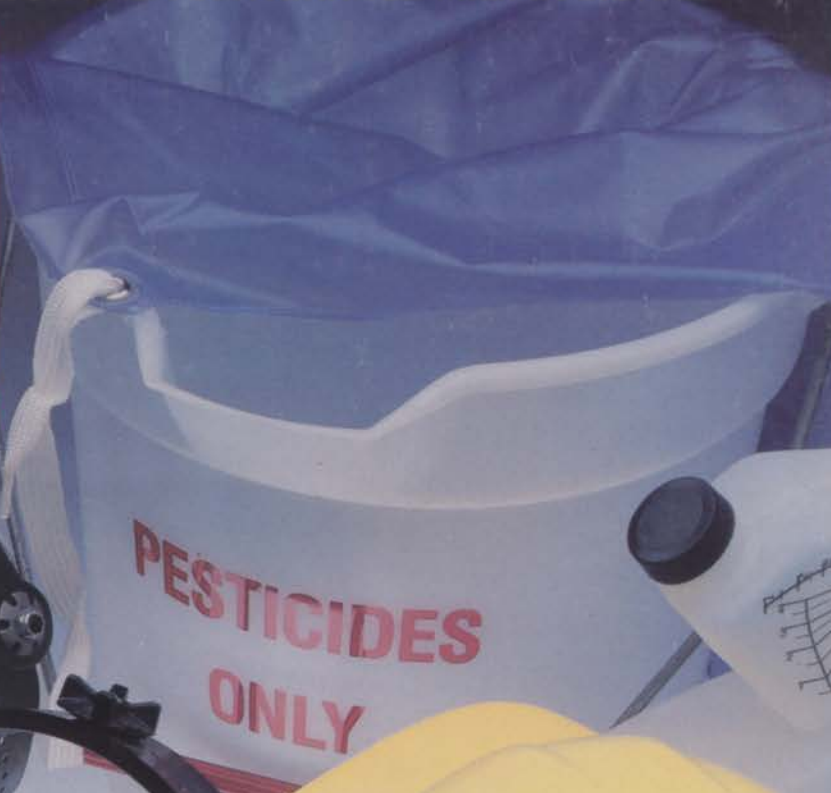


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IN THIS ISSUE:
SPECIAL CHEMICAL PRODUCTS SECTION
CUSTOMER RETENTION
WATER INFILTRATION
USING SOIL SURFACTANTS

IN-HOUSE SAFETY

Protective Equipment is a Critical Area in Yearly Inspections

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Some cancellations even TURFLON can't prevent.

When your customers move away from you, the best herbicide in the world can't make them stay. But when more than 24% of LCO customer losses are due to poor weed control—as cited in one recent study—then it's time to take a look at your herbicide.

TURFLON^{*}: Superior control. For outstanding control of a wide spectrum of broadleaf weeds, there's nothing like TURFLON herbicide. It even gets the stubborn Hard to Control weeds—oxalis, ground ivy, wild violet, spurge and the like—that other herbicides often miss. So your customers stay happy... and stay with you. And you have fewer complaints, fewer costly callbacks, fewer cancellations.

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Fewer weeds, fewer cancellations.



*Trademark of The Dow Chemical Company

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Now there's the new diesel-powered model Cushman 807.

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ALA

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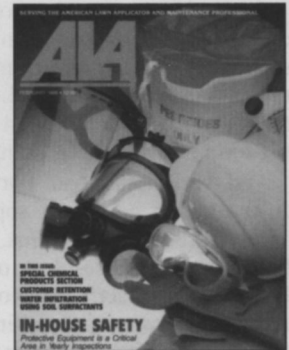
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COVER

Protective gear is a must for technicians dealing with chemicals and various machinery. On page 30, our in-house safety article features some tips on keeping these important tools in good form. Safety products courtesy of LESCO Inc., Rocky River, Ohio. (Cover photo by Barney Taxel)

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INSIDE STORY

Now more than ever, the chemical buying decision is one of the most important choices companies will make. In a year which promises to bring more regulations over the application of pesticides, chemicals are certain to be a hot topic throughout the year.

In a recent interview, John Pope of CoRoN Corporation said 1988 is a volatile year with some buyers' decisions being "coached by concern over the pesticide issue."

Pope said he noticed buyers being more cautious in their decisions. In addition, he saw more loyalty to a specific manufacturer, rather than shopping around. "In my opinion, the players have settled out. There's not too much changing going on."

And that's not all bad. For a young industry taking on added sophistication, loyalty can be viewed as a plus, according to Jim Champion, president of Riverdale Chemical Co. In fact, Champion said, loyalty is a two-way street, something which significantly benefits everyone in the industry.

When talk of the chemical buying season comes around, no doubt there's speculation on what the new year will bring. Most of those recently interviewed agreed that



1988 will once again be a good year for the green industry. Although their reasons varied, cautious optimism was the general consensus.

"I'm not sure the market is expanding all that greatly, I think it's just being segmented differently. It is growing enough, however, for changes in the marketplace to occur," Champion said.

When it comes down to products, there's

quite a few new ones available this year. And if they're not new, improvements have been made in the product itself or in its packaging.

Our yearly special chemical products section will attune you to what's available in the market. It is a comprehensive listing, but because of space limitations the information is presented in an abbreviated form.

In this issue you will also find results from a recent survey The Dow Chemical Co. conducted to determine the major reason for callbacks and cancellations in the industry. The survey was conducted at a recent Professional Lawn Care Association of America conference, with the results being published exclusively in ALA.

We're sure you'll find the results interesting and helpful as you prepare for the new season.

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Prentiss Pest-Asides

Prentiss Drug & Chemical Co., Inc.

Product Notes

NEW PRENTOX® DZN 2.0 MEC PACKAGE

Prentox® D.Z.N. 2.0 MEC is now available in 60 fl. oz. Tip-N-Measure® Containers. This product is a micro-emulsion concentrate that contains two pounds of Diazinon per gallon. It offers numerous advantages over competitive products: lower odor than the usual 4 lb. per gallon Diazinon;

longer residual than Dursban® L.O.; stable for up to two weeks after mixing. The new packaging offers more accurate measurement of dosages—24 even doses at the 2½ fl. oz./gal. maintenance rate and 12 even doses at the 5 fl. oz. clean out rate per bottle. Contact your local PCO distributor for further information.

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Happy 70th

It's hard to believe that 1988 will mark the 70th Anniversary of the founding of Prentiss Drug & Chemical Co., Inc. by R.J. Prentiss and J. Miller. So much has occurred since the company started doing business in 1919. While Prentiss' business in the early days was centered around trading of chemicals, botanical drug raw materials and herbs and spices, the company was also in the botanical insecticide business. As we've said, so much has happened that we'd like to tell you more of the story in future Prentiss Pest-Asides. Right now, we would sincerely like to thank all of our customers for making our 70th Anniversary possible and the future for Prentiss so bright.

PRENTISS PRODUCTS NOW AVAILABLE IN 2½ GALLON PLASTIC CONTAINERS

To make using our products even more convenient and practical, we have now added 2 x 2½ gallon Nyalene® plastic containers to our product line. The following products will now be sold in this packaging instead of metal 5 gallon cans, but at the same price the 5's used to be.

EPA REG. NO.	PRODUCT NAME
655-492	Prentox® Vapon 20% EC
655-491	Prentox® Vapon 2 EC
655-536	Prentox® DDVP-Five
655-692	Prentox® Vapon 4E
655-457	Prentox® Diazinon 4E
655-459	Prentox® Diazinon AG-500
655-579	Prentox® Lindane 20% EC (Restricted Use Pesticide)
655-777	Prentox® 5# Malathion Spray
655-598	Prentox® Malathion 50% Emulsifiable Insecticide

This new packing offers several advantages: Less freight damage; Easier disposal after triple rinsing—containers can be cut up; And easier to handle since each container weighs less than half as much as a five gallon pail of the same product.

Government Regulations Update



SUPREME COURT FORCES OSHA TO EXPAND S.A.R.A. TITLE III COVERAGE

We think you should be aware of a recent Supreme Court decision that has the effect of forcing OSHA to expand coverage under Title III of the Superfund Amendments and Reauthorization Act of 1986. The U.S. Small Business Administration estimates that an additional 4.6 million businesses will now be covered by this regulation. Any employer (even a church employing a janitor who uses floor strippers) would now fall under this act.



Richard A. Miller

IN THE SPOTLIGHT

We are pleased to announce that Richard A. Miller, Executive Vice President of Prentiss was elected to the Board of Directors as well as Vice President of the Chemical Producers and Distributors Association at their Annual Meeting in August. Richard will serve a one year term as Vice President and a three year board term.

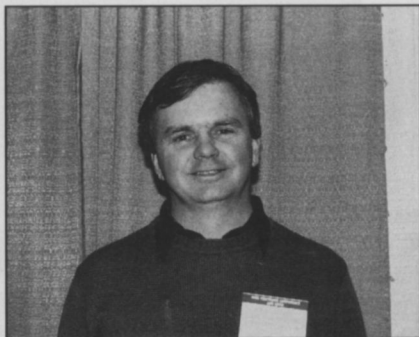
C.P.D.A. is an Association of about 50 companies involved in the manufacture, formulation and distribution of pesticides and chemicals to the agricultural and non-agricultural markets. The Association has been very active in this year's FIFRA (Federal Insecticide, Fungicide and Rodenticide Act) reauthorization hearings and has had considerable bearing on the outcome.

