.

LAST MONTH, RICHARD Griffin, P.E., professor emeritus from Utah State University, led an international delegation of irrigation and drainage specialists on a three-week technical exchange to the Soviet Union.

The Citizen Ambassador Program of People to People International is offering the program in cooperation with the Union of Scientific and Engineering Societies in the Soviet

Union.

The delegation attended special briefings, small-group discussions informational gatherings and participated in site visits with their Soviet colleagues. Following a predeparture briefing in New York, the delegation visited Moscow, Minsk, Kherson, Tashkent and Fergana.

The Citizen Ambassador Program, under the auspices of People to People International, promotes friendly relations

among all countries through scientific, professional and technical exchanges in medicine, law, science and technology, agriculture, energy and resource development, building science and business.

For more information, call Professor Griffin, 801/359-5010, or Max Gerber, director of agricultural programs, Citizen Ambassador Program of People to People International, 509/534-0430.

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ELECTRONIC PLANT SEARCH SERVICE ON-LINE FOR GREEN INDUSTRY

A PLANT RETRIEVAL SERVICE ALLOWING buyers and sellers of ornamental plants and foliage to locate hundreds of plants through a computer program has been introduced by Betrock Publishing Inc., Coral Springs, Fla.

Started in early May and called PlantSearch, the program is designed to give landscape architects and contractors, nurserymen, plant brokers and interiorscapers the ability to locate plants instantaneously across the country.

"This stands to revolutionize the plant searching business as we know it today," said Irv Betrock, company president. He added that the service can save time and money for its subscribers.

With the service, a subscriber can eliminate time-consuming telephone calls and travel spent searching for plants through immediate access to a daily updated list of more than 10,000 plants from

500 nurseries.

As subscribers to PlantSearch, industry professionals can access an updated electronic library just by dialing a toll-free line through a personal computer any time of the day or night. It is accessible with an IBM compatible personal computer and a communications modem.

Plants are cataloged by their scientific name, common name, size and the nursery's name. It also provides information about specific characteristics such as food and water requirements, soil suitability and salt tolerance.

Another feature is a nursery and landscape bidding package. This permits subscribers to define projects they want to bid on, select the desired plants and prices and prepare a bid sheet.

The nurseries involved in the service are those that already advertise in Betrock's PlantFinder magazine, said April

Hutchinson, an advertising manager.

They are mainly located in Florida with others in Texas, Louisiana and Georgia.

To receive the service, a one-time hook up fee of \$225 is charged along with a \$50 monthly fee and \$5 connect time costs assessed in 10-minute increments. Subscribers receive a personal ID and password, and can even lease a personal computer from Betrock.

Denis Bedu, the program's designer and Betrock information analyst, said about 25 people have registered for the service, and that more than 200 people have requested information.

Bedu said he demonstrates the system to people in Florida. For others expressing an interest, Betrock will assign them a temporary ID and password and send them a diskette along with a user's manual for them to test the service on their own time. ■

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Power Equipment Means Profit to Some, Racket to Others

IT STARTED WITH A HUM THAT CONTINUED TO RE-verberate throughout the beautifully landscaped neighborhoods of Los Angeles until one day, in 1986, it caught the attention of a powerful councilman who threatened to send the blower industry spiralling.

Similar "noise" incidents are taking place in Maryland, New Jersey and all across the country, resulting in legislation to severely limit or ban the use of the blower. Legislation is pending or approved in 100 communities.

With the exception of a few communities, efforts to ban or put strict limits on the use of power blowers have failed to date. Protests raised by environmentalists and homeowners over the past two and a half years, however, are far from over.

Such has been the tumultuous life of the power blower, considered by lawn and landscape contractors to hold the key to labor and time shortages in the green industry. But the tool that modernized many landscape businesses is now being attacked for its drone rather than complimented for its service.

By their nature, power equipment machines generate noise of some sort, but it's the power blowers that have caught the attention of local legislators particularly because the equipment is run at a high rpm the entire time it's in use. It's not so much a problem for work sites, but more so for residential areas.

"People zero in on power blowers because they're used for a long period of time — they have a proverbial whine to them," said Robin Pendergrast, a partner in the International Marketing Exchange, North field, Ill.

Pendergrast has been actively involved in the noise pollution controversy, testifying before city governments on behalf of the power equipment industry.

"People will become more and more conscious of the issue in the 1990s. It's something we can't avoid," he said. "The industry better be prepared to take a more aggressive posture."

The impeller, which generates air and forces the blower to whisk away grass clippings, leaves or other debris, is actually the culprit in this power equipment siege. The impeller can be altered to a certain degree, but too many changes could negatively affect performance, according to industry experts.

In most cases, legislation is calling for decibel ratings between 70 and 75 dba from a distance of 50 feet. Tests are being developed by the American National Standards Institute for testing dba levels.

Blowers come in a variety of shapes and sizes, as well as in the form of electric- or gas-powered. Most professionals prefer the gas-powered engines because of their portability, but their drone is bad news to others.

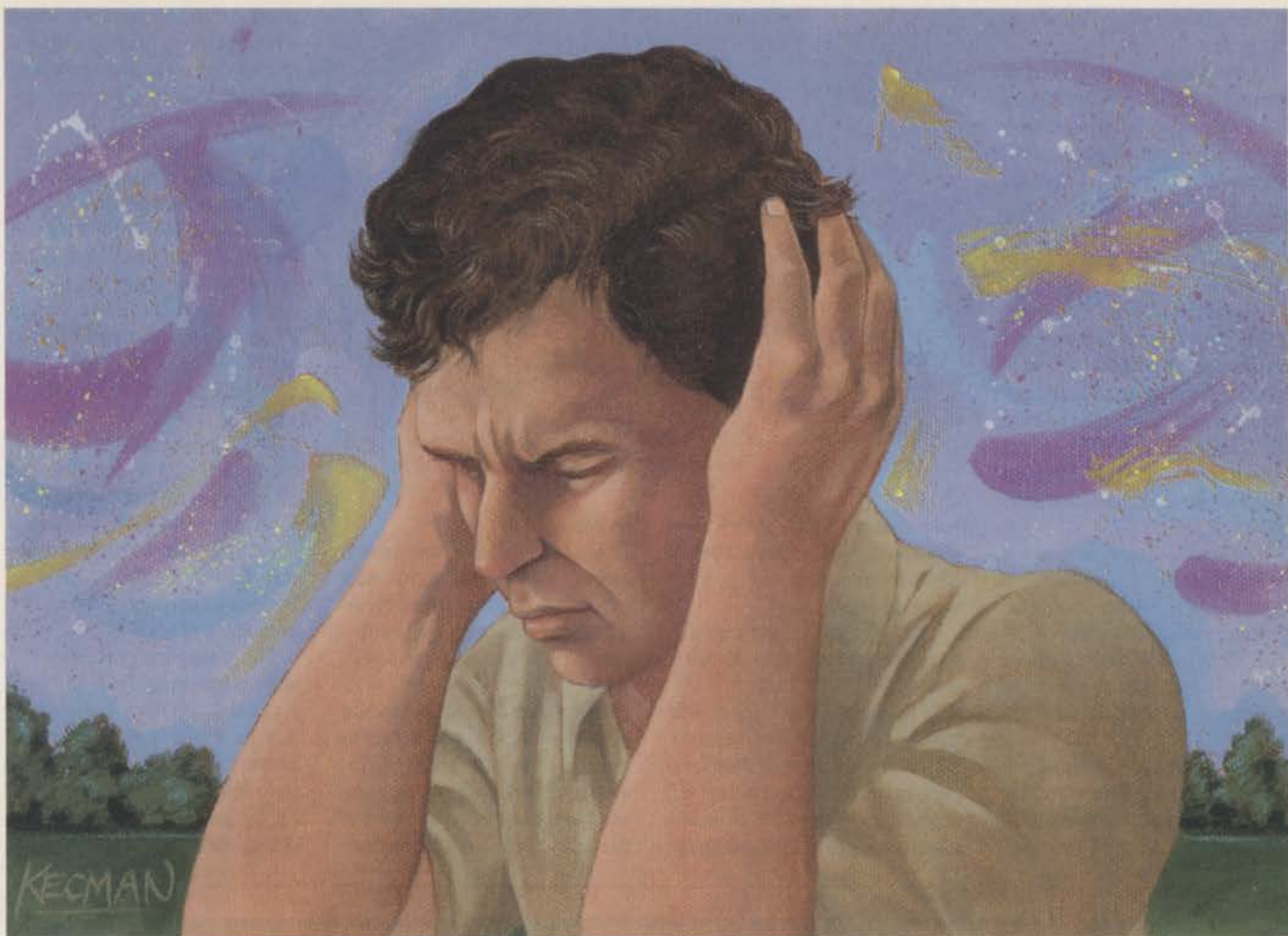
"We measure our noise levels, but

Source: USA Today

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Power blowers are at the center of noise pollution controversies in more than 100 U.S. cities.
Illustration: Milan Kecman

there's no magic solution to making our blowers quieter," said Kirby Mitchell, vice president/operations, Maruyama U.S. Inc., Redmond, Va. "Other than radical new designs, there's no way to dampen the air intake."

While the blower remains engulfed in controversy, many forget the origin of the blower. The first blowers appeared on the scene in the late 1960s, and were primarily used for large-scale maintenance operations such as sports arenas. But during the drought years of the late 1970s, the market for blowers skyrocketed. Both professionals and homeowners turned to blowers as a substitute to using water for cleanup.

As early as 1974, blowers were promoted in California as an alternative to cleaning with water.

Not only does the blower save water, it gives contractors more opportunity to service a larger customer base. Attempts to restrict the use of the blowers may have the end result of higher fees for customers of lawn and landscape maintenance firms.

Condominiums, schools, hospitals, municipal organizations, parks and recreation centers, country clubs and community centers are among those who find blowers indispensable for maintaining grounds.

In addition, tree surgeons use blowers to clean up sawdust, leaves, twigs and small branches.

The first hint of trouble came in August 1986 when Los Angeles became the first of some 100 municipalities to initiate activity banning power blowers. Other municipalities in California as well as in Oregon, Florida, New York and New Jersey would follow in similar attempts to legislate some control over the use of power blowers.

The short-term effect has been the passage of ordinances — in one form or the other — with many more pending. Because there is confusion over how far this type of legislation can be carried and even more confusion over how to enforce noise level ordinances, most cities are limiting their actions to time-use ordinances.

For example, some cities have chosen to ban the use of the blowers

in the early morning or late evening hours.

In Pasadena, Calif., a recent attempt to ban all power blowers failed thanks to lobbying efforts by a group of manufacturers, contractors and concerned organizations. For that city, the noise issue as it relates to power blowers has temporarily taken a new direction.

The city developed a program that requires users to have their equipment reviewed and licensed prior to issuing an annual business license. Since the program was enacted in July 1987, power blower complaints in the city are said to have decreased dramatically.

Pasadena's noise ordinance states that the noise emanated from a power blower should be no louder than 70 decibels at 50 feet. Officials in that city have acknowledged, however, that the ordinance is very difficult to police.

Ventnor City, N.J., has an ordinance preventing both commercial and consumer users from using either a backpack or hand-

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4. Check the condition of the blower, including air intakes and air filter, to make sure the unit is operating properly.
5. Make sure the power blower's muffler is in good working order.
6. Before using a blower check wind direction.

held blower to blow debris into streets or adjacent lawns. The ordinance mandates the use of vacuum attachments.

The city also implemented a time-use restriction in its ordinance.

In Palo Alto, Calif., the power blower noise issue nearly made it to the ballot stage. It didn't, in part, because the city council realized that enforcement of an ordinance would tie up too many

police officers.

As an alternative, the council looked toward education: educating users to regulate themselves and encouraging manufacturers to develop quieter equipment.

Legislation against noise pollution is costly, and more communities like Palo Alto are opting for an educational program to make users and manufacturers aware of the problem. Users are being en-

couraged to use common sense when operating their equipment. Manufacturers are being encouraged to develop quieter equipment.

The most recently passed legislation comes from Montgomery County, Md. In that county, both landscape contractors and consumers are prohibited from operating a backpack leaf blower that has a sound level exceeding 75 dba at a distance of 25 feet in any direction at any time.

In addition, effective July 1, 1990, the sale or use of a blower with an average sound level exceeding 70 dba at a distance of 50 feet from the leaf blower is illegal. One exception: machines purchased or manufactured before July 1990 can be used by businesses until July 1995 and by homeowners until 1998.

The Montgomery County bill was first introduced in 1988, when a council member complained that he couldn't have a normal conversation in his sixth-floor office while a leaf blower operated on the ground outside.

Legislatively, noise pollution

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is not a major concern in Cudahy, Wis., but it's a very real concern for both the professional and the consumer, according to Ron Kujawa, president of Kujawa Enterprises Inc.

"If it's ignored, we'll have a real problem," he said. "It's a situation that can generally be solved by using common sense."

Kujawa Enterprises provides all employees with ear plugs, and in some cases ear muffs, for those working around noisy power equipment. Kujawa said he didn't anticipate serious legislation problems spreading to Wisconsin, since the state is a bedrock of power equipment manufacturers.

While most major manufacturers continue to make improvements to curtail noise, education among end-users, is also necessary according to Pendergrast.

"Common sense definitely comes into play here," he said. "It's part of the quality of life issue."

Common sense includes operating the equipment at respectable

hours of the day, operating one rather than several power equipment pieces at one time and making sure the equipment is in proper running condition before using.

As local legislation becomes more prevalent, questions are arising over a city's authority to enforce such regulations. The Occupational Safety and Health Administration sets regulations governing decibel levels with many industry manufacturers imposing more strict regulations on their own products. With these parameters already in place, what gives cities the right to pass even further requirements, lawn and landscape contractors are asking.

To address growing industry concerns over noise pollution, The Homelite Division of Textron Inc., Charlotte, N.C., has started an ongoing program in the development of low noise level equipment.

In anticipation of sound test procedures and labeling being required in the future, Homelite is developing design refinements for

power blower and string trimmer products including a state-of-the-art exhaust system featuring a special impeller design, low-tone air intake system with a large volume muffler with three silencing chambers.

"Most manufacturers are revising their units or publishing unit dba levels," said Fred Pascarelli, a Homelite marketing manager. "Right now we're in the process of industrywide noise level testing. We're testing competitors units and passing them on to the next company. We're trying to control ourselves before the legislature does."

Poulan Weed Eater, Echo, Red Max, Tanaka and Snapper are among the companies involved in the voluntary testing.

The testing of dba levels doesn't add to the price of equipment, but equipment redesigns and large mufflers do.

As evidenced in California, manufacturers see noise pollution controversies thriving in affluent areas and neighborhoods where there's more likely to be people home at all hours of the

day. Beverly Hills, for instance, has outlawed gas power blowers at all times.

"They get annoyed by the blower or string trimmer. It's an easy target compared to a garbage truck," said Bill Chambers. "A vocal minority does have an impact."

Since new product designs can run into the millions of dollars, Chambers said, attempts should be made to stress the importance of blowers and other power equipment tools in today's society until future designs can accommodate better mufflers and other noise reducing materials.

The fight against gas-powered equipment is expected to continue in future years, even taking in mowers and other power tools. If the noise pollution controversy hasn't yet reached your neighborhood — and as long as blowers continue to be used — chances are it will. — *Cindy Code* ■

The author is Editor of Lawn & Landscape Maintenance magazine.

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Blowers, Vacuums, Sweepers Taking the Industry by Storm

THE BLOWER, SWEEPER, vacuum industry, as a whole, is going strong. Landscape contractors want convenience, accessibility and durability in these machines, and manufacturers are willing to oblige.

Some manufacturers are improving existing units or engineering entirely new lines to meet lawn and landscape maintenance demands. End-users find the assortment of equipment available to their liking, even to the point of adding blowers, sweepers or vacuums to current inventories.

Manufacturers also see many of these landscape contractors expanding their markets because of the availability of blowers, sweepers and vacuums.

For example, said Bob Tracinski, division manager of media relations for Deere & Co., Moline, Ill., backpack power blowers will always have a place in the industry. "And not just to remove leaves, clippings and debris on lawns, but also for cleaning beaches, ballparks and spectator seats. If a landscape contractor has accounts such as ballparks and arenas, blowers are an essential tool in those markets."

Tracinski said Deere has a walk-behind unit that vacuums or blows debris "at the flick of a switch. The flexibility is tremendous when there's a skeleton crew or if the job site requires both operations."

He also said there is a pull-behind tractor designed specifically to pick up debris that clogs other equipment. "There are glass bottles, cans, plastic bottles and other junk that ruins some units. The pull-behind tractor shreds paper, leaves and grass;

crushes cans; and grinds up glass or plastic bottles. The machine compacts materials for disposal or compost. And there's a tube on the side of the unit for inserting a vacuum hose for use around shrubbery."

DRAMATIC ADVANCEMENTS. Bill Coates, president, Billy Goat Industries, Lees Summit, Mo., said the blower, sweeper, vacuum industry "has progressed dramatically."

These pieces of landscape equipment reduce bulk handling of debris, Coates said. They are time-saving and cost-efficient.

"You can do three lawns using blowers, sweepers and vacuums in the time it takes to do one lawn using five guys with rakes," Coates said.

He added that the walk-behind blowers have more power than the backpack units and are used where there is a large quantity of leaves and debris. "Dethatchers are also being used in conjunction with wheeled, walk-behind blowers, enabling the landscaper to do two jobs in one."

Hand-held blowers, however, are especially useful for light cleanup, said Mike Packer, vice president/sales, Bunton, Louisville, Ky.