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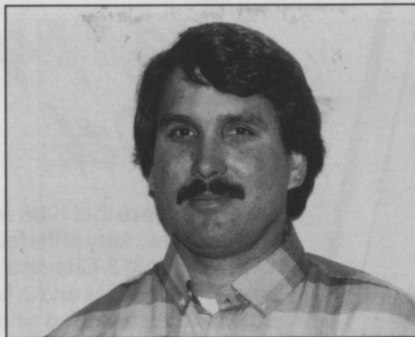
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VIEWS ACROSS THE INDUSTRY

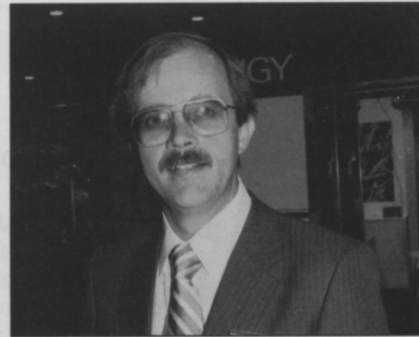
HOW DO YOU HANDLE SAFETY MATTERS?



"All of our containers are marked thoroughly so there are no mistakes. Everything is in a plastic container and goes on the truck in a box with a lid on it. It's locked up (to protect) any children during the day that might get curious and go near the truck. Trucks carry sponges in case there is a spill. Safety is a number one thing and I wish more of the lawn sprayers would really heed to it and watch it closely. I make my drivers walk around their trucks to make sure everything is in order before they pull out." — *George Jackson, D & G Lawn Spraying, South Lyon, Michigan*



"Unfortunately, it's our weakest area. Now that it's our slow time of year, we're going to start a monthly meeting. I'll incorporate the safety stuff along with some technical training. I tell everyone to wear ear protection when they run our equipment. They wear a face shield when they run edgers and string trimmers. It's just common sense. The main thing I stress in safety is how they drive the trucks; to make sure the brake lights work. I'm worried about them running into somebody more than anything." — *Larry Bourbonnais, Larry Bourbonnais Company, Riverside, California*



"Fill-up procedures involve checks and balances and we have special forms. We have put together a certification program, not only for people that fill up the trucks, but also for technicians that handle any type of pesticides. All of our employees receive training which includes Material Safety Data, first aid, what to do for spills, etc. Our homeowners are notified when we are going to make an application. Once they've received the application, their lawn is posted and their invoice gives them some safety precautions." — *Jim Stevens, Nitro-Feed Corp., Utica, Michigan*

CALENDAR

Feb. 14-17

Associated Landscape Contractors of America Convention, San Diego, Calif. Contact: ALCA national headquarters, 405 N. Washington Street, Falls Church, Va. 22046; 703/241-4004.

Feb. 15-16

1988 OPTI-GRO Athletic Field Maintenance Seminar, Indianapolis, Ind. Contact: Pat Cook, OPTI-GRO Division of MANTEK, 1775 The Exchange, Suite 300, Atlanta, Ga. 30339; 800/241-3302; in Georgia, 404/952-0228.

Feb. 16-17

Northeastern Pennsylvania Turfgrass & Grounds Maintenance School, Luzerne County Community College, Nanticoke, Pa. Contact: William Pencek, Lackawanna County Extension Service, 200 Adams Avenue, Scranton, Pa. 18503; 717/963-4761.

Feb. 22-23

OSU Professional Lawn Care Seminar, Riverside Inn, Columbus, Ohio. Contact: Sue White, 614/292-7457 or Doug Thompson, 614/292-4230.

Feb. 22-23

1988 OPTI-GRO Athletic Field Maintenance Seminar, Tulsa, Okla. Contact: Pat Cook, OPTI-GRO Division of MANTEK, 1775 The Exchange,

Suite 300, Atlanta, Ga. 30339; 800/241-3302; in Georgia, 404/952-0228.

Feb. 23-25

Western Pennsylvania Turf Conference & Trade Show, Pittsburgh Expo Mart/Marriott Hotel, Monroeville, Pa. Contact: Randy Zidik, Rolling Hills Country Club, 261 Center Church Road, McMurray, Pa. 15317; 412/941-8552 or Pennsylvania Turfgrass Council, P.O. Box 417, Bellefonte, Pa. 16823-0417; 814/355-8010.

Feb. 29-March 1

1988 OPTI-GRO Athletic Field Maintenance Seminar, Milwaukee, Wis. Contact: Pat Cook, OPTI-GRO Division of MANTEK, 1775 The Exchange, Suite 300, Atlanta, Ga. 30339; 800/241-3302; in Georgia, 404/952-0228.

Feb. 29-March 2

Midwest Regional Turf Conference, Stewart Center, Purdue University, West Lafayette, Ind. Contact: Jeff Lefton, Department of Agronomy, Purdue University, West Lafayette, Ind. 47907; 317/494-9737.

March 2

20th Annual Professional Turf and Plant Conference, sponsored by Nassau-Suffolk Landscape Gardeners Association in cooperation with the

Nassau and Suffolk Cooperative Extension Associations, Nassau Veterans Memorial Coliseum, Uniondale, Long Island, N.Y. Contact: NSLGA, 59 Orinoco Drive, Brightwaters, N.Y. 11718; 516/666-2250.

March 7-8

1988 OPTI-GRO Athletic Field Maintenance Seminar, Chicago, IL. Contact: Pat Cook, OPTI-GRO Division of MANTEK, 1775 The Exchange, Suite 300, Atlanta, Ga. 30339; 800/241-3302; in Georgia, 404/952-0228.

March 8

8th Annual Professional Turf & Ornamental Seminar, sponsored by the Brooklyn Landscape Gardeners Association in conjunction with Cornell Cooperative Extension in New York City, Glen Chateau, Brooklyn, N.Y. Contact: Robert Carbone, Brooklyn Landscape Gardeners' Association Inc., 1110 East 34th Street, Brooklyn, N.Y. 11210.

March 9-12

Winter Tri-Board of the California Landscape Contractors Association, Registry Hotel, Universal City, California. For all green industry professionals — not just CLCA members. Contact: Yvonne Fenner, CLCA Headquarters, 2226 K St., Sacramento, Calif. 95816; 916/448-CLCA.

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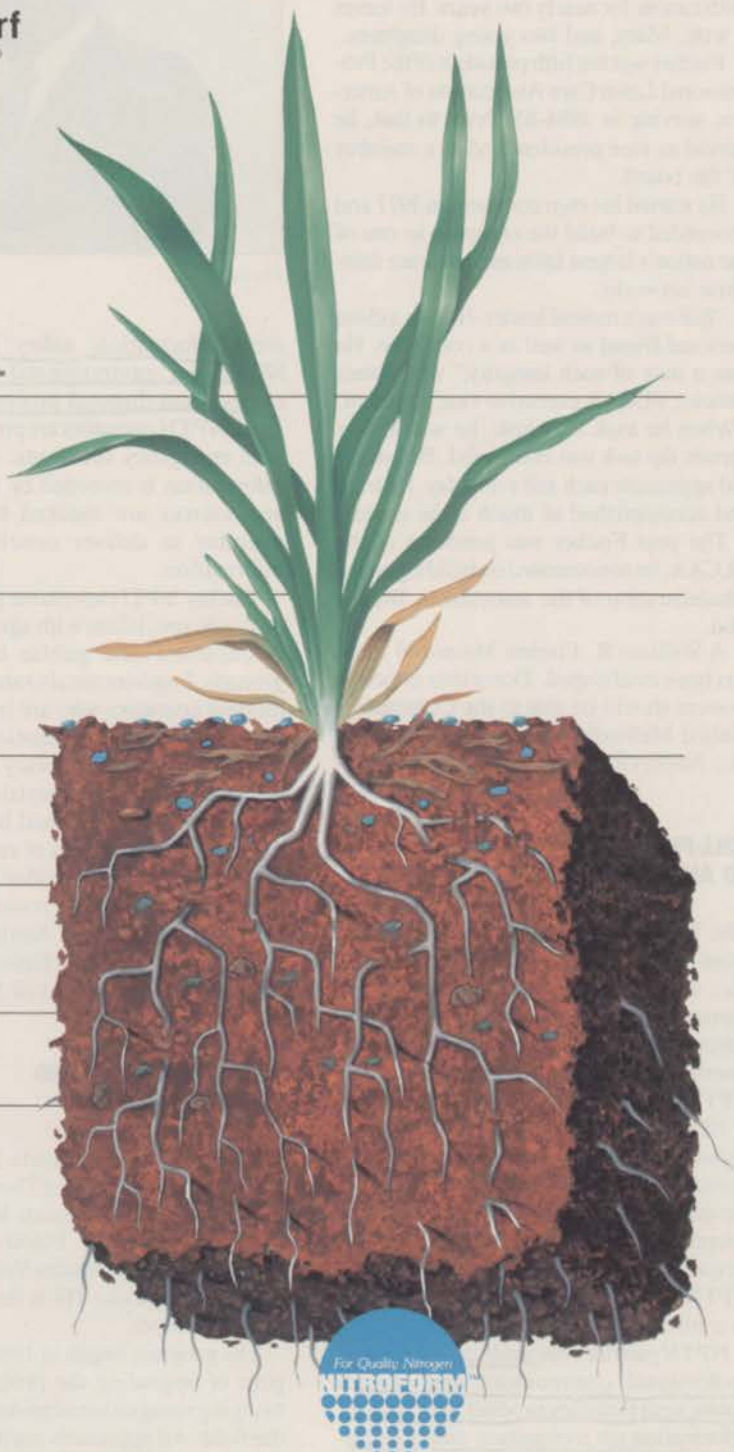
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NEWS IN BRIEF

FISCHER DIES AFTER BOUT WITH CANCER

William Fischer, long active in the lawn care industry, died Jan. 7. He was 41.

Fischer, founder of Spring Green Lawn Care Corp., Naperville, Ill., had been sick with cancer for nearly two years. He leaves a wife, Mary, and two young daughters.

Fischer was the fifth president of the Professional Lawn Care Association of America, serving in 1984-85. Prior to that, he served as vice president and as a member of the board.

He started his own company in 1977 and proceeded to build the company to one of the nation's largest lawn and tree care franchise networks.

"Bill was a natural leader. He was a close personal friend as well as a colleague. He was a man of such integrity," said James Brooks, PLCAA executive vice president. "When he took on a task, he was always certain the task was completed. Bill really did appreciate each and every day. He tried and accomplished as much as he could."

The year Fischer was president of the PLCAA, he concentrated on building up the administration of the association, Brooks said.

A William R. Fischer Memorial Fund has been established. Donations in lieu of flowers should be sent to the Community United Methodist Church, 20 N. Center St., Naperville, Ill. 60540.

TOLL-FREE HOTLINE SEEKS TO ANSWER PESTICIDE QUESTIONS

The National Pesticide Telecommunications Network is a toll-free telephone service available to provide a variety of impartial information about pesticides to anyone in the contiguous United States, Puerto Rico and the Virgin Islands. The NPTN toll-free number is 1-800-858-PEST.

NPTN operates 24 hours a day, 365 days a year. The program is designed to provide accurate and prompt responses to requests for information. Answers are given on the telephone or sent in the next day's mail. Requested information that is outside NPTN's expertise or authority is referred to a more appropriate source.

NPTN provides the medical, veterinary, professional communities and general public with pesticide product information; information on recognition and management of pesticide poisonings; toxicology and symptomatic reviews; referrals for laboratory analysis; investigation of pesticide incidents and emergency treat-



Fischer

ment information; safety information; health and environmental effects; and cleanup and disposal procedures.

All NPTN operators are prepared to deal with emergency situations. All pertinent information is recorded by the operator, and sources are checked to enable the operator to deliver concise, accurate information.

The key NPTN telephone personnel are pesticide specialists with agricultural, environmental and public health backgrounds. Inquiries are also answered by additional operators who are trained to provide and interpret information for callers.

NPTN maintains a library of up-to-date technical reference materials on toxicity, human and environmental health effects, disposal and proper use of each pesticide.

NPTN funding is provided by the United States Environmental Protection Agency, with additional share funding provided through the Texas Tech University Health Sciences Center School of Medicine.

19th PERSON CERTIFIED IN PGMS PROGRAM

The Professional Grounds Management Society recently awarded Thomas E. Flood for completing its Grounds Manager Certification Program. Flood is the head groundskeeper at Poudre Valley Hospital, Fort Collins, Colo. He is the 19th person to be certified.

The program began in 1980 for the purpose of upgrading the professional, and bringing recognition of professionalism to the field. All applicants must be approved by the certification committee, pass a closed-book test and complete a series of booklets on the various phases of grounds management.

Flood is an active PGMS member, joining the society in 1985.

DOW LAUNCHES 'THE PARTNERSHIP' PROGRAM

The Dow Chemical Company will launch a new program this year designed to package its support of the lawn care industry.

Called "The Partnership," the effort is intended to increase awareness of the added value Dow builds into the products it provides to the industry, according to company officials.

The program will offer marketing assistance, technical expertise, research and development, government relations, association sponsorship, public relations, sales support materials, technician training and business support.

To provide this information, Dow has 40 field representatives located throughout the U.S. to provide marketing strategies, answers to customer questions, counseling on sales operations and speeches for industry association meetings.

It offers a wide variety of training materials including slide modules, video programs and printed course materials for LCO company training seminars. Dow seminars on sales training, marketing and other business subjects are also offered by the company.

A new one-day course on service business concepts, taught by an industry consulting firm, is now in place and is currently being introduced to the industry.

"We want LCOs to understand that when they buy our products they are getting much more than just a chemical. Dow is dedicated to the urban pest control industry," said Larry Speer, marketing manager for Dow's industrial insecticides business.

OLD FOX ACQUIRED BY TRU GREEN CORP.

Old Fox Lawn Care Inc., a well-known lawn care company in the New England area, was recently acquired by Tru Green Corp. of Alpharetta, Ga., for an undisclosed amount of money.

Now known as Old Fox—a Tru Green Company, the business will remain in the New England area, but will have the ability to provide added services to its customers, according to John Kenenski, district manager.

Kenenski said company officials had been in negotiations concerning its sale for about

(continued on page 14)

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You'll also like the fact that CHIPCO 26019 fungicide now comes in a convenient flowable formulation as well as wettable powder. Plus, CHIPCO 26019 fungicide is low in toxicity, for added protection to applicators and homeowners.


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NEWS

(continued from page 10)

a year, and recently gave approval for the friendly acquisition to Tru Green because officials liked its arrangement with Waste Management.

Waste Management acquired Tru Green last fall — an arrangement joining the second-largest lawn care company in the nation with the nation's largest waste disposal company.

At the time of the acquisition, Old Fox had revenues of \$9.5 million with branches in Rhode Island, Connecticut and Massachusetts.

Kenenski said the new operation will allow Old Fox to cover its territory with the ingenuity of both companies and take advantage of two customer bases.

Kenenski said he doesn't expect any immediate changes in management or other personnel.

NEW PROFESSIONAL GROUP WANTS TO HELP 'LITTLE GUY'

A new counseling group, Business Development Associates, has been established to give experienced, professional advice to small and medium-sized companies.

The new concept fills a need often ex-

pressed by many smaller companies — they cannot afford the variety of top, experienced business talent readily available to the larger "blue-chip" companies. The smaller companies, until now, simply could not obtain first-class professional advice on hundreds of business problems required in today's complicated marketplace. Consequently, less-than-expert advice, trial-and-error methods and judgment calls based on estimates result in costly mistakes and expenditures that could have easily been avoided.

For example, just a new package design or new logo could require thousands of dollars in man-hours and prove ineffective anyway. Business Development Associates membership puts the counsel of top management specialists at the pinnacle of their professions, immediately on call. These nationally recognized professionals, with many years of successful experience, attack the problem head-on with specific solutions that are practical, creative and economical.

Primary areas of expertise are finance, design and sales promotion including management, advertising and direct marketing. No legal advice is offered.

Membership in BDA is open to all businesses: manufacturing, distribution, retailing and mail marketers. Members receive an exclusive ID number, non-transferable

membership card and a portfolio listing hundreds of business services covered, plus request forms and simple instructions.

A \$36 annual membership in the association entitles business members to counsel and service on planning, financing, new product design, marketing, sales and advertising.

For full confidential particulars write: Attn. Publicity Department 143, Business Development Associates, 9903 Santa Monica Blvd., Beverly Hills, Calif. 90212.

TEMPLE UNIVERSITY OFFERS NEW GREEN DEGREES

The Board of Trustees of Temple University has approved two new four-year bachelor's degree programs in horticulture and landscape architecture, beginning September 1988 on Temple's suburban Ambler campus in Upper Dublin Township.

Both degrees will take an ecological approach to understanding and managing the natural and designed landscapes. Students in the programs can broaden their technical knowledge of horticulture and landscape design, and develop their business and personnel management skills.

For more information, call or write the Department of Horticulture and Landscape



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THE GREEN MACHINE HEADS TO THE HIGHWAYS — AGAIN

For the fourth season, The Green Machine has taken its traveling seminar program for power equipment dealers to the nation's highways.

Spurred on by earlier successes, The Green Machine has launched the team of National Service and Regional Managers on an exhaustive schedule of 58 stops in 32 states over a five-month time span. The Green Machine is a division of HMC.

"The service seminar program has produced spectacular results for us. The manner of presentation has received rave reviews from attendees all over the country," said Dale Evenson, HMC president. "I believe it has played a leading role in the effective application of the curriculum."

Each day-long seminar is designed to help Green Machine distributors and dealers realize their total service capabilities. The emphasis this year is on The Green Machine Expand-It® lines featuring the new Panther series.

Seminar topics include new product orientation and servicing; parts support to increase service profitability; merchandising as a service tool and as an investment for future growth; and how to promote a total service dealership through effective advertising.

More than 2,100 distributor and dealer representatives attended the last seminar series and company officials expect to exceed that total by a significant percentage when the current tour is completed.

LANDSCAPE CERTIFICATION TEST APRIL 16-17

The California Landscape Contractors Association will administer the next certification exam for landscape technicians April 16-17 at Pierce College in Woodland Hills, Calif. Landscape workers who pass the test will receive designation as certified landscape technicians.

The exam is a hands-on test of practical skills in the field. Applicants construct sample projects to demonstrate their abilities in 10 major skill areas including plan reading, irrigation installation, grading and drainage and carpentry.

The 10 skill areas are subdivided into 27 problems. Completing all problems takes 14 hours during a two-day period.

To be eligible for the exam, applicants must have experience in each of the 10 skill areas covered by the test. They must also submit a recommendation from a licensed

contractor or certified landscape technician. In addition, it's strongly recommended that applicants have two years full-time experience with a licensed landscape firm or 4,000 hours of part-time work.

To receive application information, contact Micheyl Barnett, CLCA Headquarters, 2226 K Street, Sacramento, Calif. 95816, 916/448-CLCA.

GRAINGER OPENS BRANCH OFFICE IN MICHIGAN

Grainger, the nation's largest distributor of

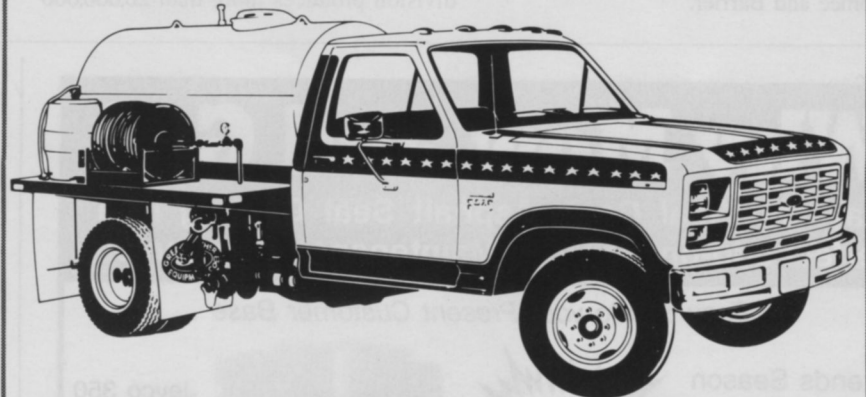
electrical, mechanical and other products for industrial and commercial markets, plans to open nearly 35 new branch facilities this year.