"But backpack blowers have more velocity and blow wet leaves stuck in shrubbery. Blowers should be made with easy removal of the engine for serviceability," he said. "Landscape contractors don't have the time to fool around with equipment."

Packer said the commercial use of blowers, sweepers and vacuums "is the fastest growing segment in the industry, especially within the next 10 years. And you'll see some consolidation. There are just too many blower manufacturers out there. More and more are

getting into the business. Consolidation is inevitable. I'm very optimistic about the future of this industry."

Blower use hasn't scratched the surface of the lawn and landscape maintenance industry, said Tom Barrett, vice president/sales, Atwater Strong, Atwater, Ohio. "There are a hell of a lot of blowers sold annually, but the blower industry hasn't been exposed to lawn and landscape advertising as it should. Advertising and direct mail have been a boon to our business."

Barrett said the small backpack blower is perfect for landscape contractors and lawn maintenance companies. "And these guys could expand into the roofing, asphalt, paving and construction areas to get even more use out of their equipment during slow periods. The blower industry is very strong and I don't see it wavering at all."

Volume is less important than power with backpack blowers, said Gene Majewski, product manager, Jacobsen, Division of Textron. The backpack blower is used by landscape contractors and the larger walk-behind units are used in other industries, he added.

"We experimented with hand-held blowers, but decided to stick to the backpack units. There is a need for both in the lawn and landscape operation. They are convenient, and accessibility is a benefit to the end-user," Majewski said. "Besides, the backpack unit is usually a midpriced one and fits in well with budgets."

With blowers maintaining a strong foothold in the marketplace, where does that leave sweepers and vacuums?

"Sweepers and vacuums are used extensively in varying degrees around the country," said Dan Smith of the Parker Sweeper Co., Springfield, Ohio. "Lawn and

Backpack blowers are convenient for removing clippings from residential sidewalks. Photo: RedMax.





Ford New Holland's sweepster clearing pavement (left), John Deere's vacuum sweeper model 141 clearing clippings (top) and John Deere's blower vacuum model 529 bagging leaves (above).

landscape contractors use sweepers and vacuums only if the job requires it. These are not machines you have on hand just in case you might need them."

Smith recommends brushing up on the equipment uses, however. "We're now seeing both the husband and wife working to make ends meet. I think the lawn and landscape industry should go after apartment and condominium contracts. That's the wave of the future. And sweepers and vacuums, used in conjunction with blowers, will fit in perfectly with that trend."

INDUSTRY TECHNOLOGY.

News at Sweepster Jenkins Equipment Co., Dexter, Mich. is that today's landscape contractor and grounds maintenance crews are stabilizing the sweeper market.

"If there's debris to sweep, they'll come to us," said Jim Koch, advertising director. "The technology has grown tremendously. The walk-behind sweepers or those mounted to mowers have changed considerably. We've eliminated the bulk of mechanical moving parts. There's a minimum of vibration and longer drive shaft

life today than even five years ago."

Koch said benefits from this technology include a decrease in manpower as well as savings on equipment repairs and downtime. "There's an evolution going on. A quick-attach loader can be used for various jobs such as sweeping, mowing and loading dirt. These universal-type sweepers are selling well because they aren't as labor intensive as other models."

Technology breakthroughs are not just for the blower and sweeper industries. Vacuums have evolved from major engineering feats as well. With the introduction of easy-mount, quick-detach vacuums, a landscape contractor can just pick up the unit and move on, said Ruth Anne Stucky, marketing director, The Grasshopper Co., Moundridge, Kan.

"This machine mounts to a mower, comes with an audible signal when it's time to dump the debris, and has a dust deflector, preventing dirt from reaching the person using the mower," she said.

Stucky added that the unit is beneficial to the lawn and landscape industry because it is cost-efficient and provides easy access to difficult-to-reach areas. "Pick-

ing up grass clippings, leaves and debris is no longer the time-consuming, labor-intensive chore it used to be."

Salsco President Sal Rizzo said lawn and landscape contractors call him and ask, "I've got 50 customers and I can't spend much money on equipment. What do you have for me?"

Again, thanks to technology, Rizzo can offer his customer a 7.5-h.p. tailgate loader that can be upgraded with a more powerful motor just by removing eight bolts.

"We're in Connecticut, but the landscape contractor in California can go to his local supply house and buy any make motor up to 20-h.p. and install it himself. The contractor doesn't have to order the motor from us and wait several days for delivery."

Salsco manufactures five tailgate loaders and two trailer-mounted units for vacuuming the landscape. "Any one of these machines can be converted to a walk-behind blower," Rizzo said. "We provide the wheel pins and the handle. The conversion process takes about 45 minutes. It's a matter of making it as easy as possible for the landscape con-

tractor. He doesn't need a lot of headaches when it comes to his machinery."

"That's for sure," said Andy Pearson, Pearson Landscapes, Stone Mountain, Ga., a suburb of Atlanta. "We've tried a couple of different makes of hand-held blowers, but they don't produce enough power for our needs — leaf pickup and cleaning out shrubbery. We have five backpack blowers and five walk-behinds. And, believe me, any machine is quicker than rakes and brooms. Our blowers only need remedial maintenance. They save time, labor and money."

Joe Bilskemper, Lawn Care Specialists, Onalaska, Wis., is an advocate of hand-held blowers. He uses three in his landscape operation. "If we did parking lots and school grounds, then sweepers and vacuums would be just as necessary as our blowers. You couldn't do a decent job without all three."

With his clients located in downtown Los Angeles, Darrell Poore's biggest obstacle is pedestrian traffic. Poore of Perfection Landscape Maintenance in Cucamonga, Calif., has seven backpack blowers, three walk-behind vacuums and one parking lot sweeper.

"The blowers are great for cleaning sidewalks," he said. "But I know the noise bothers the people walking around us. If we had larger units it would interfere with sidewalk access."

Another West Coast landscape contractor said he uses his one backpack blower and one walk-behind vacuum to full capacity. Rich Pelucca, Greengate Landscape Maintenance, Cottonwood, Calif., has an account with 80 liquid amber trees.

"The blower makes life a lot easier," said Pelucca, whose office is located 15 miles south of Reading, Calif. "The vacuum has a six-inch hose attachment for getting to difficult areas such as planters. It shreds everything from glass to grass."

Pelucca's only complaint is that parts are hard to get. "We have to go through Sacramento, 160 miles south. It's really inconvenient. But we do the best we can."

In winter, Pelucca said, competition is extreme. The logging industry lays off personnel and those people go into the lawn and landscape field to earn extra



The Bunton backpack blower.

money. "They'll do a job for next to nothing, but they don't have the knowledge comparable to that of a landscape contractor."

Competition is a sore spot for Larry Champagne, All Seasons Lawn Maintenance, Jefferson, La.

"We're just outside New Orleans and the economy is bad. We're up against guys so cheap they don't even carry proper insurance. When you use machinery on the job and don't carry insurance, it's like asking lightning to strike you."

Champagne uses six hand-held blowers in his business, with plans to buy three more. "They are extremely more flexible than backpacks. They maneuver well and are more compact to transport. We just mount them and secure them to the trucks," he said.

Champagne's two vacuum bags "provide professional maintenance. We make the equipment work for us instead of us working for the equipment."

The blowers and vacuum bags used by All Seasons cut man hours. "You have to use your machines to capacity: one man edging, one weeding, another vacuuming. The blowers are used after we edge to give the lawn a finished look."

Machine maintenance is no problem for Champagne. "We have a mechanic on the crew. He's been to several classes and knows the equipment. It's easier and less expensive having him on duty. By the time you wait for parts, pay for them, have the shop repair it and shell out for labor, you may as well buy a new blower."

By using blowers and vacuums, "people trust our work. If you can't achieve a manicured look, you may as well get out of the business," Champagne said.

Competition is also a concern for Stuart Mayer, Sunburst Land-

scape Co., Irwin, Pa.

This landscape contractor is located in an economically depressed area of Pittsburgh where "everyone wants a piece of the action. We have a lot of small landscape clients; not big contracts. The wealthier residents are mortgage poor. They sink so much into a house that they can't afford a landscape service. We're keeping busy, though. We don't hit any home runs, but if we hit enough singles we get there just the same," Mayer said.

Mayer "gets there" by using two backpack blowers and one walk-behind blower. "I wish I could find a more powerful backpack blower. Wet leaves won't move at all when we clean shrubbery. Otherwise, they're good machines."

On the other hand, Randy Setchell finds his five backpack blowers very effective in Hinsdale, Ill., home of Amlings Landscape Services.

"We clean up leaves and get debris off sidewalks quite efficiently. You can't beat the blowers for keeping areas cleaned up," Setchell said. "And they sure beat brooms. Blowers require less labor, less time and should be standard tools of the trade."

A neighbor of Setchell's, Charles McGinty, operates McGinty Brothers in Lawn Grove, Ill. This contractor uses three hand-held blowers to clean up debris. "The market for hand-held blowers is undergoing an evolution," McGinty said.

"Even though the Chicago area is saturated with landscape contractors, I see a bright future for the independents. We may not be part of a large corporation, but we have the advantage of being a client's neighbor. We offer more personal service. And with the right equipment, we can do a very professional job," he said.

An hour north of Denver, lies Fort Collins, Colo., home of Hyland Brothers Lawn Care. Steve Hyland has been in the lawn and landscape business for five years using four backpack blowers and one sweeper.

"We use the blowers for getting rid of leaves and clippings and for putting finishing touches on the edgings," Hyland said. "The sweeper is an important part of our business because in winter we use it for snow clean-up. We get our money's worth out of it."

Triple A Lawn Care, Pocatello, Idaho, carries a hand-held blower on each of its four trucks.

"Blowers clean up debris easily and quickly," said Triple A's LaMont Short. "I'm thinking of getting a walk-behind vacuum, as well. I want a 6-, 7- or 10-bushel bag with a hose attachment. I want to pick up more leaves and do more thorough flower bed clean-up — all those tough spots for us landscapers."

In the Seattle area, one tough job is blowing wet leaves. Ask Dan Jolliffe of P & G Landscaping in Snohomish, Wash. Jolliffe uses two backpack blowers and one hand-held machine in his landscape business. "The hand-held unit isn't powerful enough to blow the wet leaves," he said. "But the backpack blowers get the work done. They are comfortable to wear and easy to operate."

Jolliffe modifies the tubes on his backpack blowers to achieve a range of power. "We made different tube lengths for our various requirements. By shortening the tube, you get more power to the surface area. Especially since this location gets a lot of rain," Jolliffe said. "We use the water to our advantage. By blowing the water from driveways and walkways, we remove mud and leaves at the same time."

Durability, accessibility, convenience and flexibility are keeping the blower, sweeper and vacuum industry thriving.

John King, owner of King Landscaping in Syracuse, N.Y., summed it up best. "I couldn't do without my blower. I have a walk-behind blower that's 20 years old and it works quite well, thank you." — Susan Brokaw Guard

The author is a free-lance writer based in Cleveland, Ohio.

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“WHEN YOU GET off the plane in New Zealand, you need to set your watch back twenty years.”

This sentiment has been stated by several tourists returning from New Zealand. While some of these tourists appear to be a bit surprised at the difference in the pace of life compared to the frenetic East Coast of the United States, most of them find the slower pace very refreshing.

People take time to visit in the streets. Shopkeepers appear to be genuinely interested in their shoppers — and if they don't have the item being sought, they will give directions to a store which does. New Zealanders are very friendly and accommodating — reminiscent of the United States about 20 years ago.

New Zealand is a small country, roughly covering the same area as Colorado. It consists of two main islands — the North and the South Island — and a considerably smaller island, Stewart Island, at the southern tip of the country.

The population of just over three million people is concentrated on the North Island. The country lies at a latitude of 40 to 47 degrees south of the equator, similar to Washington, D.C., to Maine, and is about 1,200 miles east of the East Coast of Australia.

The country is noted for its variety of terrain. During a recent 10-month visit, I saw areas which were reminiscent of the rugged Maine coast line, rolling hills similar to the Kentucky bluegrass, volcanic hills very much like the Pacific Coast Range, extensive flat plains like our Central Plains, temperate rainforests similar to the Olympic Peninsula, mountain lakes 30 miles long and 1,500 feet deep, wide expanses of rugged grasslands which could have been



A typical home in Christchurch, New Zealand.
Photo: Patricia Vittum

transplanted from Montana, and a very rugged range of mountains towering over 12,000 feet above sea level — and that was just on the South Island.

In addition, the North Island boasts active volcanoes, geysers, a geothermal power plant and gorgeous subtropical beaches.

Europeans began to settle in New Zealand in the mid-1800s and found the land and climate to be very suitable for a variety of agricultural endeavors. Sheep quickly became the mainstay of the agriculture base, and several breeds were developed for wool production or meat.

Meanwhile, because the country is so isolated from most of the Western world, more than a thousand miles from Australia, 7,000 miles from the West Coast of the United States, and perhaps 12,000 miles from Europe, New Zealanders quickly became very adept at adapting their supplies and equipment to fit their local needs.

Indeed, “Kiwi ingenuity” became as notable — and every bit as good — as “Yankee ingenui-

ty.” New Zealanders, by necessity, became very independent.

Much of the early settlement of New Zealand came from the British Isles. The settlers brought several British traditions with them, including the importance of maintaining flower and vegetable gardens around the home and establishing public areas as gardens or common grounds. Much of that tradition still persists in New Zealand in the 1980s.

The demographics of New Zealand today dictate that there are some differences in commercial lawn maintenance services compared to their American counterparts. The population on the South Island, 800,000 people, is only about one quarter of the total population of the country. More than 300,000 of those people live in Christchurch and about 100,000 live in Dunedin. The rest of the population is scattered in small

(continued on page 30)

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TURFGRASS QUALITY RATINGS
1-9; 9=IDEAL TURF

CULTIVAR	MEAN
ECLIPSE	5.5
MIDNIGHT	5.4
MERIT	5.3
CHERI	5.2
ASPEN	5.2
VICTA	5.2
PLUSH	5.2
MOSA	5.2
BRISTOL	5.2
COLUMBIA	5.2
MAJESTIC	5.2
BARON	5.2
GNOME	5.2

MELTING OUT (LEAF SPOT) IN SPRING RATINGS OF KENTUCKY BLUEGRASS CULTIVARS 1984 DATA

MELTING OUT (LEAF SPOT)
1-9; 9=NO DISEASE

CULTIVAR	MEAN
ECLIPSE	6.7
ADELPHI	6.7
BANFF	6.7
GERONIMO	6.7
RUGBY	6.7
MIDNIGHT	6.7
ASPEN	6.3
COLUMBIA	6.3
MERION	6.3
NASSAU	6.3
TOUCHDOWN	6.3
A-34	6.0
BIRKA	6.0
FYLKING	6.0

DOLLAR SPOT RATINGS OF KENTUCKY BLUEGRASS CULTIVARS 1984 DATA

DOLLAR SPOT RATINGS
1-9; 9=NO DISEASE

CULTIVAR	MEAN
ECLIPSE	7.3
BARON	6.3
MERIT	6.3
PLUSH	6.3
VICTA	6.3
ASPEN	5.7
CHALLENGER	5.7
GERONIMO	5.7
MONOPOLY	5.7
COLUMBIA	5.3
HARMONY	5.3
MERION	5.3
TOUCHDOWN	5.3
MIDNIGHT	5.3

RED THREAD RATINGS OF KENTUCKY BLUEGRASS CULTIVARS 1984 DATA

RED THREAD RATINGS
1-9; 9=NO DISEASE

CULTIVAR	MEAN
ECLIPSE	7.8
PLUSH	7.7
ADELPHI	7.6
NASSAU	7.6
MONOPOLY	7.4
NUGGET	7.4
ASPEN	7.3
BRISTOL	7.2
HARMONY	7.2
TOUCHDOWN	7.2
MIDNIGHT	7.2
RAM-I	7.1
BARON	7.0
BANFF	7.0
MERIT	7.0
VICTA	7.0
GERONIMO	6.9

PERCENT LIVING GROUND COVER (SPRING) RATINGS OF KENTUCKY BLUEGRASS CULTIVARS 1985 DATA

PERCENT LIVING GROUND COVER
IN SPRING

CULTIVAR	MEAN
ECLIPSE	66.7
RAM-I	66.7
MONOPOLY	64.4
SYDSPORT	63.8
ENMUNDI	62.2
ADELPHI	62.2
MERION	62.2
CLASSIC	62.1
BANFF	61.7
GERONIMO	61.7
CHERI	60.6
KIMONO	60.6
MOSA	60.6
TOUCHDOWN	60.6



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New Zealand

(continued from page 28)

towns, populations under 500, a few small cities and on countless large sheep stations.

There are a few individuals who are making a living as commercial lawn maintenance specialists in Christchurch, but most of their income appears to be derived from "total service" contracts, including mowing, dethatching and other services on upper class properties.

Most middle class Christchurch homes have lawns of less than 2,500 square feet. There are relatively few insect problems on the bentgrass and perennial ryegrass lawns. The humidity remains very low during the summer months around Christchurch, so disease problems are minimal. Most lawns are mowed frequently at very low, one-half to three-quarter-inch heights, and many weeds are unable to compete under such pressure. As a result, there are relatively few pesticide applications made to lawns in the Christchurch area.

Perhaps the main deterrent to the establishment of a healthy lawn maintenance service industry is the British tradition of gardening. Many South Islanders actively enjoy gardening, flower and/or vegetable, and by extension, they seem to prefer to care for their own lawns.

Since pest pressure is not nearly as great as it is in our Washington, D.C., area for example, most families can maintain very attractive lawns with very little expertise or time commitment. As a result, they do not see the need to hire a commercial firm to do the things they enjoy doing themselves.

There is an interesting dichotomy in New Zealand. It is widely perceived as one of the few places left on earth which has been relatively unspoiled by overexploitation by humans. Protection of wilderness areas and restoration of overforested sections is perceived as crucial to the country's survival, particularly in enhancing New Zealand's position as a tourist mecca.



The Morgan and Pollard sod farm located just outside Christchurch, New Zealand. Photo: Patricia Vittum.

Meanwhile, the national economy has been virtually dependent on agriculture in past decades. As a result, most people have at least a working understanding of the needs of agriculture and some perception of the benefits, as well as the risks, of pesticides. So there does not seem to be an active groundswell attempting to regulate or restrict the use of pesticides in the home setting.

Not so long ago, farmers were over-committed to wool and lamb production, and the national economy was completely, and irrevocably, tied to the international market for sheep products. After a few bad years, the federal government, through its agricultural research and extension arms, actively encouraged diversification. As a result, the Canterbury Plains, which surround Christchurch on

land harvest is six months after the American harvest.

At least a couple local companies have made commitments to breeding new cultivars of fine turfgrasses. Much of that work involves endophytic ryegrasses, which provide a measure of tolerance to several surface feeding insects. In fact, these endophytes were first discovered in New Zealand — because they induce a condition known as "staggers" in the sheep.

If the endophyte population becomes high enough in a paddock, the sheep begin to stagger and tremble violently. It was a serendipitous discovery that revealed that these endophytes can also have a beneficial effect.

One of the main ryegrass pests in New Zealand is the Argentine stem weevil, a very close relative of our annual bluegrass weevil, and the same endophyte which induces staggers also makes the plants unpalatable to the weevils.

The demographics of the North Island are strikingly different from those of the South Island. As a result, there already is a more active lawn maintenance industry and the potential for growth is considerably greater.

First of all, the two New Zealand cities which are most well known internationally are located on the North Island.

Auckland is the largest city, with a population of around 700,000, and is the primary international port of entry. It is situated on a lovely harbor and many of the upwardly mobile people have moved out to suburban settings.

Not unlike certain American cities, some of these people prefer

to hire someone to handle the technical aspects of maintaining a lawn.

Wellington, population around 300,000, is the national capital and has many similarities to San Francisco — cosmopolitan, steep hills running right down to the coast, rugged weather conditions, particularly strong winds.

Like Auckland, many of the visiting diplomats prefer to leave the maintenance of a lawn — or the entire landscape — in the hands of a professional firm. So both Auckland and Wellington support small, but vigorous commercial lawn maintenance industries.

Not coincidentally, the challenge of maintaining vigorous turf is greater in Auckland, primarily because of increased humidity, leading to considerable disease pressure.

Meanwhile, much of the remainder of the population in the North Island is centered in towns, populations around 2,000, and small cities, populations from 10,000 to 75,000. While there is still a considerable rural population, there is a much larger urban and suburban population than on the South Island.

There are several small companies which have begun to offer lawn maintenance services in these small cities within the past five years. For the most part, they seem to be experiencing the same sorts of things which our lawn maintenance service experienced in the early 1970s — and they are watching the American lawn maintenance service now with great curiosity.

They hope to learn from some of our mistakes and to avoid some of our problems. With the tradition of independence and ingenuity, they should do very well indeed. — Patricia Vittum ■

The author is an associate professor of entomology at the University of Massachusetts at Amherst Suburban Experiment Station. Vittum, a regular contributor to Lawn and Landscape Maintenance magazine, recently spent a year in New Zealand researching the effects of local weather patterns on the Argentine stem weevil which attack ryegrass paddocks in New Zealand. The stem weevil is a close cousin of the annual bluegrass weevil which damages turf in the U.S.

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Most New Zealand maintenance contractors derive their income from full-service contracts from services performed on upper class properties.

the East Coast of the South Island, have become a major turf seed production area, particularly for the bentgrasses and some ryegrasses.

The climate is virtually identical to that of the Oregon and Washington seed production areas, and of course the New Zea-

Metering Systems: Bright Hopes, Dashed Dreams

"I WAS THE ONLY ONE who had a metering system that the industry wanted," said Walter "Bud" Houston, president, Encap Products Co., Mount Prospect, Ill. "I lost a hell of a lot of money developing it, but I had to walk away from it. It's a sad story, for the need is there. But no one has successfully put together the package yet."

Metering systems, or devices which would help applicators measure the amount of product being sprayed, would be an obvious benefit, since over and under applications of chemicals have long been a problem in the spraying industry.

Houston said that such devices may soon become not only an added convenience, but also a requirement, due to governmental and public concerns over the nature and amount of chemicals going into the environment.

Houston envisioned a complete metering system which included an electronic controller, a calculator either hand-held or bolted to the side of the box; a flow meter which sent electronic messages to the controller as to how many gallons were being sprayed; a solenoid valve which could shut off the flow on the spray gun; a relay box that boosted power for the solenoid; a printer which documented the amount sprayed; and, finally, a containing black box.

The solenoid and printer were to be offered as optional features; certain types of applications might not require a solenoid to start and stop the spray. And, conceivably, if a company had one central printer which could be uploaded from a module, it wouldn't need 20 different printers in 20 different trucks.

In addition, there were problems associated with both the

solenoid and printer. "Solenoids have efficiency problems of their own," Houston said. "Irrigation people use them all of the time and always have problems. The bugs are not out."

Houston said printers "are pretty well developed, except the cost is high on short production runs for electronics. They usually sell in quantities of 10,000 to 100,000, so if you try to buy 500, they're very expensive."

Without the hard copy provided by a printer, metering systems are seriously hampered. "They can't provide the documentation the trade is going to be increasingly expected to provide to prevent under or phantom spraying on one hand, or on the other hand, the over application of toxic chemicals," he said.

The biggest problem, Houston said, is "nobody has a flow meter that works. We have met and talked to everyone in the United States involved with these products and they all have problems." Houston

explained that industrial meters that are quite efficient, workable and accurate do not readily adapt to lawn or pesticide sprayers out in the field or on the road.

"Commercial industrial flow meters are working on stationary systems, transferring chemicals from one stationary tank to another, such as gas into a car. Most of the compounds are oil-based, and tend to lubricate the flow meters so they don't clog up," he said. "But on lawn and pesticide applications we have a truck bouncing down the highway, with a vibrating pump, a vibrating motor and all kinds of chemicals, including fertilizer and wettable powders. Industrial meters are not engineered to deal with these factors, nor are they readily adaptable."

Another problem area is pressure variation. Whereas a filling station will always maintain the same pressure rate, lawn and landscape spraying involves varying the pressure for all kinds of reas-



Metering systems could help applicators measure the amount of product being sprayed, and cut down on over and under application of chemicals. Photo: Scienco Inc.

ons. Yet another concern is interrupted flow, in which an applicator may spray for five to 10 seconds, then stop and start again.

"All of these combinations tend to destroy the accuracy and working characteristics of flow meters, to clog them up and throw off the calibration," Houston said. "I walked into the middle of this thing. I took over a company when I thought these systems were all together. But every manufacturer I talked to, and these were good companies, said 'We had never thought of those things.'"

John Dunlap, irrigation consultant, LESCO Inc., Rocky River, Ohio, said the company's prototype system has been effective, but pointed out it's in a different league. "Our particular system is geared toward large acreage parks, cemeteries and golf courses," he said, "and costs from \$4,000 to \$10,000."

LESCO's system is a computer-controlled add-on to existing irrigation systems. The microfeeder injection process, usually dealing with parts per million, sends desired amounts of liquid chemicals such as fertilizer, micronutrients or surfactants through the spraying system. Since it works off large, existing irrigation systems, the stability problem is solved.

It doesn't print out hard copy, however. "I suppose we could get that far," Dunlap said. "Now we keep track on a digital screen, and past applications can be called back from memory."

Les Weirich, national sales manager, Great Plains Industries Inc., Wichita, Kan., acknowledged his company was one which tried to promote its industrial meters to the lawn and landscape maintenance industry, but ran into difficulties.

"Our meters are designed for fuel dispensing, gas and diesel, for agriculture. We also use it for measuring herbicides, but it's really not that adaptable," he said. "The meter is designed for flow ranges of three to 30 gallons per minute, and I believe the right range for lawn maintenance is from one to 10 applications."

Weirich added, however, that "we believe there is a need for a good lawn maintenance meter. We have put a new person on the staff to research that market's needs, to see if we can't do a better job of filling it."

SUCCESSFUL METERING SYSTEM ON THE HORIZON?

ENCAP PRODUCT CO.'S PRODUCT HAD made use of a flow meter manufactured by Scienco Inc., Memphis, Tenn. "Its technique was that of the stationary tank so there was a high failure rate once it was loaded on trucks, and there was poor quality control," said Bud Houston, president.

Scienco's sales manager, Gil Rollison, said, "We had some early communication problems with Houston in that he was recommending a 200 psi operating range for a meter which was designed for 100 psi." Rollison acknowledged that vibrations resulted in inaccurate readings, but said, "we've corrected those design and mounting problems and have eliminated the shock."

He said that a test product has been in the field for two months operated by Orkin Pest Control, Atlanta, Ga.

"We told them we would develop a dependable meter, and if it did not operate efficiently we would correct the problems," he said. "At this time it looks like we have our problems from putting the product on trucks solved, as long as the applicator is metering out chemicals not in excess of 30 gallons per minute at 100 psi."

Rollison also admitted to earlier quality control problems, which he said are now solved. "We had an automatic welder for the housing and were spot checking, and Murphy's law took effect," he explained.

"Though we were testing with factory calibration, we were testing at low pressure and there were a lot of pinhole leaks in the weld which were not caught."

"So units got out into the marketplace which should not have gone there. We've since corrected those problems, now thoroughly test every unit and feel quite good about our quality control."

Rollison described the new model as all encapsulated in a 3/16-inch stainless steel

One company that claims to have a fully functional product is Micro-Trac Systems Inc., Mankato, Minn. "Our products work extremely well, and are very accurate," said President Scott Veldman.

These monitors can be mounted in the truck while the applicator gets out and walks around with the sprayer and controller, or the controller can be mounted on a rig with the spray being coordinated with the speed of the rig. This system has a turbine-type sensor inside the flow meter which registers so many revolutions per gallon which are transmitted to the microprocessor-

based console.

These are stand-alone units to be set into either a cab of a truck or on a rig. Intervals can be set up so that after so many gallons have been discharged the horn will beep. The applications can be speeded up or slowed down. There is no printout. The applicator has to look for the daily totals on the console, but the unit gives both subgallons and total gallons, so the measurement can be recorded by the job or the entire day.

In addition, the product is set up to handle three different sets of chemicals. The single set flow meter retails at \$395. A meter



Metering systems continue to be tested.

cover which gives protection to the electronic readout.

"What gives a system problems is the calibration of the meters. Our system has a one button electronic calibration so that the flow rate and pressure will be very dependable. If it's 15 gallons this time, the same flow rate and pressure will follow next time. Our meters have a positive displacement feature, which means that if the flow rates vary, you will still get an accurate reading, maybe not 100 percent, but more accurate than some other types of meters."

The cost for the Scienco system is \$237. "The only thing that can wear out is the metering chamber itself after so many thousands of gallons, but this is a \$50 replacement item," Rollison said. "The 3/16-inch steel shell will have an indefinite life."

The system has a remote readout capability which can be mounted as far as 35 feet away from the operator if the metering chamber is in a hard place to read. The system does not have a printout feature, but Rollison said, the company is working on a prototype which is in its experimental stage. The feature is at least one year away from being introduced.

In summing up his position, Rollison said, "the rules and regulations of different states will increasingly require the operator to tell the customer how much he has applied. I feel that such a product is in sight. We're very confident of our meter and the fact that it will do the job, not every job, at every pressure, but when operated within the parameters it was designed for, a very good job."

handling up to three sets sells at \$695.

With the monitor itself, you have to change the pressure manually or change the ground speed to change the quantity sprayed. With a control system, however, you simply set your desired application rate which will be maintained despite changes in ground speed. The control sprayer retails for \$1,045.

Veldman said 90 percent of his business is with agriculture, and that the product did not sell well to lawn maintenance contractors. The product has been redesigned, however, and purchased in quantity for private label use by

ChemLawn, Powell, Ohio.

ChemLawn wouldn't discuss the product's performance, stating that the information is proprietary.

Another contractor using a Micro-Trac meter is Tom Mann, president, The Caretakers, Inc., Eagan, Minn. Mann wishes the unit was easier to put up and down. "I'd like to be able to plug it into the lighter rather than having to run temporary wiring under the hood," he said.

Mann has had the product for four years and reports that he is happy with it insofar as it delivers what it promises, but he added, "I'm not sure it was the best investment I ever made, to be perfectly honest. It's a little bit of Hollywood, maybe it dazzles the customer, but I don't know if it is terribly important.

"If it printed something out on a piece of paper we could leave behind with the customer that might mean something. But the applicator writes it down on a piece of paper, and the customer has no way of knowing whether or not he made it up. I don't know whether it prevents us from spraying more or less. It's nice to have around, another little gadget, but if it broke we wouldn't stop spraying lawns."

Because metering systems are so new to the lawn and landscape maintenance industry, and the existing products have had so little penetration, many companies are not aware of them. "I haven't heard of them," said Deanna Hailey, secretary/treasurer, Central Landscaping Inc., Forest Lake, Minn. "It may be helpful to help you put in the right amount of fertilizer, but I'm not sure if it is a problem if you follow the instructions on the bag."

Stephen Dias, president, Landscapes by Dias Inc., Boynton Beach, Fla., works exclusively with landscapes and said, "Such a system wouldn't be relevant for me. Soil conditions and site conditions vary tremendously. If a particular tree takes a few more dollars of fertilizer I'll put it in. I don't work with uniform enough conditions to make such a product meaningful."

Pat Nibler, operations manager, ProGrass Inc., Portland, Ore., said he is aware of the previous attempts of Encap and Scienco, adding, "Our industry requires a higher pressure and lower volume than other industries. I'm involved in a couple of states which would like us to measure the amount of materials."

He said he now estimates his chemical use by the area covered and the pace of the man spraying. "It's probably within 10 percent accurate," he said.

Jeffrey Miller, owner/president, Miller Landscape, Arvada, Colo., said he estimates by using the numbers on the bag, the height of the individual and the pace at which he walks.

"I don't think it's that accurate," he said. "How do you measure if he's peppy because he has a hot date that night, or has had a few beers the night before and is dragging?"

Miller added he would like to see viable metering products since "this industry has been very unprofessional in the past and is struggling to become more professional. Good metering systems would help us appear more scientific." — *Michael Major* ■

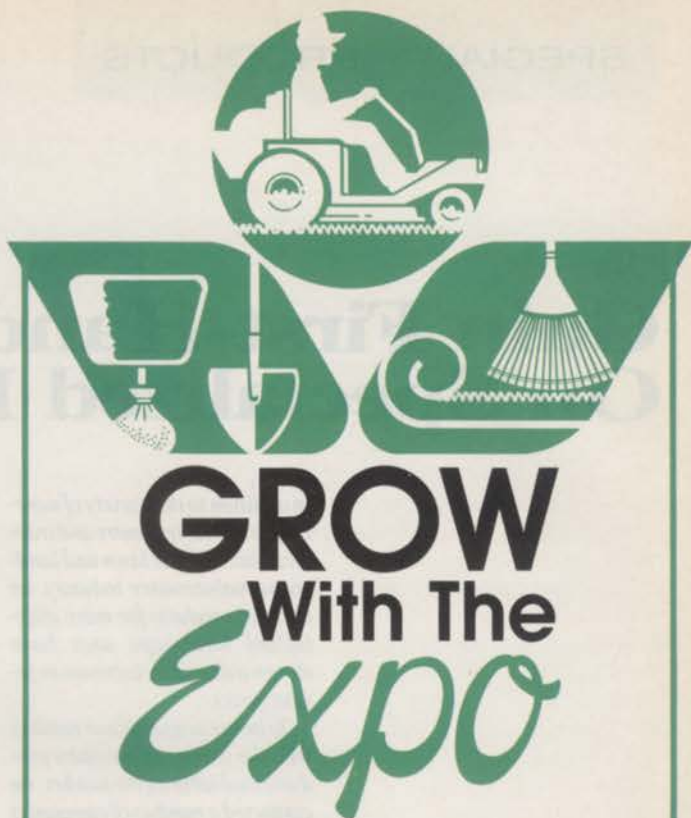
The author is a free-lance writer based in Port Townsend, Washington.

COMING NEXT MONTH

Lawn and Landscape Maintenance magazine will bring you our annual turfseed market report. Find out how the 1989 harvest turned out and look for up-to-date information on seed pricing and availability.

•••

We'll also bring you details on manufacturer's efforts to solve the problem of effective packaging and disposal of pesticide products, a report on interiorscaping, tree and ornamental fertilization and much more.



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For more information on the Nursery, Landscape & Equipment Expo, contact the New Jersey Nursery & Landscape Association, Building A, Suite 3, 65 S. Main Street, Pennington, NJ 08534 or call 609/737-0890.

Circle 31 on reader service card

Gain First-Hand Facts On Specialized Product Use

In addition to the variety of mowers, aerators, trimmers and tractors which fill the lawn and landscape maintenance industry, an array of products for more specialized landscape uses have shown a dramatic increase in recent years.

To better acquaint our readers with the variety of specialty products available on the market, we contacted a number of companies offering such products and asked

them to contribute stories identifying special or unusual applications of their products. What follows is a compilation of those contributions. Ed.

NEW SPRAYER RIG CUTS APPLICATION TIME

ChemLawn's commercial division in Solon, Ohio, decided they had to make their spraying operations more efficient for large commercial jobs.