Its latest facility is opening in Ann Arbor, Mich. Grainger can have phone orders ready for pick-up one hour after placement and in most cases can provide 24-hour delivery service.

"While pursuing these growth plans, we are paying particular attention to making sure our main concern remains the customer," said Robert J. Hoagland, branch manager. "We are committed to maintain-

NEW

from
Precision Tank & Equipment Co.
for the
Lawn Care Industry



Precision, a leader in agricultural fertilizer application equipment for over 30 years — now brings the lawn care professional the NEW GN600.

Just look at these impressive GN600 features:

- 600 gal. stainless steel tank for 200,000 sq. ft. coverage.
- One ton Ford truck with 6.9 liter IH diesel engine.
- PTO driven 2-C-95 Myers Pump.
- Stainless steel plumbing, sparge line and full sump.
- American Nordic reel with 500 ft. of ½" hose.
- Industry-proven Chem-lawn Spray Gun with nozzles.

Other models - the GN1000, GN1200 and GN1600 offer the same top-of-the-line components with larger chassis and payloads. All Precision systems are available for mounting on customer-owned chassis.

NEW — a Portable Slide-in Skid Unit.

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ing our traditional strengths of high quality, competitive prices and an in-depth inventory. In fact, we now stock more than 18,000 items.

Grainger, an Illinois-based company boasting \$1.2 billion in sales, has mapped out ambitious expansion plans to carry them through 1990.

BIOCHEM PRODUCTS RELOCATES TWO DIVISIONS

PBI-Gordon Corp., Kansas City, Mo., and Duphar, B.V. of the Netherlands, have announced an agreement transferring the product development and marketing operations of Biochem Products, Montchanin, De. to the Kansas City firm.

Biochem's principal products, Bactimos and Bactospeine, bacterial insecticides for controlling mosquitoes, black fly and lepidopterous insects, will continue to be available under the same names and formulations as in the past.

Biochem Products had been a division of Salsbury Laboratories Inc., a Solvay company. Duphar, also a part of the Solvay group, has had a close affiliation with PBI-Gordon since 1981, supplying the active ingredient for Gordon's soil-active herbicides, Norosac, Dyclomec and Barrier.

HINES WINS TOP AWARD IN L.A. GARDEN SHOW

Participating in the Los Angeles Garden Show for the first time, Hines Nurseries won a first place award for its "English Cottage Garden."

Hines, a major wholesale nursery, also received a special award for the fragrances of the herbal plants it incorporated into its display.

The 7th annual garden show was recently held in the Los Angeles State and County Arboretum. This year's theme was "The English Influence," a style that is spreading rapidly throughout Southern California.

An English fountain, surrounded by scented, herbal foundation plantings, stood in the garden's center. Framing the garden were gelsemium and boxwood hedges, which also served as protection from the wind.

A decorative bench set on granite, faced the fountain. Walking down a narrow path made of decomposed granite, past a bird bath, leads to the garden's "romantic corner" with a small pond.

Hines, a division of Weyerhaeuser Corporation, has nearly 800 acres under its control at three locations—Houston, Texas, and Vacaville and Santa Ana, Calif. The division produces more than 20,000,000

plants every year, from liners to 15-gallon trees.

LANDSCAPE MAINTENANCE SEMINAR AVAILABLE ON CASSETTE

A landscape maintenance seminar on pricing strategies has been released on audio cassettes by the California Landscape Contractors Association. "How to Price Landscape Maintenance Services...for Profit" is recorded on six audio cassettes and comes with a 50-page reference manual prepared by George Koziarz.

Koziarz is a featured speaker at industry conferences throughout the United States. His pricing seminar has been highlighted at meetings of the Professional Grounds Management Society.

Special tape segments cover "Creating a Cash Flow Strategy," "Managing Your Controllable Costs," "Developing a Workable Budget," and "Organizing Your Estimating System." The cassette series is designed for owners, managers and estimators looking for an organized method of pricing services profitably while keeping costs under control.

To obtain an order form for the cassettes and reference manual contact CLCA at 2226 K Street, Sacramento, Calif. 95816. 916/448-CLCA. ■

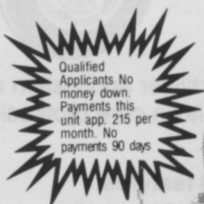
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CLIPPINGS

Olympian effort. The United States Olympic Training Center, Colorado Springs, Colo., was the perfect site for a pep talk when Briggs & Stratton Corporation brought together its top distributors to familiarize them with the company's 1988 Olympic promotion program.

An official sponsor of the 1988 U.S. Olympic Team, Briggs & Stratton has developed an entire promotional campaign which will run through May 31. The program gives consumers the opportunity to win a variety of prizes through the "Go the Distance Sweepstakes" and "Go for the Gold Giveaway".

The sweepstakes involves the company's 25,000 authorized service dealers nationwide and allows consumers to win walk-behind or riding mowers, rear projection stereo televisions, home body-building equipment and many other prizes. The grand prize is an all expense paid trip for two to Seoul, Korea, site of the 1988 Summer Games.

Targeted for the mass merchandisers, the giveaway will culminate in a June drawing, in which a lucky consumer will win one kilo of gold, worth approximately \$12,000 at present exchange rates.

Charles Fricke, vice president of service for Briggs & Stratton, said it was important that the central distributors understand all aspects of the Olympic program. "They are the top of our distribution pyramid and therefore strongly influence our service dealers and mass merchandisers. The centrals are going to make this campaign a success."

During the gathering, which was billed as the "Long Distance Runners Meeting," the group heard from Bill Toomey, Olympic Decathlon champion from the 1968 Summer Games in Mexico City. John Thompson, head basketball coach at Georgetown University and the coach of the 1988 Olympic team, also met with Briggs & Stratton personnel.

A kiss hello. The folks at Gravelly International have always believed that the way to sell outdoor power equipment is to make top quality machines. But then again, having a few dealers endowed with the gift of gab couldn't hurt either.

On a recent trip to Ireland, a group of Gravelly dealers "bent over backward" in hopes of being granted such powers from the legendary Blarney Stone. "That's how you do it," said Marshall Goodknight of Goodknight Lawn Equipment in Vero Beach, Fla. "You hold onto an iron bar, lie

flat on your back, bend your head back and kiss the Blarney Stone."

Embedded in the south wall of Blarney Castle in County Cork, the stone is said to give those who kiss it the gift of eloquent speech.

The visit to the castle was part of a tour to Dublin and Killarney, offered to Gravelly dealers who had qualified under the company's Four Seasons Frequent Buyer Program.

The group, which included company executives and their spouses, numbered 31. They left from New York's Kennedy International Airport Oct. 10 and arrived in Dublin the next morning. The following week

17, tired but happy. As for the impact that kissing the Blarney Stone might have had on sales, Rick Murray, Gravelly's vice president of marketing said, "We'll have to wait and see."

Where's the lawn? According to The Lawn Institute, many home lawns across the United States receive too little sunlight for adequate growth and development. This problem sometimes arises as landscapes mature and little trees grow into big trees. Woody vegetation will often dominate the yard resulting in a "forest."

Where this type of growth is desired, the



Marshall Goodknight of Goodknight Lawn Equipment, Vero Beach, Fla., prepares to kiss the Blarney Stone.

featured organized sightseeing tours, free time for personal explorations and liberal amounts of Irish hospitality.

"Several of the tours were optional," said Teresa Lowry, Gravelly's manager of advertising and public relations, "but Marianne, the Irish woman who was our guide, knew so much about the history and made everything so interesting that the whole group went every time."

"I have to say I really enjoyed this trip," said Lawrence Wetzel of Freeport Lawn Garden Equipment Company in Freeport, Pa. "The old stone churches and the Irish pubs were interesting, but it was the people who really made it. We had a fun group." Wetzel learned on the trip that he had been named Gravelly's Dealer of the Year for the second year in a row.

The group arrived back in New York Oct.

landscape should be maintained without lawngrasses because they have little chance of survival. Instead, ground covers such as Periwinkle, Pachysandra, Ajuga, Epimedium, English ivy, Ophiopogon or Liriope should be used. Where shade is too dense for ground covers, ornamental stone, marble chips, slate, flagstone, bricks or various mulches may be installed.

When lawngrass is desired, cut wood during the winter so that there will be enough sunlight reaching the ground to grow grasses in the spring. This may mean the complete removal of some trees or the selective removal of some tree limbs. Make these decisions carefully as trees add a lot of value to the landscape. Consult with a local arborist to make certain the job is done safely and with respect for both the customer's property and his neighbor's. ■

EXTRA!

VOL. CXXXVI

The Daily Sun

GREENSBORO, WEDNESDAY, NOVEMBER 1, 1987

NEW INSECTICIDE STOPS GRUBS IN 3 DAYS!

**"Lawn care experts
get 90%
control in 3 days!"**

by THOMAS BAGOT

Recent label approval by the Environmental Protection Agency marks the introduction of the ultimate product for grub control in home lawns.

New Triumph offers lawn care professionals many advantages in grub control.

- Because it's fast acting it controls grubs in 2 to 3 days.
- Triumph's superior chemistry provides/delivers over 90 percent grub control quickly and maintains that performance over 10 weeks.

- New Triumph also controls surface insects and mole crickets and is labeled exclusively for use by lawn care professionals.
- And new Triumph's liquid formulation and low rates mean

The fast acting control of Triumph stops root damage from grubs in a hurry so your homeowner customers can relax and feel confident that the grub problem is gone.

One application of Triumph per year in the fall is all you need to control grubs consistently and effectively. Years of testing shows that Triumph continues to control grubs for over two months. This should prevent retreatment until the following season.

Triumph goes to work faster than other products you've used. Within two days of application, you see Triumph control grubs and other insects. That means you stop grub damage quickly, reducing complaints and keeping your



INTR THE BEST NEWS TO H



New Triumph[®], from CIBA-GEIGY, provides, on average, over 90% grub control in just two to three days. And there are over 10 years of major university and CIBA-GEIGY trials to prove it.