The division covers the Cleveland metro area, servicing some 700 commercial accounts. Turf areas range from 25,000 square feet to as much as 1.5 million square feet at a large condominium complex.

Until this spring, the commercial division used their regular spray trucks and a pull-behind boom sprayer towed by a Kubota tractor. With the spray trucks, it took 10 people and five trucks nearly all day to spray the large condominium complex grounds.

This season, the division is using a new Cushman low-profile sprayer, mounted on a Cushman Turf-Truckster vehicle. According to Tim Sprankle, commercial

service manager at Solon, the new unit is faster, more mobile and much more efficient.

"For example, to do the big condo complex, we take the Cushman sprayer to the site, along with a 1,200-gallon tanker truck which is parked at the site. One operator can cover the one and a half million square feet area, refilling direct from the tanker," Sprankle said. "It takes about four hours to do the whole area, and we only have to run the tanker back in once for a refill."

The sprayer operator refills the 120-gallon spray tank himself, right from the tanker, he added.

The Cushman unit offers several advantages over the old pull-behind unit, too. "It's faster, because we can get around with it easier. The handy controls let the operator raise the outer boom sections from the Turf-Truckster seat," Sprankle said. With the old pull-behind unit, the operator had to get off and raise the arms for transport.

"Also, it's easier to shut off one or two of the boom sections, when necessary, from the seat. And, the foam marker makes it easier to

The Cushman low-profile sprayer.



SPRAY PATTERN INDICATORS GAINING INDUSTRY ACCEPTANCE

FIVE YEARS AGO THE TERM "SPRAY PATTERN INDICATOR" was unheard of in the lawn and landscape maintenance industry. Today, things are different — everyone knows what a spray pattern indicator is and many have even tried one.

A number of conditions have contributed to the steady increase in colorant use, and foremost among these are the environmental issues that have become increasingly important to the way lawn and landscape maintenance operators conduct business.

When spray pattern indicators were first introduced to the lawn and landscape maintenance industry, the objective was to save money by reducing misses and overlap and subsequent callbacks. Application quality would improve, and repeat business would be assured. Companies like Perma-Green, Boise, Idaho, have used Blazon® to strengthen their market position.

"We use it especially on spot treatments for broadleaf weeds, postemergent crabgrass control and for clump tall fescue weed control," said Gary Clayton, vice president of operations for Perma-Green. "This way we can identify which areas we've applied weed control to. It also signals the homeowner that we've been there."

Blazon is a non-staining, inert colorant from Milliken Chemical, Inman, S.C.

Today, the real benefit of using a colorant lies in the proactive stance the pesticide applicator is taking to do the job right, and to reduce or eliminate the environmental risks associated with the lawn maintenance industry, according to Clayton.

Perma-Green has been using Blazon for two years. "In addition to spot treating, colorants are good for training and educating both new and experienced employees," he said.

EROSION CONTROL NETTING FOR GRASS OR GROUND COVERED SLOPES

WITH MORE AND MORE LAND being developed in mountainous locales, the special problem of establishing vegetation on existing and filled slopes becomes evident.

Timely planting can solve some of the problem, however, unexpected rain showers and steep slopes need more stabilization than increased seeding rates.

Now a new product is available to the professional contractor called Saxolin-X. It's a completely biodegradable netting made of spun cellulose paper yarn. The lightweight material makes for easy cutting and allows for easy installation for even the most novice of landscapers.

With varying length and width options, it's easy to match any existing slope whether long and narrow or short and wide. Saxolin-X enables a landscaper to dry seed or plant directly un-



Saxolin-X erosion control netting.

derneath the positioned netting or before it's installed.

Ben Fox of Ben Fox Inc., Portland, Ore., said he lays and staples the netting in place, using 500 pounds of mulch (as a tracer) per acre with his regular seed/water/fertilizer slurry, shooting his mix past the netting into the prepared soil. He then follows up with 1,500 pounds of straight mulch and water per acre over the entire prepared site.

This method can be easily used on the steepest bank or a rolling slope in a home lawn. The netting will act as a permeable barrier to prevent washing out the newly planted seed bed, while the netting's one-half inch by one-half inch grid will allow the vegetation to work its way through, forming a densely planted water retaining slope.

Saxolin-X will break down within a four- to six-month period under medium to damp conditions. The netting is also excellent for planting ground cover, such as ivy, by inserting your hand through the grid and enlarging the opening enough so that planting can be done without any special tools. By using an ordinary pair of scissors or hand-hedge trimmers, a landscaper can trim his netting into a perfect fitting design. Saxolin-X erosion netting, from Hobbs & Hopkins Ltd., Portland, Ore., has been accepted and used on federal and state projects.

follow the previous swath," he said. "With the pull-behind unit, we had to use a dye marker and some customers didn't like the color left on the grass, even though it disappeared in a few days.

"And, with the new unit, it leaves only two tracks across the grass each swath, instead of six like the tractor and towed unit did."

The new spray boom is equipped with cone jet nozzles to minimize chances of drift. "We get better coverage and they plug less with liquid fertilizer," he said.

Sprinkle said the hand-gun spray attachment is handy, too, for reaching small areas where the vehicle can't get to.

The pull-behind sprayer is still in use, but the commercial division uses it exclusively for vegetation control — applying Roundup on parking lots, fence lines, etc., to control unwanted weeds and grasses.

The commercial division is the largest of ChemLawn's four branches in the Cleveland area. Six lawn maintenance specialists are on the staff, along with a tree and shrub specialist, and both an inside and an outside sales representative.

Besides fertilization, weed and insect control, the division provides "beneficial services" to commercial clients, including core aeration, power seeding and complete turf renovation.

According to Sprinkle, the Solon office is the only one in the Cleveland area exclusively providing services to commercial properties.

"That's why we continue to look for methods and equipment that enhance our efficiency," Sprinkle said. "The new sprayer rig gives us a big boost in that regard."

LANDSCAPE SPRAY MAKES MULCHING EASY

Freshly applied mulch should be bright, colorful, attractive and beautifying to the surrounding landscape. When exposed to sunlight and weather conditions, however, mulch is soon reduced to a dull unattractive color.

The resulting dull gray or bone white color of faded mulch significantly reduces the aesthetic benefits of an ornamental planting bed and the general landscape. When mulch color loss occurs, the common method of revitalizing is to top-dress with fresh mulch.

Another option is to use Mulch Magic,[®] a liquid water soluble colorant applied over the top of the weathered and sun-faded mulch. Mulch Magic, by Becker-Underwood Co., Ames, Iowa, instantly restores the original bright natural color.

Mulch Magic provides new and unique opportunities for landscapers. Until now, in order to keep mulch fresh and colorful throughout the season, labor in-

tensive and sometimes costly remulching practices were required. According to Joe Ray, direc-



Mulch-Magic.

tor of buildings and grounds for the Fort Atkinson School District in Fort Atkinson, Wis., Mulch Magic not only saves the district money, but also time and labor.

The product, when applied to a mulch bed, will normally cost the applicator less than one cent per square foot.

As noted in many studies, sprinkling new mulch on top of old mulch often creates harmful layering and soil penetration problems for oxygen, nutrients and water.

"The layer of organic mulch under and around shallow rooted trees and shrubs should not exceed two inches in thickness. If the resulting color is not adequate, spray the existing color with Mulch Magic or sprinkle one-half inch of fresh mulch," said Francis Gouin from the University of Maryland.

Studies are currently under way that will allow tank mixing of certain herbicides with Mulch Ma-

WATER ABSORBANTS INCREASE TRANSPLANT SURVIVAL

ESTABLISHING AND MAINTAINING newly planted trees, shrubs and bedding plants can be touch and go even when rainfall conditions are "normal." Few customers have the time or knowledge to water properly. Ultimately, the installer is responsible for any losses that may occur.

SuperSorb® water absorbants, incorporated into the soil at planting can reduce watering requirements up to 50 percent, increase transplant survival and improve ornamental growth and condition compared to untreated transplants.

Don Corbin, owner of a landscape contracting and maintenance company of the same name in Greenville, S.C., has used SuperSorb, available only from Aquatrols, for about three years with excellent results.

While rainfall has been plentiful this year, western South Carolina and much of the surrounding region has experienced severe drought conditions for the last five years.

The need to regularly send a water truck and crew around to all new installations became a fact of life for Corbin, who guarantees his work. SuperSorb has enabled him to significantly reduce the frequency of supplemental watering and put his labor and equip-



SuperSorb increases transplant survival.

ment to better use.

"Last summer, in spite of an approximate 20-inch rainfall deficit we lost almost nothing," Corbin said. "The more we use SuperSorb, the more we like it. I've gotten to where I am afraid not to use it," he said.

In addition to amending the backfill around trees and shrubs, Corbin broadcasts and then rototills the SuperSorb-C into annual beds prior to planting along with organic amendments. Corbin has found that SuperSorb not only saves his company money by reducing plant replacements, but reduces labor costs as well.

SuperSorb is an acrylic copolymer which absorbs up to 200 times its weight in water. The crystals will keep absorbing and releasing water to plants

for several years. The cost of using SuperSorb for planting a tree with a 12- to 18-inch rootball is about 60 cents.

SuperSorb-F, (fine particle) may be broadcast and incorporated into the top several inches of soil during preparation for seeding or sodding to aid germination and establishment.

Extensive trials conducted in Florida and Massachusetts by Terry Tattar, of the University of Massachusetts Shade Tree Laboratory, have confirmed the benefits of using SuperSorb. In a year-long study conducted on transplanted one-gallon ligustrum, Ixora and Hibiscus, the survival rate of all three species was significantly improved compared to controls. In addition, the average growth rate was greater and the soil around the absorbent-treatment plants was "noticeably softer and more spongy to the touch than the untreated soils," according to Tattar.

In another study on native trees and shrubs conducted in western Massachusetts, Tattar observed similar results. "Very few plants were lost in either treatment (control or treated) to this date. However, the gel-treated plants were consistently rated higher in condition than the untreated plants," he reported.

gic. Weed control may then be performed at the same time the product is applied. For certain herbicides, such a tank mix would be an advantage since Mulch Magic will mask the herbicide stains.

Scheduling conflicts created by remulching landscape beds adjacent to busy sidewalks can also be reduced with the use of Mulch Magic. Maintenance workers can apply the product to the landscape with conventional hand-held application equipment without unnecessarily tying up or blocking the sidewalks.

Theme parks, botanical gardens, schools and historic sites are good examples of highly landscaped areas crowded with foot traffic seven days a week.

Mulch Magic is non-phytotoxic to plant life and will not harm plants, even if inadvertently treated directly. It may be removed from equipment and hands with soap and water, yet will bond to the fibrous mulch material for months at a time, once allowed to dry. Drying normally takes only 15 to 20 minutes.

COMPUTERIZED SPRAY SYSTEM WINNING BIDS

Florence Landscaping is bidding on and winning larger contracts thanks to two new Hahn Multi-Pro Vehicles now in use at its Perth Amboy, N.J., headquarters.

One is equipped with a pendulum-action spreader for dry materials, while the second with the Pro-Control computerized spray system. Florence uses the machines both residentially and commercially, servicing accounts in New York and New Jersey.

Jim Sing, general manager, said the machines save both manpower and time. "We used to line up five guys with rotary push spreaders and finish a job in three hours. With the Hahn, we can do the same thing with two people in half an hour."

Sing also cited the lack of operator fatigue as a benefit. "I remember when it was a lot to ask one man to spread a million square feet in a week. Now, I count on a million a day. We've even done as much as two million square feet in six hours with the Hahn."

Florence Landscaping uses the

machine for every fertilizer application that requires "eight bags or more."

The computerized sprayer has also proven to be a valuable asset. It controls the application rate and records pertinent data.

"It's very accurate," Sing said. "We can see much better control compared to the trim areas we hand spray." With the Pro-Control, he can key in how much chemical was used and the total area sprayed for record keeping at the end of the day.

"It may seem like a small thing, but the operator can push a button to find out how much is left in the tank to see if he can make

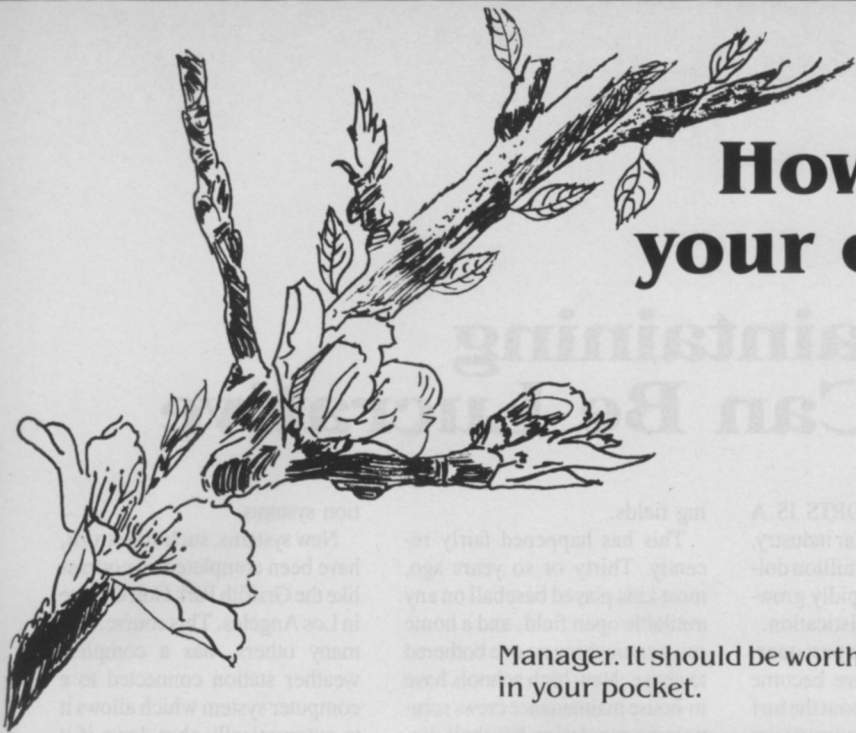
another pass. That saves a lot of time and guesswork," he said.

Again, speed is the key factor. "This is the first time in 16 years we've hit all our broadleaf weed control jobs on schedule, even with all the rain we've had this spring," Sing said. "Now we're planning the second application and I'm confident we'll get it done, too."

Florence Landscaping is, most importantly, taking contracts they could not have considered while spraying by hand. They used to bid the big jobs apprehensively and consequently bid high. Now, with their more efficient machinery, they're winning the big bids. ■



One of Hahn's new Multi-Pro vehicles.



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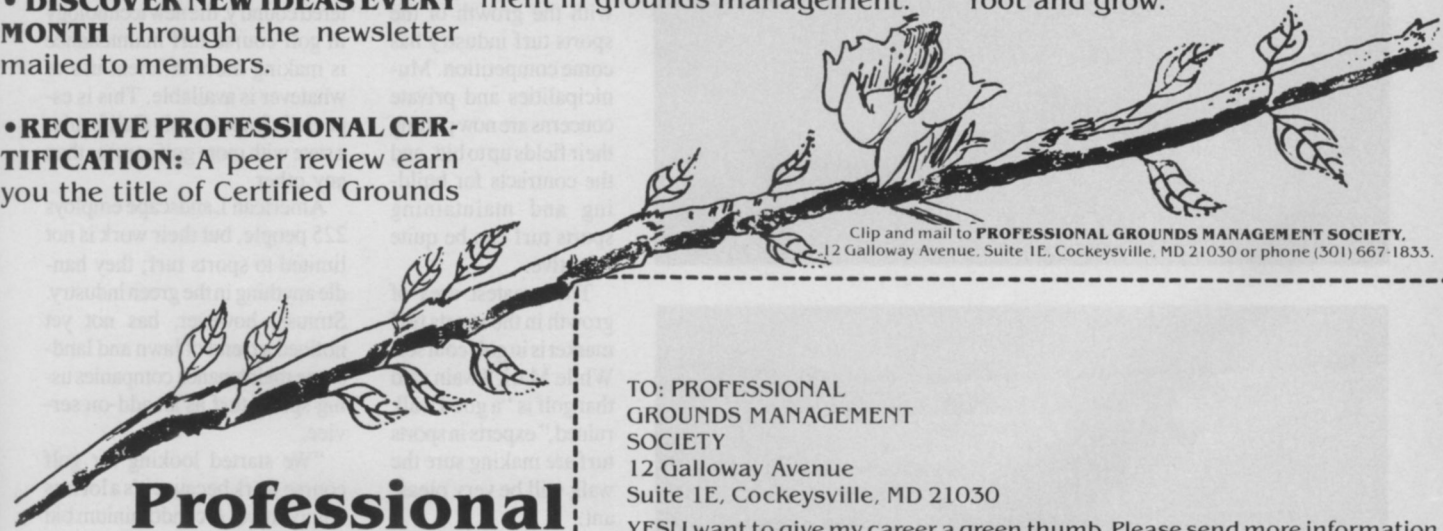
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Installing, Maintaining Sports Turf Can Be Lucrative

WHILE SPORTS IS A billion dollar industry, sports turf is a multi-million dollar industry that is rapidly growing in size and sophistication.

Americans over the past quarter-century or so have become much more finicky about the turf on which their favorite sports are played. This goes for amateur as well as professional athletes, as amateur sports comprise about 90 percent of the sports turf market. Because of this, sports turf researchers are constantly looking for new ways to improve play-

ing fields.

This has happened fairly recently. Thirty or so years ago, most kids played baseball on any available open field, and a home run was anything no one bothered to chase. Now high schools have in-house maintenance crews scrutinizing regulation baseball diamonds and football fields after every game, noting particular needs in repairs and supplies.

Even in America's small towns, it seems the days of using someone's old pillow as second base, and hopping over dandelions for a ground ball, are over.

tion systems.

New systems, such as Retrofit, have been completed on courses like the Griffith Park Golf Course in Los Angeles. This course, like many others, has a complete weather station connected to a computer system which allows it to automatically shut down if it is raining, becoming windy or if the moisture content in the soil is too high. Golf turf maintenance has come a long way from the days, not so long ago, when a man in green khakis would stand on a hill, look at the sky and say, "Rain's 'a comin'."

"You can take a water manager and put him in charge of all the courses," Strauss said. "He can turn on and off all the systems, and get a computerized printout. This (new technology) has increased work for our companies."

And, in a more and more cluttered country, the new technology in golf course turf maintenance is making more efficient use of whatever is available. This is especially important in California, a state with more golf courses than any other.

American Landscape employs 225 people, but their work is not limited to sports turf; they handle anything in the green industry. Strauss, however, has not yet noticed a trend of lawn and landscape maintenance companies using sports turf as an add-on service.

"We started looking for golf course work because it's a lot less competitive. A condominium bid might have 12 bidders, but a golf course has three or four," he said.

One of the reasons there are fewer bids for sports turf is the size and complexity of such projects. Most companies, the smaller ones, are not experienced in sports turf maintenance and do not have the manpower to handle

COMPETITIVE FIELD.

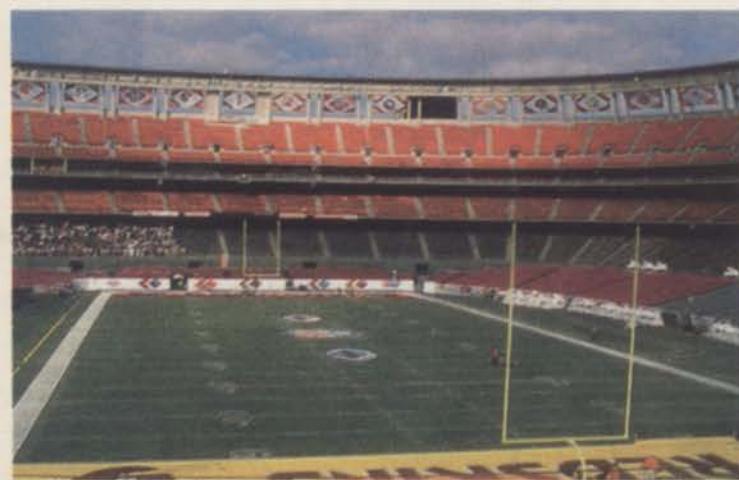
Now, the business of sports — and sports turf — starts early.

This, of course, is welcome news to the sports turf industry. But along with the growth of the sports turf industry has come competition. Municipalities and private concerns are now putting their fields up to bid, and the contracts for building and maintaining sports turf can be quite lucrative.

The greatest area of growth in the sports turf market is in golf courses. While Mark Twain said that golf is "a good walk ruined," experts in sports turf are making sure the walk will be very pleasant.

Mickey Strauss, president of American Landscape Inc., Canoga Park, Calif., sees golf course maintenance becoming more technologically sophisticated with the advent of new high-tech water conserva-

Jack Murphy Stadium, San Diego, Calif., before and after it was prepared for Super Bowl XXII. Photos: International Seeds Inc.



such tasks.

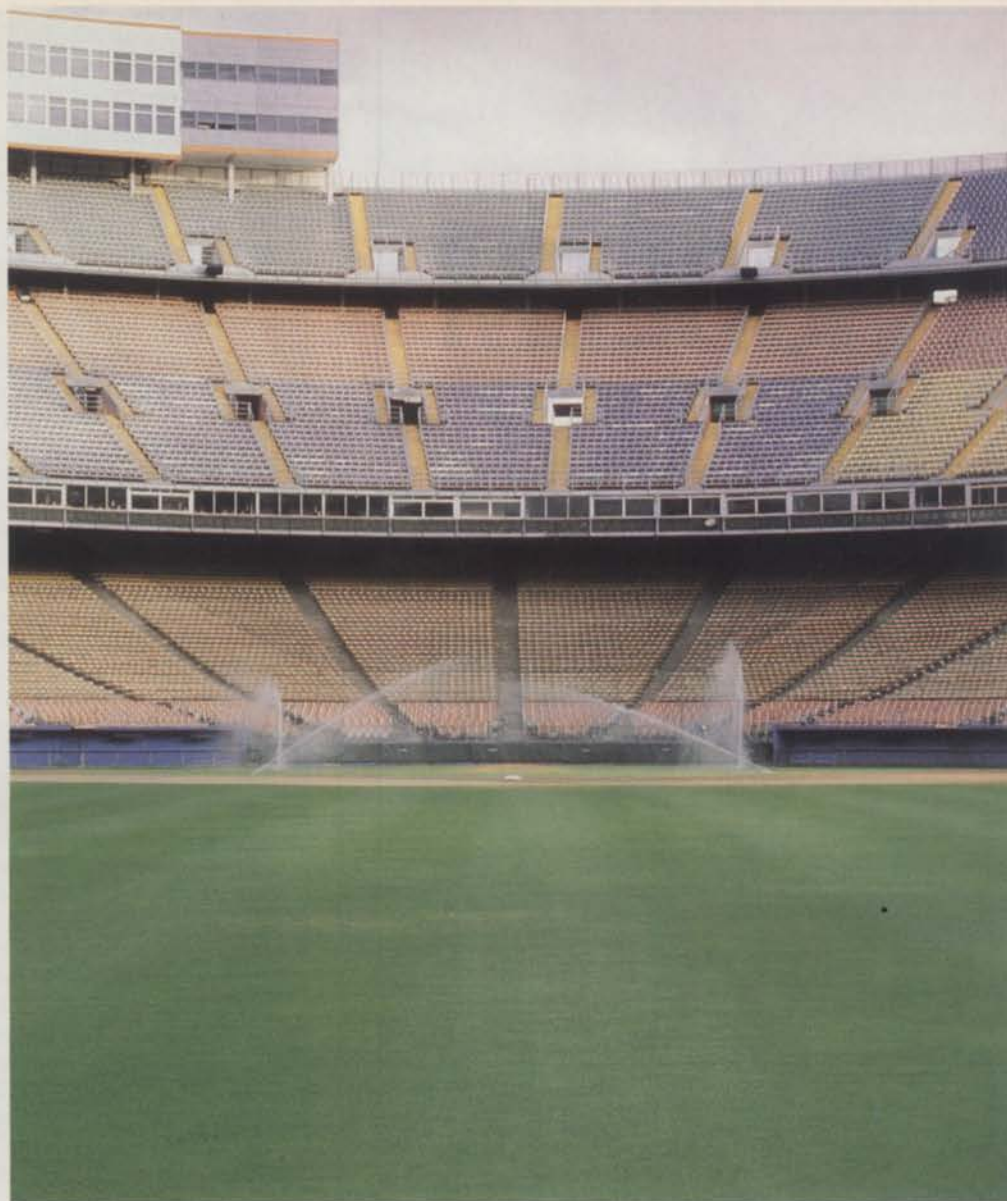
"The production and maintenance of sports turf depend on the kinds of grasses used, proper design and construction, good soil drainage, proper seed bed preparation, adequate fertility and a maintenance program which recognizes the special nature of the care involved," cautions a booklet published by Pennsylvania State University's College of Agriculture. Most smaller lawn and landscape maintenance companies do not have the capability to handle such jobs.

SPORTS SPECIALIZATION. One company that specializes in sports turf is Kurtz Brothers Inc., Cuyahoga Heights, Ohio. This company maintains Cleveland Municipal Stadium, the largest facility of its kind in the country, where the Cleveland Indians and Cleveland Browns play. Kurtz Brothers is also responsible for the care of the Firestone Country Club, where the famous World Series of Golf has been played for years.

Kurtz Brothers agreed that everything is "more scientific. For instance, the USGA has developed a standard for a putting green and a set of specifications for design. It used to be people pushing a bunch of dirt around and planting seeds. No technology," Tom Kurtz, president of the company, recalled.

Nowadays, when television viewers see helicopters with cameras scanning over golf courses, they look like perfect models of themselves. The close-ups of play on football gridiron show the results of proper crowning, excellent surface drainage, uniform sloping and soil that is constantly being improved on.

If the playing field looks a little too perfect, and if football play-



ers are not getting soiled after tackles, the surface is artificial. This surface, known popularly as AstroTurf, is still a controversy in sports. Statistics indicate that more injuries result from this turf, though not that many more than people might think. Kurtz said many stadiums which used to have natural turf, in part due to injuries.

With a return to natural surfaces has come a renewed demand for sports turf which withstands the strains and vigors of football, baseball and soccer. This includes better soils, which are often sand modified with organic materials and topsoil.

Today's sports turf, Kurtz said, is a homogeneous blend made for the best moisture retention, permeability and compaction. The goal is to create a sports turf that can bounce back fast from an

assault; and it has become a science.

"There is now more awareness of what it takes to do it right," Kurtz said.

Though last year's drought made people think sports surfaces suffered in a miserable way, it is actually the unusually high amount of rain this year in many areas of the city that poses more of a threat to sports turf surfaces. While automatic sprinkling took care of last year's dryness, no one has yet figured out a way to hold off the rain.

DEMAND FOR QUALITY. The biggest segment of sports turf users are not professional athletes but recreational, amateur users. Millions of people every year play hard on softball, football and soccer fields. And more and more amateur athletes are demanding

Irrigation is vital to the maintenance of any sports field.
Photo: Hunter Industries.

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CHALLENGING ATHLETIC FIELDS

IN SPORTS TURF

maintenance, one extreme is no better than another. Heavy rain or drought have opposite effects on football, baseball and soccer fields as well as golf courses. But the results of those affects are the same — the turf is endangered.



Dan Bruinooge is head of Canada's Weyburn Parks and Recreation Department. Located near Saskatchewan, this area has suffered from a drought this year that is the worst since the 1930s. Average rainfall there annually reaches about 32 inches, but this year (as of late July), they have had one and three-quarters inches of rain.

"The first problem (created by the drought) is with the water supply," Bruinooge said. "There are definite irrigation requirements. Otherwise you end up with a plain dirt field."

The drought there is so bad that the computerized water system for the only golf course in Weyburn is restricted. But because of other technologies in turfgrasses and their maintenance, this year's drought is not quite as bad as the one in the 1930s.

The soccer fields have not suffered as much as other fields because they are not as refined and closely manicured as the others. "They are in reasonably good shape," Bruinooge said. Much of the grass in sports turf there is Kentucky bluegrass, which handles drought better than most grasses.

Bruinooge is now forced to perform extra aerations on sports turf, and apply a topdressing several times this season to keep the grass in better shape. Still, in Canada the sports turf market is growing.

But weather will always be a problem, or a friend. While drought has hit Canada's sports turf industry, this year, across the lake and into Ohio, rains came in quantities that were destructive.

David Webner, golf course superintendent for Lake Forest Country Club in Hudson, Ohio, said that this year's heavy spring rains had a worse effect than the previous year's monstrous drought.

"One problem with rain is the root systems of the plants never developed. Also (with rain) there are more diseases. Normally if there is a dry spring, the roots (of grass plants) will go down and try to find nutrients. This year they started to suffocate."

Webner said the sports turf maintenance industry is further challenged by varying winter conditions, especially in Ohio. An ideal off-season setting for any winter climate sports turf is for the ground to freeze up like a rock before a heavy snow falls.

No matter what turfgrasses are used, extremes in weather — either heavy rain or severe drought — can cause severe problems and challenges for the sports turf industry.

professional surfaces.

Jeff Bourne, president of the Professional Grounds Management Society, remembers the days of "sandlot" baseball. "That's what they were, a vacant space that was undeveloped, unused. Those facilities were

usually run by absentee landlords and local volunteer groups."

Now, he said, the volunteer groups are more sophisticated, especially at fundraising. This accounts for part of the growth of the sports turf industry. An-

(continued on page 50)

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Sports Turf

(continued from page 48)

other impact is liability. America is suit crazy, and if someone's 14-year-old trips over second base, lawyers gather like moths to light.

One other obvious change affecting the sports turf industry is the level of play at the amateur and recreational level. The speed and strength of today's athlete by far exceeds that of even 25 years ago. All this requires better, more durable playing surfaces.

"It's growing tremendously," said Bourne of the sports turf market. "I saw an ad in a small township in the East, hiring its first sports turf coordinator, who would work in the grounds department coordinating and maintaining athletic facilities."

Bourne said most facilities are now maintained by in-house operations. "There is a movement toward contractual maintenance," he said. In the professional ranks, and in farm systems, fields are handled by their own organization.

The Baltimore Orioles, for ex-

ample, employ their own grounds superintendent at Memorial Stadium, and this is true of most stadiums around the country.

In spite of the general preference for natural surfaces, Bourne said, most experts believe there is a place for Astroturf. One reason is, in the amateur ranks the frequency of play is incredibly high. Most football and soccer fields probably get 30 to 50 games a season. And many amateur sports areas have 400 total uses in a season. In cases such as these, "a good artificial facility is better than a poor natural covering." Most artificial surfaces are sand-filled synthetic.

As far as natural sports turf, there are tremendous gains in the development of turfgrass varieties, as well as research into soils, drainage techniques, mowing equipment and fertilizers.

"They are moving toward the larger capacity (mowers) and improving the quality of cutting," Bourne said. "Every year when the manufacturers introduce their new line, there is some new feature on almost every piece of

equipment."

New turf varieties continue, too, with the development of more wear tolerant, disease resistant grasses. Most research to improve the qualities of grasses and other sports turf research is university-based.

"University research gets the information to users like us on new varieties, chemicals for growth control and unwanted species of weeds. Even the U.S. Department of Agriculture does research on turfgrasses in the use of sports and other applications," Bourne said.

But in some areas the sports turf industry has, like many industries, lost support in funding. "The dollars are just not available," Bourne said. "University research is in competition with other research on campus."

While dollars are limited because of competition, endowments for sports turf research are often funded by turfgrass foundations. "It's going back to the industry itself. That will be a trend," he said. "Our responsibility is to be encouraging and

continue with research and the educational aspect of this business."

Matt Leonard is a research assistant at the University of California, Riverside. Leonard sees changes in sports turf happening right now. Until recently, the hybrid bermudagrass was thought to be the best for field play in football and other sports. Most stadiums, Leonard said, use it now. But current research now contends that there might be better traffic tolerance and general wear with perennial ryegrasses.

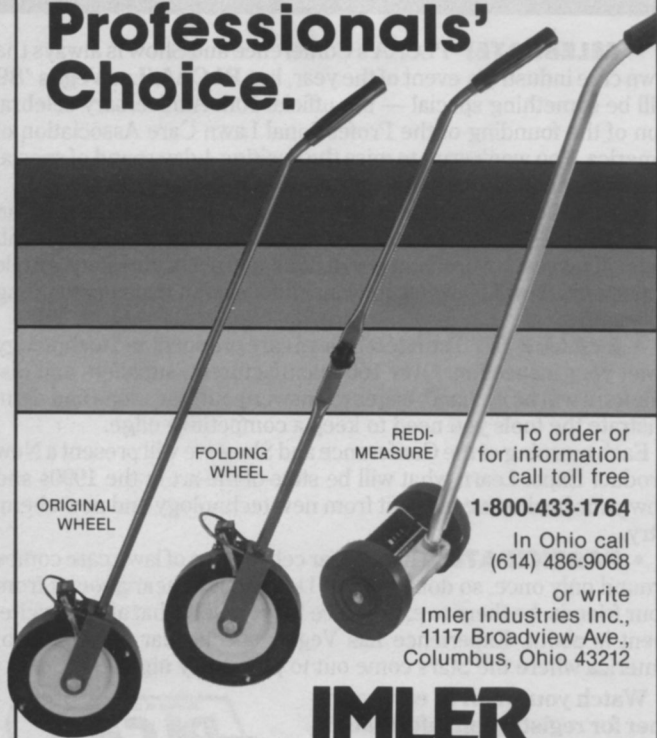
"Football," he said, "is a cool season sport played on warm season grass. The question now is if we should be changing to ryegrass."

This is not the only question, and as the sports turf industry grows in size and sophistication alongside the sports it accommodates, new demands will arise and have to be met. — *Michael Drexler*

The author is a free-lance writer based in Cleveland, Ohio.

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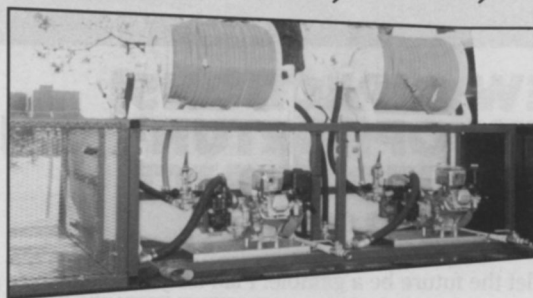
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The primary goal of soil testing is to assure that soil factors don't become limiting growth factors. However, as concerns swell over groundwater contamination, soil analysis has become a standard operating procedure for minimizing fertilizer consumption while maximizing plant benefits.

GENERAL CONSIDERATIONS.

As with any grounds maintenance operation, soil testing represents an expense in both time and money. Therefore it's desirable to maximize the benefits of this technology through efficient use. The soil test user must first identify the objectives of a testing program then select the appropriate sampling methods, test parameters and testing frequency.

With the advent of simplified test kits, in-house soil testing provides the plant care professional

with an alternative to private or university operated labs. Both options have certain advantages and disadvantages, depending on the nature of testing requirements.