Triumph offers broad spectrum control of surface feeders like chinch bugs, sod webworms, army worms, chionodes, plus sub-surface mole crickets and annual bluegrass weevils.

Application in late summer to fall can prevent turf insect damage by eliminating grubs when they're small, before they can damage roots. And if grub damage appears in spring and summer, application of Triumph quickly stops further damage.

When your customers call you with a grub problem, they want results fast. And that's what they get with Triumph. And, because Triumph is restricted to lawn care applicators, your customers can only get it from you.

CIBA-GEIGY



PRODUCING TRIUMPH. HIT LAWNS IN YEARS.

PLCAA UPDATE

The Immigration Reform and Control Act of 1986 becomes fully effective on June 1, 1988 — with specific instructions for employer compliance and penalties.

Who needs to comply and how can this documentation be done? A new monograph published through the Professional Lawn Care Credit Association of America, "Immigration Reform and Control Act," reviews what PLCAA members need to do to comply.

The monograph, edited by Richard Lehr, general counsel to the PLCAA, details requirements of the Act, answers questions regarding employee verification, provides documentation examples and reminds against unlawful discrimination.

All employers, regardless of size, are required to fulfill the employment identity and eligibility requirements. Only employers with four or more employees are covered by the Act's anti-discrimination requirements.

While employers are now required to comply with key provisions of the Act, they will not be penalized for a first violation until

PLCAA 88 New Orleans SUPERDOME NOVEMBER 7-10, 1988

after June 1. Employers will, however, be penalized for a second violation occurring between now and June 1.

The key ingredient of the Act for all employers, regardless of size, is that employers verify the employment eligibility of applicants.

There are, however, some who are not required to complete a form including: employees hired prior to Nov. 7, 1986; employees hired after Nov. 7, 1986 who were no longer employed prior to June 1, 1987; persons who are employed for domestic work at home; persons who are employed through a company that provides employees, such as employee leasing or temporary employment services; and individuals who are employed as independent contractors.

To learn more, contact the PLCAA for a copy of the monograph. It's \$20 for PLCAA members and \$40 for non PLCAA members.

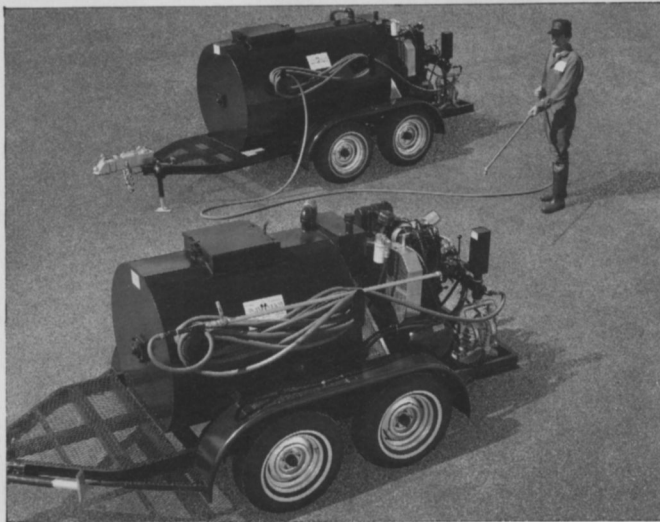
Plans for the 9th PLCAA Conference and Show are under way. The conference and show committee recently met in New Orleans, site of the show, to tour the Superdome and discuss seminar programs and exhibitor demonstration space.

PLCAA Executive Vice President James Brooks said the three-track educational program, covering business, landscape management and agronomy, will be repeated. It met with success in its first try last year.

Because of the size of the Superdome, Brooks said, new events may be planned for the November convention. "We're very excited. We have the space to do it so we're ready to try lots of new things. We're moving pretty quickly."

A record number of exhibitors were featured at last year's show with 163 exhibitor booths sold. Based on the size of the Superdome, that record could be shattered in 1988.

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And Team does all this without hurting your turf, including sensitive bentgrass.

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SPECIAL CHEMICAL PRODUCTS SECTION

Every February we bring you this special chemical products section designed to alert you to some of the latest and well-known chemical turf care products.

Buying chemicals year in and year out can be a tricky business. With new products being introduced every year, and new problems to be treated, the chemical buying decision can be one of the most important and vital decisions a company owner can make.

Nevertheless, it's a decision that is made every year by hundreds of chemical buyers — a number of which are loyal to one company.

"In my opinion, the players, the supplier players, are settling out. There's not too much changing going on," said John Pope, marketing director at CoRoN. "We're all competitors and there will be an occasional product area you might lose some business and get something else back later, but your loyalties are pretty much in place here in the East."

Riverdale Chemical Company President Jim Champion agrees there are loyalties in the market, but thinks loyalty goes both ways.

"Most customers are fairly loyal. We've had a very good following from our customers," Champion said. "We also have better loyalty to our customers. I think we have a philosophy of treating our customers right, giving them excellent service and quality products."

Joe Prochaska, product manager at Ciba-Geigy, said customers tend to be loyal if they have good experiences, but will not compromise their business sense. "A good business person will always look for the best price."

All in all, manufacturers are cautiously optimistic about the new year.

"Sales for the upcoming season are well above last year because of excellent product growth and continued market growth," said David Ball of Elanco Products.

"We're looking forward to a great year. We have a very aggressive approach. We're not going to sit back and wait for things to happen," said Bill Vogel of Spring Valley.

In the following categories you will find a listing of some of the latest products in

the market. Others have been around a little longer, but have continued to have an impact on the market.

Because many companies have more than one product on the market, all of its products are discussed in its most prevalent category to eliminate repetition.

HERBICIDES

TAG Herbicide T/E, a non-residual contact herbicide, will be introduced early this year by **Chevron Chemical Company**. The T/E stands for trimming and edging.

TAG will have broad application for use in many specialty markets for control of seedling grasses and broadleaf weeds. It will be labeled for use in landscaping, parks, highways, cemeteries, golf courses and greenhouses. TAG will be available in one- and two-quart sizes.

Chevron is also introducing a new one-quart size plastic bottle of Ortho X-77 Spreader™, a non-ionic surfactant for use with insecticides, fungicides and herbicides. X-77 has been used for more than 20 years and has a proven track record for improving the activity of contact pesticides.

Prunit tree growth regulator is expected to receive an experimental use permit in 1988. A federal label is anticipated by 1989. Prunit is a new plant growth retardant which reduces the need for frequent pruning by restricting the vegetative growth of trees.

Riverdale Chemical Company has received EPA registration of Weedestroy® Tri-Ester™ II. A three-way postemergent selective broadleaf herbicide, Tri-Ester II contains the esters of MCPA, Mecoprop and Dichlorprop.

It can be applied to roadsides, rights-of-way, drainage ditchbanks and sod farms as well as golf courses, parks, lawns and ornamental turf. The formulation kills dandelions, chickweed, plantain, oxalis, spurge and many other broadleaf weeds.

Tri-Ester II was developed as an alternative weedkiller which does not contain 2,4-D.

It can be used on cool and some warm climate grasses. In addition, the ester formulation gives quicker control than amines in early spring and late fall when cooler temperatures prevail.

Riverdale has also received EPA registration of Triamine™ Granular Weed Killer. This product is a three-way postemergent selective broadleaf herbicide which contains the amines of 2,4-D, Mecoprop and Dichlorprop. It controls dandelions, chickweed, plantain, oxalis, spurge as well as many other broadleaf weeds.

Triamine can be used on both cool and some warm climate grasses.

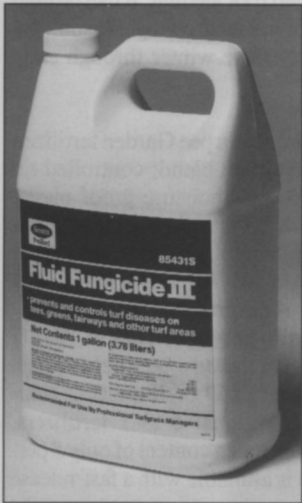
This year, **Elanco Products** will offer a new long-lasting granular weed control product containing Surflan for ornamentals. XL™ is now registered for use on container grown ornamentals, landscape ornamentals and ground cover.

XL is widely used as a preemergence herbicide in warm season turf for control of most annual grasses and certain broadleaf weeds. When used in ornamentals, XL controls a broad spectrum of weeds for up to eight months, depending on the rate.

XL is surface applied over established plantings, requiring only rainfall or irrigation to move the herbicide into the soil. XL is economical and is available in a 2G formulation in 50-pound bags.

Elanco also anticipates receiving EPA registration for Gallery™ and Snapshot™. The benefits of Gallery include preemergent control of broadleaf weeds resulting in a reduced need for postemergent application. Snapshot will be marketed for the broad spectrum control of grassy and broadleaf weeds. The company expects Gallery to be registered in the fall and Snapshot to be registered in early 1989.

Acclaim® 1 EC herbicide is available from **Hoecsht Roussel** for selective postemergence annual and perennial grass control in turfgrass including sod farms, commer-



Scott's Fluid Fungicide.

cial and residential turf and rights-of-way. The herbicide can be applied to cultivars of a variety of cool-season turfgrass species grown throughout the U.S. including perennial ryegrass, fine fescue, tall fescue and annual bluegrass. Acclaim does not have any broadleaf activity.

Acclaim only controls grasses which are emerged at the time of spraying, according to company officials. Young actively growing grassy weeds are more easily controlled than the larger grassy weeds.

Poast® grass herbicide from **BASF Corporation** is designed to eliminate almost all annual and perennial grasses in ornamentals, nursery crops, trees, rights-of-way and centipede grass lawns and turf.

Poast enters the plant's system — right down to the roots and rhizomes. Poast works in the plant, not in the soil. It won't leach out and threaten nearby plants or lawns that haven't been sprayed. Poast should be applied to actively growing grasses before tillering and/or seedhead formation.