Independent labs may offer certain tests not readily adaptable to kits, i.e., organic compounds and actual sodium, and have already established high confidence levels for test accuracy. These labs are also the most advisable option when only periodic soil assessment is required. However, using a private lab may not be economical when a large volume of tests are involved or when quick turnaround is necessary.

Aside from the initial investment for equipment, in-house testing affords a minimal cost per test with immediate results. Initially, there are also costs in time and labor needed to master test procedures. As a result, high confidence in test results may not come immediately.

However, quality control for in-house tests can be maintained by submitting a sample duplicate to an independent lab. The reagents and extractants in

some kits can also expire and lose potency if not consumed within a specified time. Consequently, investing in a kit may not be feasible if testing needs will be minimal.

TESTING BASICS. Most soil tests generally involve the use of a fluid medium to extract the various constituents from a dried, prepared sample. Depending on the test element, selected extractants range anywhere from distilled water, to solutions comprised of special acids, bases, neutral compounds or chelates.

Before purchasing a soil test kit, make certain that the manufacturer can accommodate regional soil discrepancies with the appropriate extractants, i.e., bicarbonate for phosphorus tests in calcareous soils, and reagents.

Once extracted, the sample is filtered to produce a clear liquid

filtrate which is treated in a manner similar to an ordinary water sample. In fact, many soil tests are easily adapted to water analysis. Test results usually correspond to a color change or precipitate in the test solution. Upon comparing the sample to the manufacturer's reference standard, the concentration of the parameter, usually in parts per million, can be determined.

In addition to "wet" analysis, a diversity of instruments are available to quickly measure such parameters as soil pH and electrical conductivity (total dissolved salt). These range in size from digital bench top models to pocket-sized pH meters.

The most important aspect of any test is the user's ability to interpret the data and use it in a practical manner. It's suggested that guidelines supplied with the kit be augmented with regional in-



TYPICAL SOIL TEST PARAMETERS

pH (lime requirement)	Sulfur (Sulfate)
Electrical Conductivity (salts)	Chloride
Nitrate Nitrogen	Carbonate
Nitrite Nitrogen	Bicarbonate
Ammonia Nitrogen	Sodium (Actual)
Phosphorus	Sodium (estimated)
Potassium, Calcium	Sodium Adsorption Ratio (calculated)
Magnesium, Aluminum	Base Saturation (calculated)
Iron	Organic Matter
Zinc	Humus
Manganese, Copper	Texture (percent sand, silt & clay)
Boron, Molybdenum	Cation Exchange Capacity

formation provided by a local extension service or university. However, the most valuable soil test interpretations are those developed by the user through experience and astute observation over time.

TEST OBJECTIVES. Determining the purposes for which soil is to be tested starts with selecting the most applicable equipment and/or procedures to be used. Soil test objectives can be generally classified as: screening, suitability, fertility and soil characterization.

Screening tests seek to identify soil conditions which are potentially lethal to plants. It's the most rudimentary, non-specific test routine and is typically measured quickly with one of two instruments (meters).

The objective is to categorize the soil with respect to detrimental thresholds of pH and total dissolved salts. Although these two parameters alone provide only non-descript information, they often reveal the evidence or "fingerprint" of a specific imbalance.

Suitability tests can indicate which plants will do well at a specific site, or which sites will be conducive to a specific plant type.

As an economical tool, these tests can either justify or eliminate the need to investigate a soil further.

Enhanced forms of soil screening additionally include sodium adsorption ratios (SAR), anion speciation (chloride, sulfates, carbonates or bicarbonates) and toxic nutrient levels. In its most simple form, the screening test is a useful first step when accessing a large number of diverse soil situations. This test is of particular importance for diagnosing general plant disorders and for assessing the safety of soil amendments prior to their incorporation.

Suitability tests, much like screening tests, determine general soil conditions, but can additionally measure other parameters important to a specific plant group

or specie. These other test parameters may include various nutrient elements, ion species, soil texture, etc.

Suitability tests can indicate which plants will do well at a specific site, or which sites will be conducive to a specific plant type. For example, suitability tests are used to select appropriate plant species for a natural landscape situation, such as a right-of-way area. Also, the suitability test is helpful in locating a congenial, low maintenance site based on the needs of a predetermined plant specie.

Fertility tests represent the majority of all soil tests performed. Virtually all fertility tests determine basic phosphorus, potassium and nitrogen (as soluble

nitrate). In addition, the secondary nutrients (sulfur, calcium and magnesium) and the micronutrients (iron, zinc, manganese, copper and boron) are included as the expense and sophistication of the test increases. Certain test routines may further include the elements: aluminum, molybdenum, ammonia nitrogen and nitrate nitrogen.

There is no doubt that fertility programs become more precise as more test parameters become known, however, the relative value of a planting and its sensitivity to nutritional variation essentially determines the extent to which each fertility parameter will be used.

Because of leaching, volatilization and plant use, the nutrient complex within a soil is quite dynamic. To keep abreast of these fluctuations, fertility assays are typically desired at more frequent intervals than those of other test routines. Nutrient determinations are also useful in evaluating the efficiency of fertility programs or the efficacy of a fertilizer product.

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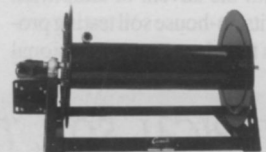
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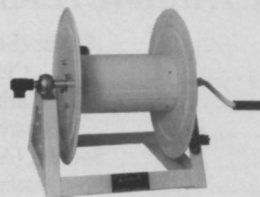
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fertility, the nutrient elements can become factors in soil screening or suitability as soil concentrations approach detrimental levels. For example, elevated copper levels are toxic to a great many plants, and excessive nitrogen, while not necessarily toxic in itself, can raise the total dissolved salts to hazardous levels.

Soil tests for the nutrients sometimes fail to account for actual availability to the plant. It is therefore advisable to consider soil pH, nutrient ratios (balance) and soil character as either antagonists or synergists in the total fertility scenario.

Soil characterization essentially logs the more stable properties of the soil. Soil character can have both direct and indirect bearing on nutrient behavior, as well as salt concentrations and pH. Unless soil is radically altered, the character of a soil should remain relatively constant over a considerable period of time.

Soil can easily be classified by its texture through sedimentation tests or sieving. The relative percentages of sand, silt and clay

comprise the texture of any soil. Texture assays permit better approximations of such phenomena as: nitrate leaching, ammonia volatilization, gravimetric water loss, wetting characteristics (saturation percentages), longevity of soil-bound chemicals and nematode infestation.

Of all soil character assessments, the percent organic matter, and its reduced form Humus, is the least permanent. Although some organic matter has a long decay series, it nonetheless remains the only soil characteristic subject to ongoing biological degradation. Organic matter content affects soil compaction, water and nutrient holding capacity, gas exchange, soil pH, preemergent herbicide application rates and contributes to overall soil fertility via mineralization of nutrients.

The cation exchange capacity (CEC) indexes the extent to which any dominant cation, i.e., calcium, aluminum, iron, potassium, etc., will adsorb to the soil. Some cations are considered beneficial as buffering agents or nutrients, while others can con-

tribute to excess alkalinity or acidity, calcium, iron, aluminum, etc. CEC is also an important consideration in determining the application rates of preemergent herbicides and pesticides.

Although a fairly extensive test procedure is available for exact CEC measurement, CEC is directly related to soil texture, percent organic matter, and the presence of amendments such as vermiculite. CEC is also essential for determining the sodium hazard of a soil (sodium adsorption ratio), the percent of base saturation and rates at which soil amendments such as lime, gypsum, vermiculite, sand or clay need be applied. Although some kits offer CEC tests, independent labs are often used for the relatively complex CEC determination.

SAMPLING. The usefulness of a soil test is directly related to how the samples are collected. The key to sampling is representation — with respect to both the study sites and the plant types present.

Virtually any test site will contain variations which will to some

extent produce disparities in the final test result. Theoretically, no two cubic inches of soil will be 100 percent identical, therefore, sampling always involves judgment and compromise to produce the best overall soil representation.

Up to a point, the accuracy of a soil assessment increases in proportion to the number of samples analyzed. The optimum sample volume for a given situation will depend upon the following considerations:

- the criteria used to delineate the sample site,
- the degree of discrepancy between site delineations,
- the distribution and variation of plant species within the site,
- the growth morphology of the plants involved, and
- the intensity with which the plants will be managed.

Common site delineations to be aware of include: variations in slope, soil cover, vegetation aspect, use or function, irrigation coverage, soil texture and proximity to physical objects. Separate tests may also be desired with

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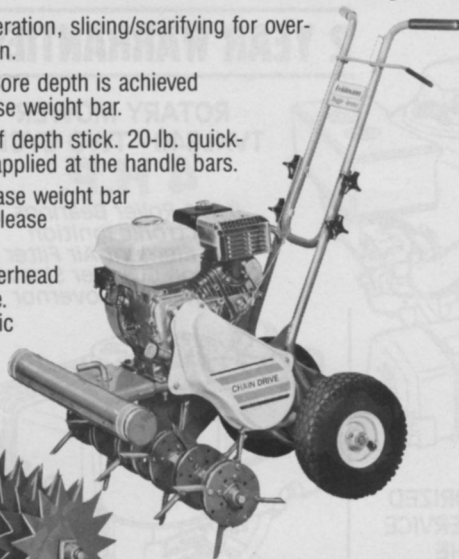
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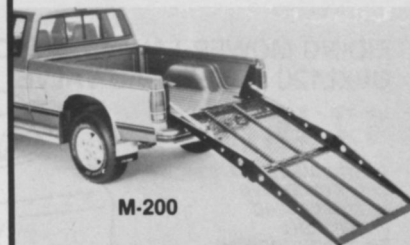
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respect to plant species, varying stages of development within the same community of plant types and the relative value of the site or plantings involved.

Although accuracy will be somewhat diminished, combining soil into a composite sample can provide a good, average soil representation for the site. The percentage of soil from each site represented in the composite sample should roughly correspond to the relative square footage of each delineated area. Composite sampling is particularly applicable to large, fairly homogeneous areas of a single specie, such as turfgrass.

For more expansive areas with little visible evidence of site delineation, composite samples should include several randomly selected sample points throughout the entire area. The exact number of samples is not critical, however, three to four samples per 1,000 square feet is suggested for smaller areas while 12 to 14 samples per acre should suffice on larger sites.

The depth at which soil samples are extracted should correspond to the rooting depth of the plant(s)

.....

The depth at which soil samples are extracted should correspond to the rooting depth of the plant.

involved. In this manner a soil test approximates a "plant's eye view" of the prevailing soil conditions. In general, sample turfgrass between three to six inches deep (depending upon specie and root development).

For annuals and non-woody perennials, sample depths can range from four to 16 inches, while sample depths for woody shrubs and trees can extend from a few inches to several feet below the surface (depending upon age and rooting depth of specimens).

It's important to eliminate any straw or debris on the soil surface prior to sampling. The use of a regular sampling device — such as an Oakfield apparatus — is highly recommended. These devices vary in length and diameter, according to the intended sampling need. Specialized sampling devices are available for

golf course greens, deep-rooted trees and for soil profile studies. An ordinary garden spade can be used if no other device is available, however, any sampling device should be free of rust, foreign soil or any other residue.

It's also important to minimize handling of the soil so as not to contaminate the sample with body oils or other material. Avoid using metallic cans or previously used containers for soil samples. Most test kit manufacturers offer regular sample containers or new plastic food-type bags can be used. Samples should be analyzed as soon after collection as possible so that volatilization of certain constituents is minimized.

CONCLUSION. Using soil test technology to its full potential might entail using every available test parameter to analyze every

square foot of a test area on a daily basis. While such a notion is of course preposterous, it does provide a starting point from which a practical testing strategy can be developed.

Basic fertility tests are well adapted to frequent soil monitoring in high-intensity management situations. Consistent plant nutrition is better guaranteed, fertility trends can be documented, waste and contamination can be curtailed and maintenance budgets can be streamlined.

To the other extreme is the characterization of the soil which essentially establishes a permanent record of soil properties. Soil suitability can assist the landscape designer or installer in diverting future maintenance problems, while screening tests expedite the diagnosis of plant disorders.

Suffice it to say, any professional involved in the lawn and landscape industry has much to gain and little to lose with soil testing. — *Jim Ware*

The author is an agronomic consultant from Hobbs, New Mexico.

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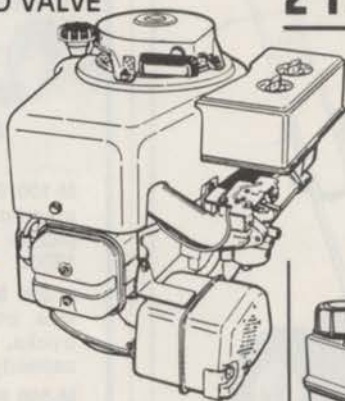
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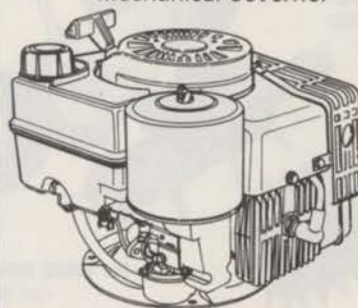
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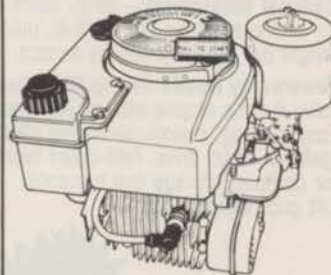
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FOCUS ON: SEEDING

BAHIAGRASSES WELL ADAPTED TO THE ATLANTIC AND GULF COASTS



Bahiagrasses are adapted to the warmer portion of the warm humid climate region including the Southern Atlantic coast west to the Gulf Coast of Texas.

BAHIAGRASS, *PASPALUM NOTATUM*, like many turfgrasses was first recognized for pasture uses, and only recently has been recognized as an ornamental turfgrass.

Bahiagrasses are native to tropical America and most likely were introduced to Texas from Cuba. Other selections have come from South America as indicated by the names Argentine and Paraguay.

The warm season turfgrass makes possible the establishment of an inexpensive lawn for the deep South. Common bahiagrass has a coarse texture, while Pensacola, Paraguay and Argentine have finer leaves.

The warm season grass has deep vigorous roots, spreads by horizontal stems/stolons above ground and rhizomes below ground and forms an open sod that is not

likely to form thatch.

Bahiagrass foliage is fairly stringy, requiring a sharp mower to attain a clean cut.

The Southern grass responds well to fertilizer applications made in March and September with additional organic slow release nitrogen applied during the summer. Two to four pounds of nitrogen per 1,000 square feet is generally more than adequate each season.

Bahiagrass should be mowed at about a two-inch height because close mowing favors weed invasions.

Bahiagrass seedheads are particularly conspicuous in the spring and cause a reduction in turf quality. This seedhead formation can be reduced by omitting or delaying early spring fertilization or by use of a growth retardant for seedhead control. Use of a rotary mower can also help reduce wiry seedheads.

Bahiagrasses are:

- average in attractiveness — far behind the finer-textured bermudagrasses and zoysiagrasses;
- well adapted to the southern Atlantic and Gulf coast plains;
- established from seed providing an alternative to vegetative propagation of most warm season turfgrasses;
- tolerant of shade — the best of the warm season grasses;
- resistant to lawn diseases; and
- resistant to chinch bugs and other turf insects;

Bahiagrasses are highly tolerant of low

soil fertility, drought, moist soil conditions and acid soils.

Bahiagrass seed has a waxy coat that delays moisture penetration, resulting in slow germination unless treated. High rates of seeding, 10 pounds per 1,000 square feet, help develop good stands quickly. In addition, cracking of the seed coat helps improve germination as long as the process does not injure the seed.

Bahiagrass seed germinates and establishes slowly, but seed mixtures containing fine fescues result in a more rapid development of turf cover. As the bahiagrass fills in, the fescues generally fade out.

Spring plantings provide maximum warm season exposure for best establishment. Seed sown in the fall will overwinter in the soil. This permits it to be used in "all season" seed mixtures.

Southern seed mixtures may include bahiagrass, zoysiagrass, bermudagrass and centipedegrass. When wintergrasses are used too, the mixture may be seeded at any time of the year.

Seed production of improved bahiagrass types is in the developmental stage. Combining and drying techniques have been improved in the Carolinas, Georgia and Florida.

Common, Argentine, Paraguay and Pensacola are commonly recognized varieties of bahiagrass. Following is a brief listing of common characteristics of each of these varieties.

Common bahiagrass: very coarse, often winterkills at a temperature below 20 degrees Fahrenheit; pasture grass — not generally recommended for lawns.

Argentine bahiagrass: softer variety; hairy leaves; more easily mowed; somewhat coarse; well adapted to southern Florida.

Paraguay bahiagrass (Texas): hairy leaves with a dull sheen; slow to germinate; heavy seed-head producer; otherwise much like Pensacola bahiagrass.

Pensacola bahiagrass: best germinating; fine leaved — glossy; hardy; cold tolerant to five degrees Fahrenheit; maintains better winter color; pest resistant. — *The Lawn Institute*

1989 FORECAST: READILY AVAILABLE IN SOUTH

BAHIAGRASS IS READILY available in the southern United States, with Argentine being preferred for lawn establishment both as a seed and sod.

Florida produces more than 20,000 acres of this sod per year, and 40 percent of the state — central Florida in particular — contains established bahiagrass, according to John Cisar, assistant professor of turfgrass at the University of Florida Research Center, Fort Lauderdale.

"It's never recommended as anything more than a low maintenance turfgrass," he said.

"There's a lot of non-irrigated turf in Florida and it will survive without irrigation. It won't survive in the winter, but it will at least produce a cover."

Although frequently used, one of the biggest problems of the turfgrass is that the seed develops prolific seedheads in the spring and through the summer.

"As a whole, bahiagrass has a very open growth habit, not dense like the bluegrasses," Cisar said.

Other problems associated with the bahiagrasses include susceptibility to mole crickets,

incompatibility to high pH soils and a low tolerance to salt.

The main disease problem associated with bahiagrasses is dollar spot, Cisar said, adding that few weed control measures are successful on bahiagrass.

In terms of pricing, the grass is extremely favorable, running about two to three cents per square foot for pasture grass and somewhat higher for better quality turfgrass.

Its range is similar to St. Augustine grass, running along the southern coast of the U.S., from Florida to Texas.

PEOPLE



Roche



Maisch

RANSOMES APPOINTED MARIA Large communications coordinator for the marketing/communications department. Large will be responsible for the development of Ransomes market research programs. She will also assist in related sales, advertising and public relations functions.

Husqvarna Forest & Garden has promoted **Jim Roche** to regional sales manager. He succeeds **Mike Hof** who was promoted to North American marketing manager for lawn and garden equipment.

Roche will oversee distributor sales functions in four districts which include Texas, Oklahoma, Ohio, New York, Pennsylvania, Louisiana, Quebec and the Maritimes. His new duties include providing sales and marketing support for distributors, and coordinating district advertising efforts.

Keith Rohrbacker has been named national product manager of pumps and generators at Kubota Tractor Corp.

Rohrbacker, former service supervisor, will be responsible for providing support to Kubota's division offices in the area of generator and pump product training, trade shows and sales. In addition, he will assist in the development of new pump and generator product lines.

Exmark Manufacturing Co. named **Roger Maisch** marketing/sales manager. Maisch will be responsible for all of Exmark's marketing activities, including advertising, sales and sales promotions. He will also work closely with dealers

and distributors in the area of sales training.

Michael Hamilton has been elected executive vice president of sales and service for Briggs & Stratton Corp.

Hamilton joined the company in 1976 as regional manager of Far East and Pacific International sales. He has since held the position of general manager international sales and most recently served as vice president/international.

In his new position, Hamilton will be responsible for domestic, industrial and international sales, service and corporate communications.

Monsanto Agricultural Co. appointed **Steven Hayford** manager, Roundup® brands, for its Lawn and Garden Business Group.

Hayford joined Monsanto in 1980 as a sales representative for Monsanto Chemical Co. Most recently, he was manager of acquisitions and licensing for Monsanto Agricultural Co. ■



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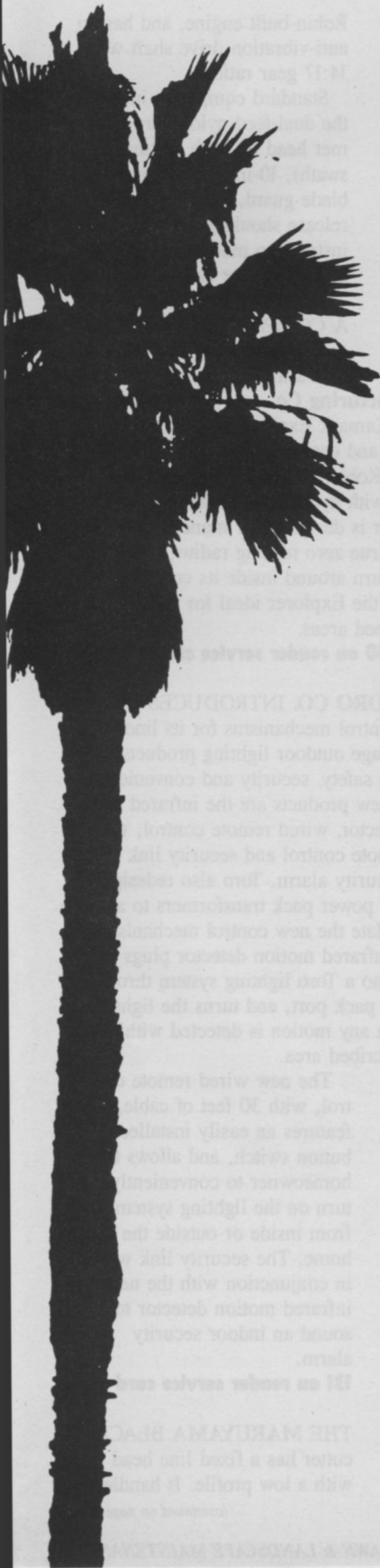
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THE IDEA BANK HAS RELEASED two new training videos for professionals who prune landscape plants. Each is available in English and Spanish language editions, and come with training materials and reference guides for group training sessions.

The ABC's of Landscape Pruning, is designed to help train entry-level employees. Video segments include: choosing the right tool for each job, pruning neglected and overgrown plants, thinning out vs. heading back techniques, pruning to improve plant health and seasonal pruning guidelines.

The ABC's of Landscape Pruning Advanced Edition examines tree pruning methods from planting time to maturity. In-the-field demonstrations show viewers the professional pruning techniques developed by Alex Shigo and Charles Sacamano.

Circle 126 on reader service card

PROFESSIONAL RESULTS ARE AVAILABLE in a compact package from **National Mower Co.** in the new 68-inch compact triplex, a smaller riding mower with rugged durability.

With its outboard reels up, this mower fits through 38-inch gates; with them down, it cuts a 68-inch swath and lets operators groom a half acre in just 15 minutes. Center pivot heads minimize trimming by reaching out over traps and curbing, eliminating scalping. The low center of gravity and 7.5-h.p. motor make for easy mowing on virtually any terrain.

Circle 127 on reader service card

APPLICATION PROMOTION AND follow-up cards designed to help lawn and



Professional pruning videos from the Idea Bank.

landscape maintenance companies generate valuable extra-service business with **LESCO Nu-Mulch®** are now available from **LESCO Inc.** The cards are printed in full color and can be ordered with or without personalized imprinting.

LESCO Nu-Mulch is the new spray-on colorant that quickly and easily restores color to old, faded mulch. One application lasts two to three months. The promotion card sells the idea of a Nu-Mulch application by appealing to the property owner's sense of beauty and desire for a fresh-looking landscape all season long. Space for writing in the cost per application is included on the card.

Circle 128 on reader service card

THE NEW ROBIN MODEL NB411 grass trimmer/brush cutter, with an on/off switch on the handle, is now available from **Carswell Import & Marketing Associates.**

The straight shaft grass trimmer/brush cutter is built to professional/commercial standards and weighs 15.9 pounds. It features a 40.2 cc (2-h.p.) high performance

Robin-built engine, and has an anti-vibration drive shaft with 14:17 gear ratio.

Standard equipment includes the dual-feed nylon cord trimmer head (18-inch cutting swath), 10-inch saw blade, blade guard, tool kit, quick-release shoulder harness and instruction manual.

129 on reader service card

A COMPACT RIDING MOWER cutting a 44-inch swath is now available from **Exmark**

Manufacturing Co.

The Exmark Explorer, cuts grass quickly and easily. It's powered by a 18-h.p. Kohler Magnum, twin-cylinder engine with hydrostatic transmission. The Explorer is designed for maneuverability. With a true zero turning radius, the mower can turn around inside its cutting path, making the Explorer ideal for mowing landscaped areas.

Circle 130 on reader service card

THE TORO CO. INTRODUCES three control mechanisms for its line of low voltage outdoor lighting products increasing safety, security and convenience.

The new products are the infrared motion detector, wired remote control, wireless remote control and security link indoor security alarm. Toro also redesigned its three power pack transformers to accommodate the new control mechanisms.

The infrared motion detector plugs directly into a Toro lighting system through a power pack port, and turns the lighting on when any motion is detected within a circumscribed area.

The new wired remote control, with 30 feet of cable, features an easily installed button switch, and allows the homeowner to conveniently turn on the lighting system from inside or outside the home. The security link works in conjunction with the new infrared motion detector to sound an indoor security alarm.

131 on reader service card

THE **MARUYAMA BLACK-**cutter has a fixed line head with a low profile. It handles

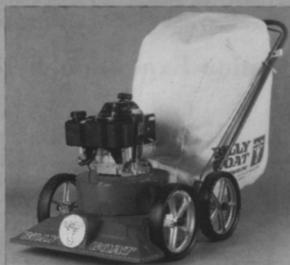
(continued on page 60)

PRODUCT SPOTLIGHT

A VARIETY OF SPECIAL features make the new KD501 suction sweeper from **Billy Goat Industries** user friendly.

The KD501 provides a convenient remote control lever on the handle that allows the operator to quickly adjust the front wheel height to varying surfaces and cleanup conditions.

It also comes with a high capacity bag that features built-



in handles and a long, L-shaped side zipper that makes it more convenient to open and empty.

With its lightweight snout and 26-inch wide cleaning path, the KD501 also offers easier handling. Designed for all types of leaf and debris cleanup applications, the KD501 comes standard with a 5-h.p. Tecumseh engine. A 5-h.p. Briggs & Stratton IC engine, a 5.5-h.p. Kawasaki or a 6-h.p. Overhead Valve Honda are also available.

125 on reader service card

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Circle 41 on reader service card

Products

(continued from page 58)

two or four lines of 0.105 nylon trimmer line.

The Blackcutter has a 4.75-inch diameter and is only 0.31 of an inch thick, weighing 6.5 ounces. With light, yet durable steel construction, the Blackcutter is easy-to-use and trouble-free.

Circle 132 on reader service card

THE REDMAX MODELS EBA430 and EBA440 backpack blowers feature an autostart and recoil system for smooth,

easy operation. Operators are able to start the blower with a push of a button and not lose valuable time by constantly pulling a starter rope.

Equipped with efficient, 41.5 cc engines, the EBA430 and EBA440 generate airflows of 600-cubic-feet per minute. Each unit features a self-charging, battery-type autostarter that is conveniently located for easy access.

Other features include a patented, force-ventilated backpad that keeps the operator cool, rubber mounts that insulate the operator from vibration and a low-noise muffler. A heavy-duty air cleaner is an

added feature of the EBA440.

Circle 133 on reader service card

PROTECTION AGAINST MORE THAN 65 destructive diseases that can damage ornamental foliage, flowers and bulbs, shrubs, trees and turf is available with



Fermenta's Daconil 2787.

new Daconil 2787® WDG, an easy-to-use, broad-spectrum fungicide from Fermenta ASC Corp.

Daconil 2787 WDG is a water-dispersible, granular fungicide that mixes quickly and easily with water, without causing dust. It is packaged in a five-pound, child-resistant, reclosable plastic jug to ease pouring and storage.

Daconil 2787 WDG contains the active ingredient chlorothalonil. This broad-spectrum contact fungicide protects 25 types of broadleaf trees and shrubs, 17 bulbs and flowering plants, eight foliage plants, three varieties of conifers and a wide range of turfgrasses.

Daconil 2787 WDG is recommended for use in field or container plant nurseries, greenhouses, parks, memorial parks, sports turf and lawn maintenance.

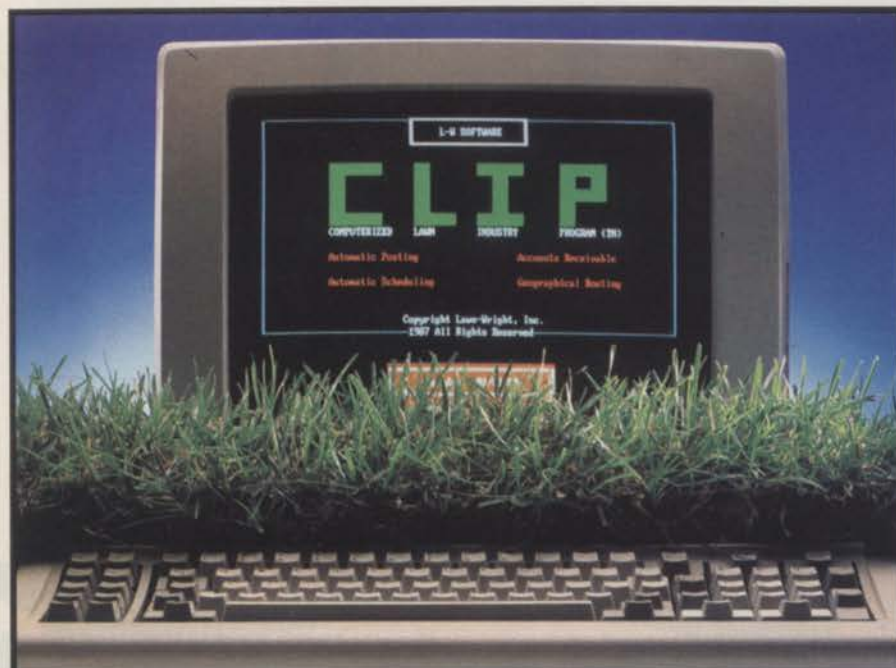
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DONUTRIMMER EQUIPMENT INC. introduces a new tool that edges any sprinkler, valve box or quick coupling valve in a perfect circle in seconds, and edges bunkers and cart paths in minutes. The edging tool easily adapts to any commercial weed trimmer on the market and is available in five different sizes.

Circle 136 on reader service card

CENTURY RAIN AID'S 1989 CATALOG featuring a wide array of new water-saving sprinkler and drip/trickle irrigation products, landscape lighting, aerator/fountains and geotextile landscape and filter fabrics is now available.

The '89 catalog features: a four-page section on drip/trickle irrigation supplies, including shut-off valves, spray stakes, drip irrigation tubing and water breaker nozzles; three pages featuring a wide range of landscape lighting to enhance and secure gardens, paths, driveways, gazebos or decks; and financing plans for



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Circle 137 on reader service card

A NEW STRING TRIMMER DESIGNED for easy access to hard-to-reach places and for reduced user fatigue is now available from **Husqvarna Forest & Garden Co.**

The Husqvarna Model 26RLC features a 48-inch-long curved shaft for convenient use around shrubs, flower beds, walls and corners. The well-balanced trimmer weighs 11.8 pounds and features a narrow engine housing for operation close to the body. The result is less strain on the operator's shoulders and back.

The trimmer is powered by a 1.8-cubic-inch (26 cc), two-cycle, air-cooled engine. Other engine features include a crank shaft supported by two ball bearings and an easily accessible foam air filter.

Circle 138 on reader service card

THE NEW 16GTH GARDEN TRACTOR hydrostatic from **Simplicity** features a 16-h.p. engine, new graphics and provides users the versatility to accomplish virtually any lawn maintenance chore.

The product is the first Simplicity tractor to feature the new Briggs & Stratton twin-cylinder, overhead valve Vanguard™ engine. The new 16GTH provides maneuverability, a smooth, even cut and ease of operation, at an affordable price.

The 16-h.p. Briggs & Stratton engine delivers high torque with cool, clean, efficient combustion.

Circle 139 on reader service card

A NEW HYDRAULICALLY POWERED angle broom is now available for **Mustang Manufacturing Co.**'s skid steer loader. The angle broom fits Mustang models 930, 940 and 960, making them ideal for maintaining streets, parking lots and walkways.

Two-foot (60.9 centimeters) diameter brooms are available in widths from five feet (1.52 meters) to eight feet (2.43 meters). Bristle materials available include: polypropylene, half-poly/half-wire and crimped wire.

Powered directly off the Mustang auxiliary hydraulic circuit, the unit features a manual 30 degree right or left angle change as standard, or a hydraulic angle change option.

Circle 140 on reader service card

TWO NEW PROFESSIONAL HYDRO riders will join **Scag Power Equipment's** line of hydros.

The new hydro tractors are now available with 12.5-h.p. Kohler or 14-h.p. Vanguard engines and come with 40- or 48-inch cutting decks. Scag also offers 18- or 20-h.p. Kohler engines with 48-

61- or 72-inch cutting decks.

Each hydro rider comes standard with an Eaton 850 hydrostatic transaxle. Scag's hydrostatic cooling reservoir has almost doubled the cooling surface of any in the industry. A five-gallon polyethylene fuel tank provides extra fuel capacity and oversized tires give the mower better traction.

Circle 141 on reader service card

SIX, HYDRAULICALLY DRIVEN sweepers from the **M-B Company** offer quick link-up to a wide range of small skid-steer loaders and midsize tractor

loaders. The front-mounted units provide fast, efficient pickup of dust, dirt and debris, and are well-suited for snow removal.

The M-B front-mounted sweeper line features two recently introduced models. The LB has a 16.5-cubic foot motor bucket that hooks up to the front of skid-steer and articulated front-end loaders. A 25-by 60-inch brush sweeps dust and debris into the bucket for quick lifting and dumping by the loader.

Model TK-H power brooms are available in widths from seven to 10 feet and the model SHL is engineered for compact

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skid-steer and articulated loaders with 12 to 15 gpm at 2,000 psi hydraulic systems.

Model HL provides fast, clean-sweeping action with tractors and wheel loaders over 30-h.p. A 32- by 72-inch polypropy-



M-B Company's power broom.

lene, crimped wire or combination brush can be angled 30 degrees right or left. A PTO-driven hydraulic pump is included.

All M-B sweeper models include a loader adapter and all components for connecting to the tractor or wheel loader hydraulic system.

Circle 142 on reader service card

THE MODEL 600 HEAVY DUTY Thatcher from E-Z Rake is designed for faster time-saving action and is powered by a Briggs & Stratton 5-h.p. IC engine carrying a full two-year warranty.

A six-to-one gear reduction system controls the drive, while a recoil started and quiet tone muffler add to the ease of operation. E-Z Model 600 uses a heavy duty steel chain and sprocket drive with steel chain guards.