Dow Chemical Company's Turflon™ D ester pre-mixed herbicide represents a combination of triclopyr and 2,4-D in a low-volatile ester base. Turflon D controls the normal spectrum of weeds, but also stops hard to control species like ground ivy, spurge, wild violet and oxalis.

Pre-mixed Turflon II herbicide combines the advantages of triclopyr, with 2,4-D in a non-volatile activated amine base. The herbicide is formulated for easy mixing in large quantities for broadcast applications. It mixes readily with popular fertilizers and insecticides for multi-purpose spraying.



Three offerings from PBI Gordon's.



Ciba-Geigy's Triumph.



A line of products available from Burpee.

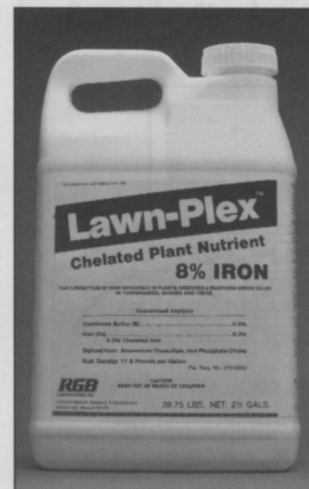
Three turf chemicals are being offered this year from **Monsanto Company**. Rodeo® aquatic herbicide, Limit® turf regulator and Roundup® herbicide provide control in and around aquatic sites, cool-season turfgrasses and broad spectrum control respectively. Rodeo is labeled for use in all bodies of fresh water and all types of aquatic sites. Limit is designed to suppress the growth of labeled cool-season turfgrasses for up to six weeks. The product not only cuts mowing and trimming, but also reduces the amount of clippings and the need for clipping disposal.

Roundup provides broad spectrum control for annuals, perennials, grasses, broadleaf weeds and brush species.

FUNGICIDES

LESCO Benomyl DG, a turfgrass systemic fungicide from **LESCO Inc.**, is now being offered in a new water-dispersible granular formulation for added convenience.

In the new dispersible granular formulation, **LESCO** Benomyl DG provides effective control of dollar spot, brown patch, fusarium blight and stripe smut.

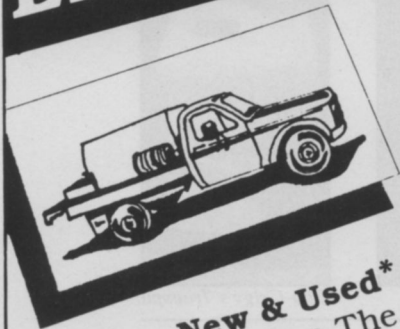


RGB Laboratories' Lawn-Plex.

Chipco 26019 fungicide from **Rhone-Poulenc Ag Company** now comes in a convenient flowable formulation as well as wettable powder.

According to Rhone-Poulenc, Chipco controls most major lawn diseases before they get started, including Helminthosporium.

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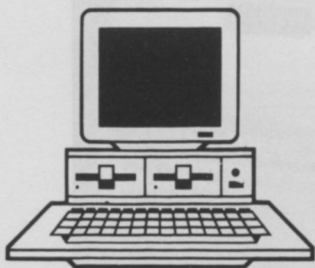
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rium Leaf spot and melting out, Fusarium blight, brown patch, dollar spot and red thread. Chipco is low in toxicity.

The ProTurf division of **O.M. Scott & Sons** recently introduced Fluid Fungicide III to broaden its line of fluid fungicides and to increase brown patch control in those areas where it is a serious problem.

ProTurf® Fluid Fungicide III prevents and controls anthracnose (on *Poa annua*), leaf spot, brown patch and a variety of other diseases.

It can be used with fertilizers, seed and other control products, like Fluid Fungicide I. It provides a combination of a systemically active fungicide and a contact fungicide that work together to provide good broad spectrum disease control.

Bayleton® 25 turf and ornamental fungicide from **Mobay Corporation** is designed to fit into a well-planned fungal disease control program. It delivers preventive control of dollar spot, anthracnose and other major turf diseases. The systemic action of Bayleton is said to give longer lasting residual — up to 30 days. Bayleton is absorbed through both leaves and the roots, and it works from the inside of the plant to protect from within, so control doesn't wash away with the first rain.

The granulated formulation of Bayleton is available in 2¾ pound containers.

Sencor® 75 turf herbicide has established itself for control of goosegrass and certain broadleaf weeds without damaging established bermudagrass turf. Sencor can be applied in either a pre or postemergent application with no need for special equipment. The herbicide should be applied preemergent when weeds are present and actively growing in dormant bermudagrass turf for controlling chickweed, henbit and many other broadleaf weeds. Sencor should be applied postemergent when turf is vigorously growing and not under stress conditions.

Metasystox-R 2® (MSR 2) ornamental insecticide is now labeled for insect control on shrubs, in addition to shade and nursery trees. MSR 2, by the soil injection method of application, provides control for aphids, European elm scale, elm leaf beetles, mites and leaf miners.

FERTILIZERS

Lebanon Total Turf Care is now offering a new deep root tree and shrub fertilizer for lawn care and professional arborist use.

Lebanon Nu-Tech Deep Root Tree and Shrub Fertilizer is a 30-10-7 formulation with 15 units Melamine plus secondary micro-nutrients. Its special combination of 50 percent slowly available water soluble nitrogen, from Melamine, and 50 percent readily available water soluble nitrogen provides a staged nitrogen release which is ideally suited to the needs of landscape trees and

shrubs.

Available in 40-pound bags, Lebanon Nu-Tech Deep Root Tree and Shrub Fertilizer should be applied through a soil injection system for deep root feeding. It can be used anytime during the growing season, but preferably from late winter through early summer.

The reformulated Burpee Garden fertilizer, with its rich nutrient blend, controlled-release formula and moisture-proof plastic container, will be introduced into the nation's garden centers, nurseries and other retail outlets by **W. Atlee Burpee Co.** in time for the 1988 growing season.

Burpee fertilizer will be sold in 18-11-12 and 17-23-6 formulations. Burpee has a high nitrogen content of 17 or 18 percent compared with traditional 5-10-5 fertilizers, which have a nitrogen content of only 5 percent. Burpee is available with a fast-release or slow-release nitrogen.

The improved Burpee fertilizer is packaged in a moisture-proof plastic container with a convenient measuring cup. The fertilizer is available in two-pound and 10-pound sizes in varieties specially formulated for vegetables, flowers, shrubs, trees and ground cover.

CoRoN 28-0-0 concentrated formula from **CoRoN Corporation** is a controlled release nitrogen fertilizer with low burn potential that promotes even turf growth over a longer period of time. It is compatible with other available turf protection products, can be mixed with other fertilizer formulations and is storage stable.

A variety of products for tree, shrub and turf fertilization are offered by the **Doggett Corporation**. Nutri-Turf 35-5-6, a blend of slow release Nitroform and quick release urea, nitrate and ammoniacal nitrogen gives turf a fast green start but enough staying action to give a good controlled release over four to six months.

XL-Injecto Feed 32-7-7 is an all-around analysis for general use in year-long liquid, slow release tree and shrub fertilization. The product is low in salt and chloride free.

XL-Spray-Fol 30-10-10 is a product designed for the tree care industry that is 100 percent soluble, having no slow release. The product is used in the spring and summer in conjunction with insecticide spray applications.

A granular fertilizer with pendimethalin pre-emergents is the latest product offering from **UAP**. This product offers preemergent control of crabgrass, spurge and oxalis. UAP has been developing the product for a number of years and is one of the few companies in the country offering it.

N-Sure 28 percent nitrogen solution from **Arcadian** is a slow-release, non-burning nit-

rogen source that contains the new technology of triazone nitrogen. With a high concentration of triazone and low urea, there's less chance of burn. N-Sure is suited for low-volume applications, requiring less water and less handling. N-Sure is compatible with most commonly used herbicides, insecticides and fungicides.

Liqui-Land Corporation is a distributor of N-Sure.

Spring Valley is a formulator of granular fertilizer with TEAM™, sprayable fertilizer with TEAM™, broadleaf herbicides and rootfeeders.

The company expects to receive EPA registration for Spring Valley Crabgrass Spray 10 percent with TEAM by the fall. The new sprayable TEAM product is a water dissolving granule said to be virtually dust free and contains a new ratio of active ingredients, according to Bill Vogel.

The product will be strictly for lawn care applicators for use on turf. If the product is given its registration, it will be available for use in the 1989 season.

NG 1515 from **Nice 'N Green** is a clear UF nitrogen solution used extensively by the industry to protect against burn during summer stress periods. It contains 15 units of nitrogen from urea and 15 units of nitrogen



W.A. Cleary's 3336WP

from methylol/methylene ureas.

The short chain urea-formaldehyde polymers insure against burn, and all release within one growing season. The solution is a clear liquid, easily stored in poly, steel or stainless steel storage containers without agitation.

NG 612 is a light, milky white fertilizer suspension used by LCOs with facilities to handle suspension fertilizer products. It contains four to six units of nitrogen from urea

and 12-14 units of nitrogen from methylene urea. Like NG1515, NG 612 also protects against burn and releases within one growing season.

Nitro-26 CRN 26-0-0 liquid fertilizer is a formulation of **Growth Products** providing a slow release nitrogen source for both warm and cool-season grasses.

Nitro-26 CRN was developed specifically for turf application where a steady, even release of nitrogen was needed for an eight to 12-week period.

Nitro-26 solution contains predominantly long chain methylene dirueas, trimethylene tetraurea, WIN and small quantities of free urea. The product is manufactured in 12 locations throughout the U.S. and Canada and distributed through a network of distributors/blenders.

W.A. Cleary Chemical Corp. offers a variety of products in the areas of fungicides, herbicides, insecticides, fertilizers and other specialty products. The company manufactures five liquid fertilizer products including FLUF, a nonburning, slow release, flowable ureaform which is ideal for summer temperature fertilization of lawns and fine turf.

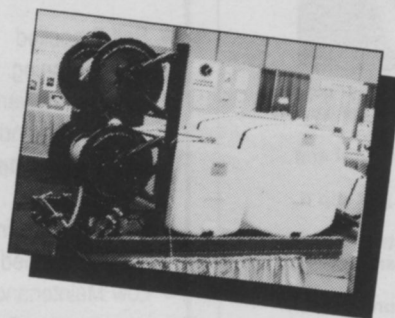
FLUF has tank mix compatibility with most pesticides. It contains 1.7 pounds N per gallon and provides up to an average

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of 90 days sustained release.

The company also continues to offer 3336WP, a turf and ornamental fungicide, in water soluble bags. The finely ground wettable powder contains 50 percent by weight of thiophanate for prevention and control of Dollar Spot, Copper Spot, Brown Patch, Red Thread, Fusarium roseum, Helminthosporium, Stripe Smut and many other diseases.

The water soluble bags are easy to use and operators risk no exposure to chemical fumes or residue. Because the bags dissolve completely when submerged in water, there are no clogged screens or nozzles to worry about and no containers to dispose.

INSECTICIDES

Triumph[®] insecticide and Banner[®] fungicide, Ciba-Geigy products recently approved by the Environmental Protection Agency, offer turf professionals more choices in controlling damaging insects and diseases.

Triumph insecticide is exclusively for professional lawn care operators on residential lawns to control grubs and other turf insects. Research indicates 90 percent control of grubs in the first seven days after application. The product remains active in the soil for more than eight weeks.

Banner offers control of major turf dis-

eases such as dollar spot and brown patch. The product can be used on cool-season grasses. In addition to dollar spot and brown patch, it also controls anthracnose rust, red thread, powdery mildew and stripe smut.

New Subdue[®] granular fungicide will be available for turf professionals for control of Pythium sometime during the first quarter of 1988. Previously only a liquid formulation was available. This label also will be applicable for ornamentals.

A similar product not yet introduced is Pace[™], a metalaxyl/mancozeb-based product for reducing the likelihood of resistance development in Pythium. The company expects EPA approval in early summer. Once labeled, the recommendation will call for it to be rotated with a non-metalaxyl product. The product will be sold in a water-soluble bag.

A new liquid formulation of Pennant[®], currently available only as a granular material, may be ready by late June 1988. The product currently is labeled for nursery growers and ornamental operators fighting weeds and grasses in container-, field- and liner-grown ornamentals.

The Andersons, the Professional's Partner[™], offers a new product in its line of professional products for golf course and turf care. Tee Time[™] Insecticide with 5

percent Dylox[®] is a granular insecticide designed for commercial applicators. Used at the recommended rates, the product will control armyworms, cutworms, sod webworms and the white grub complex.

The Andersons is a formulator of a wide range of custom mix professional lawn care products including fertilizers, fertilizers with herbicides, fertilizers with insecticides, insecticides and professional liquids/sprays.

Acecap[®] 97 is Creative Sales' trade name for systemic implants containing 97 percent Acephate (Orthene[®]). It is a patented systemic implant designed to deliver maximum insecticide control to ornamental trees.

Recommended for use in ornamental trees only, Acecaps control a wide range of chewing, sucking and boring insects. Acecaps will last from 12 weeks (in heavy insect infestations); up to 18 weeks in deciduous trees, according to the company.

Since Acecaps systemic activity works from the inside out, the elements of normal chemical degradation have minimal effect on the residual activity.

MISCELLANEOUS

A PGR program for highly visible ornamental turf is being introduced by PBI-Gordon Corporation, marketers of 5

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Embark plant growth regulator. The company's program is based on tank-mixing Ferromex AC liquid iron and a Trimec herbicide with the PGR for use on professionally managed, low-traffic, irrigated turf.

According to the company, a reduced rate of Embark (1pt./A) combined with a high rate of amine-compatible liquid iron (2.75 gal./A), will provide four to six weeks of growth regulation in Kentucky bluegrass and tall fescue with no discoloration of the grass.

Embark PGR and Ferromex AC (amine-compatible iron) are said to be ideal tank-mix companions. Ferromex's patented iron/urea molecular bond reportedly results in dramatic turf green-up within 24 to 48 hours, whereas Embark does not begin its work until about 48 hours after application. When combined together, dark green turf color is firmly and irreversibly fixed before any discoloration can occur.

Aquashade, an aquatic plant growth control from **Aquashade Inc.**, filters wavelengths of sunlight to control unwanted aquatic weeds and algae in natural and man-made contained lakes and ponds, including ornamental, recreational fish rearing and fish farming bodies of water with little or no outflow.

Aquashade treated water is non-toxic to fish and wildlife, and it may be used for irrigation. Treated waters may be used for swimming after Aquashade is dispersed. The product can be used in all seasons.

Ruffin-Tuff Turf Iron Special and Turf Iron are designed to promote healthy, dark green plants without excess growth. These **Ruffin Inc.** products give grasses the ability to stand up to heavy traffic and maintain vigor and color.

Ruffin-Tuff Turf Iron Special and Turf Iron are blends of micronutrients designed for foliar or soil application. They can be combined with commonly used fungicides, insecticides, herbicides and many forms of fertilizers. Both are amine compatible.

One pint of MASK-IT™ in 1,000 gallons of spray mix (1.6 fluid ounces/100) converts a pesticide odor into a pleasant fragrance. That's the idea behind **Rockland Chemical Co.**'s new odor masking agent. The fragrance may be added to pesticide tank mixes to mask the odor of active ingredients and solvents.

The company also offers a large variety of granular fertilizers, herbicides, fungicides, insecticides and other specialty products.

Lawn-Plex®, Agri-Plex® FE and Agri-Plex® For-X are three chelated plant nutrients available from **RGB Laboratories Inc.** The chelated iron increases the availability of the iron for plant uptake.

The chelation technology used in these products relies on phosphate/citrate, a nat-

ural organic chelating agent, which also provides a strong buffering capacity to maintain the pH of the spray tank formulation between pH 6 and 7.

For most applications, either Agri-Plex or Lawn Plex may be used. Lawn-Plex, however, represents the most economical iron product for lawns. Agri-Plex For-X is recommended for turf grown in high sand content soils and on shrubs and ornamentals.

Lawn Restore® and Turf Restore®, all-natural turf problem-solvers, are available from **Ringer Corporation**.

Lawn Restore is said to eliminate conditions that promote common patch diseases,

allowing older patches to fill in and preventing the chance of new problems from occurring. The product contains soil microorganisms and enzymes along with special organic materials. Through decomposition, nutrients are fed naturally to the soil and then to the plant, helping to recreate the natural cycle of growth.

Its commercial counterpart, Turf Restore, can be used by independent lawn care professionals, by resort and residential turf managers and for use on golf courses.

Turf Restore is designed to eliminate the conditions in which patch diseases thrive, reduces thatch buildup and feeds turf grass with natural slow-release fertilizers.

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Blazon® blue spray pattern indicator is the only non-staining and inert spray pattern indicator in the world, according to **Milliken Chemical Co.** Blazon should be added to the mix tank after all other chemicals. Depending upon turf conditions, the recommended application rate will be from .25 to .75 ounces per 1,000 square feet.

Blazon is considered a non-toxic, non-staining and environmentally safe substance. Its use is intended for mixture with herbicides and other pesticides.

Agriform™ 20-10-5 planting tablets from **Sierra Chemical Co.** eliminate the need for measuring small quantities of dry materials, and provide a safe, scientifically complete plant food which lasts up to two years. Planting tablets fill the continuing need of all plants for a full range of major nutrients.

Roots completely surround Agriform planting tablets to pick up the nutrients that are gradually released by the action of soil bacteria.

The tablets don't dissolve, consequently tablets may retain their shape even after a year or two in the soil, while releasing nutrients at the desired rate.

New information on the use of Nitroform® Blue Chip® 38-0-0 nitrogen to turf indicates the product accelerates root develop-

ment and turf establishment when used in seedbeds or during sod replacement.

Nor-Am Chemical Co. reports that in direct contact with bare soil, Nitroform provides a ready source of food and energy for soil bacteria. Additional research shows that thatch formation is minimized when using Nitroform, in part due to the more active bacteria population.

For routine core cultivation where the fertility level has been adequate, NOR-AM recommends three pounds of Blue Chipo Nitroform per 1,000 square feet immediately following coring.

Since 71 percent of the nitrogen in Nitroform is water-insoluble, the product is non-burning and resists leaching even in heavy rainfall on sandy soils.

KLM Bio Systems Inc. is introducing a new biological turf management product, Bio Control, designed to reduce thatch in turf. Bio Control is a scientifically formulated concentrate of microbial extracts and biocatalysts.

The product gives an added supply of microorganisms and enzymes to the soil that multiply at a very high rate. The organisms in the thatch accelerate the decomposition process.

Bio Control is an organic product. It may be tank mixed with present plant foods, but

the company recommends that it not be used with either a fungicide or an insecticide.

Aqua-Gro® 'L' liquid from **Aquatrols Corporation** is a blended ester and ether-alcohol non-ionic organic wetting agent, 100 percent active ingredient, low foaming and non-toxic to turf and microorganisms.

Aqua-Gro is a broad spectrum wetting agent and is blended for top performance in all soils and soil mixes. Aqua-Gro can be used on football, baseball, soccer fields, grass tennis courts, croquet courts and other fields.

Aqua-Gro prevents turf losses under wet and dry conditions. Dry or compacted soil takes water rapidly when treated with quick filtration and less run off. Excess water cannot cling to treated soils and it drains quickly. Water wets and drains uniformly through an Aqua-Gro treated turf.