Rear wheels are steel with 8 by 2.75 semi-pneumatic tires and the front wheels are swivel bearing casters for ease of turning. The deck and tines of the E-Z Model 600 can be easily raised and lowered from the operator's seat by an adjustable steel lever.

Circle 143 on reader service card

CUB CADET IS NOW OFFERING A commercial machine capable of being converted to handle year-round maintenance needs. A mower easily becomes a power brush, a snowthrower or any number of attachments now being developed. Available in three engine sizes — 8.5 h.p., 12.5 h.p. and 15 h.p. with 32-, 38- or 46-inch cutting decks.

Circle 144 on reader service card

THE BRADCO 220 DROPHAMMER attachment for the Ford New Holland '89 445, 545 and 555 Industrial 2WD tractor loaders is now available from American Trencher Inc.

The hammer attaches to the backhoe mounting sills of the tractor line. The Bradco installed creeper gear sequences the tractor travel with the hammer stroke.

The drophammer has a maximum 10,728-foot pounds of drop force and comes with a wide range of tamping shoe

options from four- to 24 inches wide, asphalt cutters, concrete punch and demolition head.

Circle 145 on reader service card

A NEW LINE OF COMMERCIAL RIDING mowers, the Jaguar 4000 line, for heavy-use applications is now available from Ransomes Inc.

The Jaguar 4000 is a premium featured machine, built around a strong, welded steel frame. Mowing decks of either 61- or 74-inches are available and are constructed of heavy-gauge welded steel. The 74-inch deck has a deep-draft design which helps assure that all clippings are discharged out the chute, minimizing unsightly clumps.

Single-pedal hydrostatic control is standard on the Jaguar 4000. This low-effort foot pedal controls all of the machine's forward and reverse movements.

Circle 146 on reader service card

THE HEAVY DUTY DESIGN OF THE "Good Little Spreader" from PRSM, makes it ideal for spreading topdressings, soil and various composted materials. The unit can also be used to spread salt or sand for ice control purposes.

With the addition of optional side wall extensions, its standard one cubic yard hopper can be expanded to hold up to 5.5 cubic yards.

A 5-h.p. Briggs & Stratton engine powers its 36-inch nylon brush and its chain driven movable floor. The unit will distribute material evenly and can be pulled by a truck, large garden tractor or small industrial tractor.

Circle 147 on reader service card

BETTER BILT PRODUCTS INC. IS now offering a new line of tree and material handling carts featuring oversized high flotation turf tires with quality roller bearings.

The carts have a longer and stronger bottom lip to ensure easy pickup of tree balls and a double reinforced one-inch solid steel axle. All Better Bilt carts are coated with an electrostatically applied high gloss green polyester finish. Available in capacity sizes ranging from 1,000 pounds to 2,500 pounds.

Circle 148 on reader service card

AGRI-FAB INTRODUCES ITS NEW Super 6-1/2 Contractor, model 43-0201. The contractor features a 6-1/2 cubic foot (heap) capacity, a full-size 1 pc. two-inch wood handle, 16-inch four-ply pneumatic tires with 5/8 inch tube and ball bearings and a super tough high-density polyethylene tray.

Also available are models: 43-0198 with 4 cubic feet capacity; 43-0199, 5 cubic feet; and 43-0200, 6 cubic feet.

Circle 149 on reader service card

CALENDAR

AUG. 25-27

The Farwest Show, Portland Memorial Coliseum, Portland, Ore. Contact: Farwest Show, c/o OAN, 2780 S.E. Harrison, Suite 102, Milwaukie, Ore. 97222; 503/653-8733.

AUG. 27

New York Turf and Landscape Association's annual field day, University of Rhode Island, Kingston. Contact: Carol Muller, P.O. Box 307, Scarsdale, N.Y. 10583; 914/636-2875.

SEPT. 12-13

Virginia Tech Turfgrass Research Field Days, Virginia Tech Turfgrass Research Center, Blacksburg, Va. Contact: J.R. Hall III, 703/231-9736.

SEPT. 20-22

The Third Annual Nursery, Landscape Equipment Expo, Atlantic City Convention Center, N.J. Contact: S. Howard Davis, New Jersey Nursery & Landscape Association, Building A, Suite 3, 65 S. Main St., Pennington, N.J. 08534; 609/737-0890.

SEPT. 22-24

Bonsai & Orchid Expo, Hyatt Orlando Hotel, Kissimmee, Fla. Contact: Bonsai & Orchid Expo, 26 Pine Street, Dover, Del., 19901; 302/736-6781.

SEPT. 26

Northeast Sports Turf Institute, Holy Cross College, Wooster, Mass. Contact: Sports Turf Managers Association, 400 N. Mountain Ave., Suite 301, Upland, Calif. 91786; 714/981-9199 or the Professional Grounds Management Society, 12 Galloway Avenue, Suite 1E, Cockeysville, Md. 21030; 301/667-1833.

SEPT. 30 to OCT. 3

Green Industry golf challenge for the benefit of The Paul Tilford National Arborist Foundation, Sheraton Atlantic Shores Hotel & Towers, Myrtle Beach, S.C. Contact: NAA Golf, P.O. Box 1094, Amherst, N.H. 03031.

OCT. 4-6

International Pesticide Applicators Association Annual Convention & Trade Show, Salishan Lodge, Glenden Beach, Ore. Contact: John Landon, P.O. Box 247, Clackamas, Ore. 97015; 503/222-3161.

OCT. 8-11

Florida Turfgrass Association Annual Conference and Show, Curtis Hixon Convention Center, Tampa, Fla. Contact: FTGA, 302 S. Graham Ave., Orlando, Fla. 32803; 407/898-6721.

OCT. 10-13

The ALCA Interior Plantscape Division Conference and Trade Show, Boston Park Plaza, Boston, Mass. Contact: ALCA, 405 N. Washington St., Falls Church, Va. 22046; 703/241-4004.



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OCT. 13-15

Bonsai & Orchid Expo, Ridpath Hotel, Spokane, Wash. Contact: Bonsai & Orchid Expo, 26 Pine Street, Dover, Del., 19901; 302/736-6781.

OCT. 25-27

Annual Southwest Turfgrass Association Conference, Albuquerque Convention Center, Albuquerque, N.M. Contact: Bill Keneipp, 7017 Kiowa, N.E., Albuquerque, N.M. 87110; 505/884-3125.

NOV. 6-9

The 10th Annual Professional Lawn Care Association of America Conference and Trade Show, Las Vegas, Nev. Contact: Jim Brooks, 1000 Johnson Ferry Rd. N.E., Suite C-135, Marietta, Ga. 30068-2112; 404/977-5222 or 800/458-3466.

NOV. 7-10

New York State Turfgrass Association Annual Conference and Trade Show, Rochester Riverside Convention Center, Rochester, N.Y. Contact: Beth Seme, P.O. Box 612, Latham, N.Y. 12110; 518/783-1229.

NOV. 8-11

International Trade Fair for Design, Equipping and Care of Amenity Areas,

Cologne, West Germany. Participants include those interested in landscape construction, plants and seeds, chemical and biological products and golf course construction. Contact: Koln Messe, 221/821-2912.

NOV. 10-13

Green Team Conference and Trade Show, Cervantes Exposition Center, Omni Hotel, St. Louis, Mo. Contact: Associated Landscape Contractors of America, 703/241-4004 or Professional Grounds Management Society, 301/667-1833.

NOV. 12-15

Irrigation Association Annual Conference and Show, Anaheim Convention Center/Marriott, Anaheim, Calif. Contact: R.C. Sears, 1911 N. Fort Myer Dr., Suite 1009, Arlington Va. 22209-1630; 703/524-1200.

NOV. 14-15

1989 Indiana State Lawn Care Association Conference and Trade Show, Indiana State Fairgrounds, Indianapolis. Contact: Robert Andrews, ISLCA, P.O. Box 481, Carmel, Ind. 46032; 317/575-9010.

NOV. 28-30

Turfgrass and Ornamental Chemical Seminar, Purdue University, West Lafay-

ette, Ind. Contact: Barb Meyer, 317/494-7221.

DEC. 4-7

Ohio Turfgrass Conference and Regional Show, Ohio Center, Columbus, Ohio. Contact: John Street, 2021 Coffey Rd., Columbus, Ohio, 43210; 614/292-2601.

DEC. 4-5

Second Annual Southern Grounds and Turf Maintenance Exposition, Myrtle Beach Convention Center, S.C. Contact: Special Events Division, State Tech Board, Columbia, S.C.; 803/737-9351.

DEC. 5-6

The 36th Annual Rocky Mountain Regional Turfgrass Conference and Trade Show, Holiday Inn, I-70 and Chambers Road, Denver, Colo. Contact: Bill Shrum, P.O. Box 903, Parker, Colo. 80134; 303/688-2268.

DEC. 13-15

Desert Turfgrass/Landscape Conference and Show, Riviera Hotel, Las Vegas, Nev. Contact: Desert Turfgrass Show, 3376 S. Eastern Ave., Suite 148, Las Vegas, Nev. 89109; 702/735-0000. ■

PUT YOUR MONEY WHERE YOUR GRA\$\$ IS AT FTGA '89

Florida Turfgrass Association Annual Conference and Show
October 8-11, 1989 • Tampa, Florida

*The Largest Turfgrass Conference in the Southeast
Latest Facts About Warm-Season Turf • Industry Trends
Research Updates • Management Techniques and Practices*

CONFERENCE AND SHOW HIGHLIGHTS

LARGEST TURF SHOW IN THE SOUTHEAST

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Latest equipment, supplies, services
Silent Auction

7 WORKSHOPS

Aquatic Weed Control for Turf Professionals
Troubleshooting Turf Equipment Electrical Components
Disease Management in the Landscape
Nematode and Insect Management in the Landscape
Landscape Plant Selection and Management
Labor Relations and Personnel Management
Personal Finances and Money Management

TURFGRASS RESEARCH REPORTS

Latest Updates on FTGA Sponsored Studies

4 COMPREHENSIVE EDUCATIONAL SESSIONS

Golf Turf
Principles of Turfgrass Management
Lawn and Commercial Turf
Basics of Turf Management

SOCIAL EVENTS

Golf Tournament
Toro - Wesco - Zaun - Hector - Corn Boil
Bill Wagner Memorial Prayer Breakfast
President's Reception (for members)
Spouse Program

For registration and schedules call 407-898-6721



Florida Turfgrass Association
302 S. Graham Ave. • Orlando, Florida 32803

CLASSIFIEDS

RATES

All classified advertising is 55 cents per word. For box numbers, add \$1 plus six words. All classified ads must be received by the publisher before the 10th of the month preceding publication and be accompanied by cash or money order covering full payment. Submit ads to: *Lawn and Landscape Maintenance* magazine, 4012 Bridge Avenue, Cleveland, Ohio 44113.

ACQUISITIONS

WANTED TO ACQUIRE

Lawn care companies of all sizes in U.S. and Canada being sought by national corporation. Complete buy out or stay and grow with us. If interested please call me directly: Don Karnes, Senior Vice President, Tru Green Corp., 404/442-8700. Strict confidentiality maintained.

WANTED TO BUY

Lawn care companies of all sizes anywhere in U.S. wanted to purchase by national corporation. If interested please respond to: *Lawn & Landscape Maintenance*, Box 329, 4012 Bridge Ave., Cleveland, Ohio 44113. Strict confidentiality maintained.

SERVICE COMPANIES SOUGHT

Interested in buying/purchasing commercial grounds and landscape maintenance service companies of any size on East Coast. Interested parties write: *Lawn & Landscape Maintenance*, Box 335, 4012 Bridge Ave., Cleveland, Ohio 44113.

FOR SALE

LAWN CARE EQUIPMENT

Hannay reels new in-the-box, E1526s, E1530s, \$349; lawn spray hose, 275 psi and 20 psi, all sizes; original Imler measuring wheels, \$48; glycerin-filled gauges, 0-6 psi to 0-1,000 psi, \$19.95; polypropylene ball valves, 1/2-inch to 2-inch; ChemLawn guns, \$75.95; lawn spray boots, \$16.95; lawn spray gloves, \$1.75-pair. Call **Hersch's Chemical Inc.** 800/843-LAWN — outside of Michigan 313/543-2200

LANDSCAPE TRAINING VIDEOS

Intermediate mower maintenance field and shop repair; efficient/profitable mowing techniques; professional shrub trimming, plant installation, basic landscape plan drawing, etc. ENGLISH AND SPANISH. Write for free brochure: C.D. Anderson Landscape Videos, 515 Ogden Ave., Downers Grove, Ill. 60515. 800/937-0399.



EQUIPMENT AND CONSULTATION

Canann Industries announces the Chemtec line of sprayers designed for professional lawn care use. Custom design sprayers; Professional spray consultation, Flo-jet 12-volt pump; Backpack sprayers; Hannay reels; JD9CT guns; Glycerin gauges; Spray System parts; Hypro and Udor pumps and replacement parts; High Pressure Cleaners. Call today for Chemtec catalog, 800/842-7515 (AL); 800/633-7560 (U.S.)

ROTARY MOWER

1987 Howard Price Hydro 180. 15-foot rotary lawn mower. Diesel motor. Very low hours. Asking \$15,500. Moving, must sell. Call Mark at 508/430-1533.

GANG MOWER

Ransomes 350D, 5 gang mower, 6 bladed Magnum reel under 500 hours. \$24,000 or best. 1988. Call Mr. Jacoby at 313/651-9140.

UNIT SPRAYER

Permanent, trailer-mounted sprayer unit. 300-gallon, Myers pump, Kohler engine, 300 feet of hose and electric reel. Interested parties write: *Lawn & Landscape Maintenance*, 4012 Bridge Ave., Cleveland, Ohio 44113.

HELP WANTED

FOREMAN POSITION

Top firm needs foreman. Quality conscious Texas-based landscape management firm has immediate opening for detail-oriented landscape maintenance foreman. If you have outstanding professional and horticultural skills and are not

afraid of hard and healthy teamwork, then you could qualify for a top position with the finest landscape firm in the Southwest. Outstanding compensation and opportunity. Reply today to: *Lawn & Landscape Maintenance*, Box 325, 4012 Bridge Ave., Cleveland, Ohio, 44113.

Proturf Technical Rep

Scotts Professional Division is seeking qualified candidates for the position of ProTurf Tech Rep within it's national sales force.

Tech Reps are responsible for the sale, promotion, and servicing of Scotts commercial ProTurf products to those professionals responsible for the management of large turf areas such as athletic fields, college campuses, and lawn care service companies. Tech Reps specialize in product knowledge and agronomic expertise to recommend and sell the Scotts ProTurf product line.

The ideal candidate will have a college degree in turf management or agronomic science and turf related job experience.

Scotts offers an excellent starting salary plus incentive and a comprehensive benefit program including profit sharing. Interested candidates should send a resume with current salary level in confidence to: **Corporate Human Resources, O.M. Scott & Sons Company, 14111 Scottslawn Road,**

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It pays to advertise in the
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CLASSIFIEDS**

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* Depicts regional advertisement.

Irrigation News

(continued from page 16)

Nov. 30, Orlando, Fla.; and Dec. 5, Atlantic City, N.J., (at the N.J. Irrigation Association convention.) Applications must be received 60 days prior to the exam date. Contact: Gretchen Sears at the IA office, 703/524-1200.

WATER SHORTAGES PROMPT CITIES TO APPROVE NEW SPRINKLER PLANS

Some municipalities are beginning to require approval of sprinkler irrigation plans in an effort to conserve water, according to the director of Cal State-Fresno's Center for Irrigation Technology. Kenneth Solomon told contractors at Century Rain Aid's Expo '89 that some California municipalities have begun to require approvals for new building permits to conserve water in arid states.

"People are trying to check on the adequacy of the sprinkler system through the permit process (for both commercial and residential developments)," Solomon said.

BROCHURE, VIDEOTAPE ILLUSTRATE NEED FOR WATER CONSERVATION

The Irrigation Association has completed the water conservation brochure, "No Water...No Future," which is now being distributed to those directly involved with water, particularly water districts.

The four-color brochure outlines water problems facing all parts of the country, and explains how the irrigation industry can help conserve water in both urban and rural areas.

The next step in the IA's water conservation program is the preparation of an audiovisual program aimed at educating interested groups about irrigation — its benefits and its orientation toward conservation. The association is accepting footage from irrigation companies for use in this project. Call the association at 703/524-1200 for more information.

CASSIDY APPOINTED PRESIDENT OF AMERICAN WATER FOUNDATION

F.E. Cassidy was recently appointed president of the American Water Foundation. Cassidy, director of international development for Tenneco Inc., Houston, Texas, has been a member of the AWF board since 1986.

AWF is a private, non-profit organization dedicated to the international transfer of U.S. water resources technology. It organizes international seminars, research and training programs in the field of water technology, irrigation and conservation.

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leaves into the dungeon and throws away the key all season long.

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Yet turfgrass has nothing to fear. New Gallery is actually more tolerant on your turf than other herbicides. So there's no risk of off-site damage to nearby ornamentals, gardens and trees.

Put an end to the horror of broadleaves. Instead of hearing "They're back," start saying, "They're gone." With new Gallery. See your Elanco distributor. Or call toll-free: **1-800-352-6776**.

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Circle 99 on reader service card

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with built-in maneuverability and proven performance.

Powered by an 8-HP Honda engine, the LESCO Renovator 20 features exclusive hydraulic drive with 0 to 2 mph forward speed control. Spring-loaded reverse gives the unit greater maneuverability in tight areas and simplifies trailer loading and unloading. A compact low-profile

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