Lime-Rite is an earth colored, fast dissolving, pelletized, Dolomitic Limestone from **Georgia Marble Co.** It is dustless and disappears when spread. Lime-rite is non-burning and may be used in any type spreader. Lime Rite is mined and processed by Georgia Marble — a leading supplier of agricultural limestone. — *Cindy Code*

The author is Editor of ALA magazine

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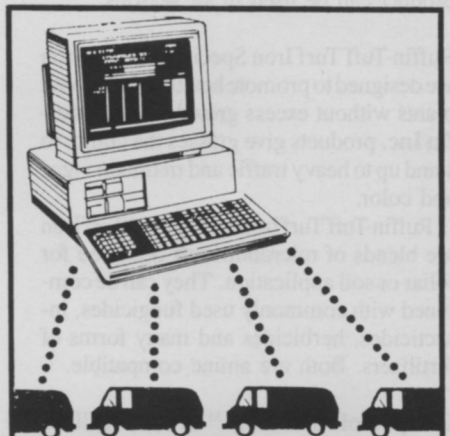
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IN-HOUSE SAFETY INSPECTIONS

Safety inspections should be planned and performed periodically by management staff to expose and document hazards in the work place and initiate control measures.

Safety in and around our facilities is being overlooked, allowing potential accidents to exist which could ultimately affect company profitability. It is so easy today to get caught up in "more important" issues pertaining to production, sales and environmental controversies rather than police our own backyard. How can one honestly say they are concerned about the safety and welfare of others while not addressing safety issues closer to home?

In-house safety inspections should be planned and performed periodically by management staff to expose and document hazards in the work place and initiate control measures. These control measures usually take the form of repairs, task restructuring or safety equipment installation. The cost of the measures vary dramatically depending on the amount of work necessary and/or the cost of the parts. However, when weighed against a fine or Workman's Compensation or Death Benefits costs, the control measure costs are preferable.

Management must perform the inspection function because it can formally communicate concern to the employees, appropriate the necessary capital to correct the

Federal and state legislation now mandate inspections, management and communication of information about hazardous materials in the work place. Legislation deals directly with the employer's responsibility with hazardous materials.

problem, and most importantly, management has the ultimate responsibility for employee welfare. This is not to say that labor has no part in the inspection; it merely means that the responsibility for the inspection process falls directly on management. Labor may be called upon for input, verification of a problem, and sometimes correction recommendations.

Safety inspections involve the investigation of many diverse factors within a facility. Each factor should be examined in its entirety as it may involve many individual items.

The following is a discussion of specific areas which

should be evaluated and discussed with employees.

Illumination, dust, vapor and noise fall into the category of environmental factors.

Make sure employees are able to see what they are doing, whether it's reading a measuring cup or parking a truck. Be aware of poorly lighted areas masking skids or other supply storage. Check, particularly during loading practices, that there is no excessive dust or vapor buildup. The same is true in product storage areas. Assess the noise abatement qualities of the walls dividing the general office and the warehouse. There is nothing worse than having a telephone conversation with an idling truck nearby.

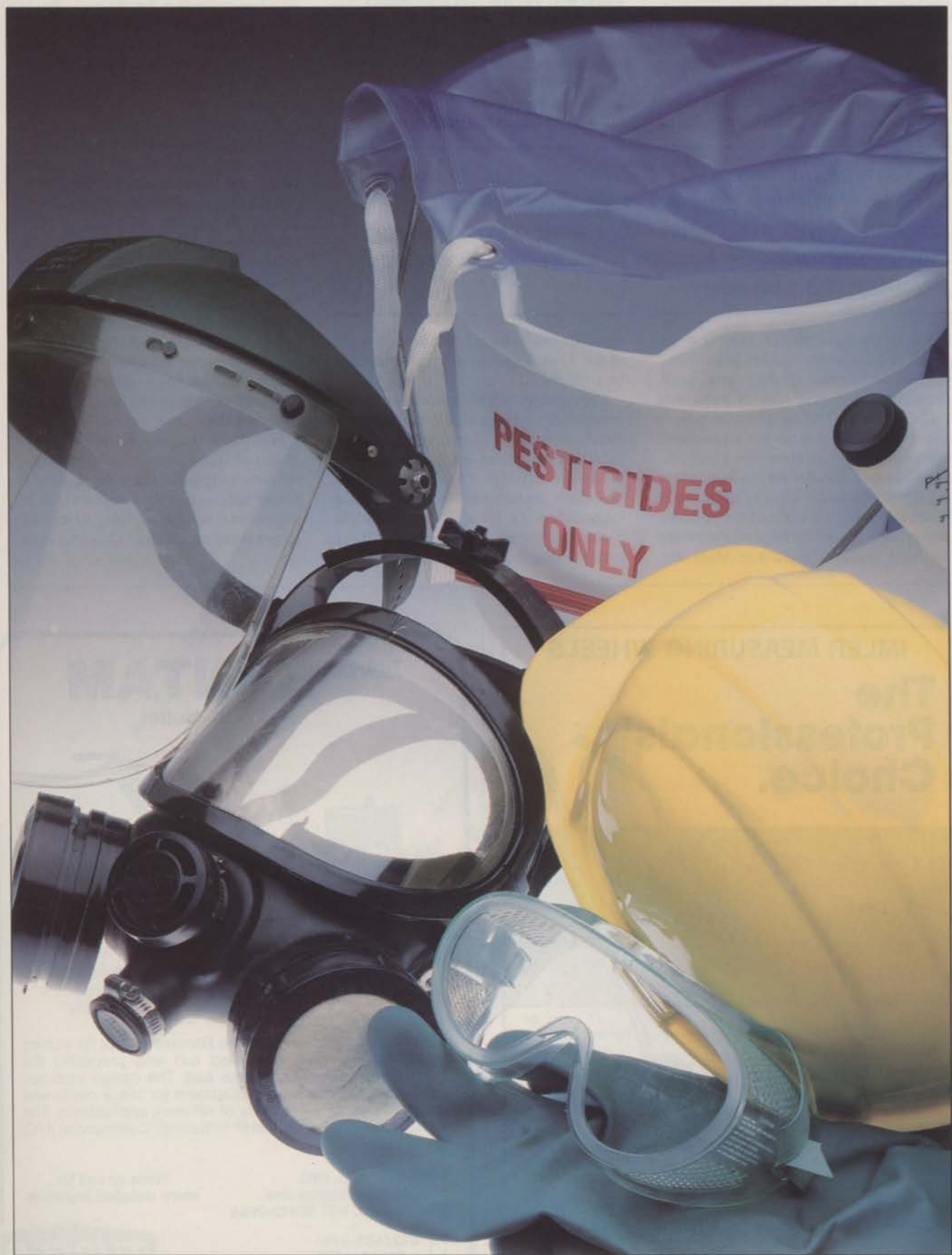
HAZARDOUS MATERIALS. Federal and state legislation now mandate inspections, management and communication of information about hazardous materials in the work place. Right-to-know legislation deals directly with the employer's responsibility surrounding hazardous material communication.

Pesticides are not the only concern as any flammable/explosive material (gasoline, kerosene, propane, acetylene) and acids or other caustics (hydrochloric, hydrofluoric acids, certain cleaners, degreasers) must be examined. All of these products must be appropriately marked and stored away from open flame or excessive heat, preferably in a secured area. Guidelines are published in right-to-know legislation publications.

Equipment such as compressors, cranes and jacks should be addressed in the maintenance equipment category. Inspect this equipment for proper safety features such as pressure release valves, gauges and guards. Make sure this equipment is properly lubricated if necessary and operational. Additionally, make sure the equipment has a capacity rating matched to the function to be performed.

POWER SOURCE EQUIPMENT. This would include all gasoline powered engines, like those used for pumping to electric motors, and such as those controlling hose reels. Inspect this equipment to make sure it is grounded and properly secured to its base. Look for fuel leaks, frayed wires and other potential hazards. Check power takeoff shaft for misalignment or improper lubrication problems. Be sure also to disconnect the power to the engine before inspection begins.

Electrical equipment is a large category affecting all areas of the facility. This inspection entails a detailed look at all



Protective equipment is a critical area to review in yearly in-house safety inspections.

fuses, breakers, switches, outlet boxes, exposed wiring, extension cords and light fixtures. Document and initiate repair of any inadequacies such as blown fuses, breakers, frayed wiring, no grounds, broken outlets or fixtures.

Discourage the practice of overloading outlets through the use of multiple plug adaptors. Eliminate all extension cords other than those used on a temporary basis.

Discourage the practice of overloading outlets through the use of multiple plug adaptors. Eliminate all extension cords other than those used on a temporary basis. Many tripping hazards can also be eliminated by following this procedure.

Many tripping hazards can also be eliminated by following this procedure.

There is not a business in existence that does not have some type of hand tool available for use. This can be anything from a screwdriver to small power equipment. Before using any tool make sure it is operational. Inspect handles for cracks or other faults and check the security of hammer heads and other broken or bent portions of hand tools. Carefully inspect power tools for shorts, sparks or frayed wire. Make sure

also that all of these tools have proper grounding — three-pronged plug.

PERSONAL PROTECTIVE EQUIPMENT. It is most important to make sure all the necessary equipment is available and in acceptable condition. It is management's responsibility to make the equipment available. It is the individual's responsibility to use it. All waterproof gear (boots, gloves,

aprons) must be free of rips, holes or leaks of any kind. These must remain intact or be replaced.

Inspect respirators to make sure the proper cartridge is being used as per manufacturer's directions. The manufacturer also publishes guidelines for number of hours of use per cartridge. Check to make sure guidelines are being followed and replace when necessary. Fit testing must also be performed when using a respirator. Check with the distributor for assistance.

Inspect face shields and goggles for cleanliness and/or wear. Repair or replace if necessary. This equipment must provide absolute protection for the eyes. Product labels and material safety data sheets provide information concerning the equipment necessary when handling and mixing the concentrates. Make sure the equipment matches the job.

Personal services and first aid stations are just as important and should not be overlooked. Personal services refers to restrooms, locker rooms, lunch room and the like. The most important consideration during inspection of these areas is cleanliness. Also make sure adequate refuse receptacles and cleanup supplies are available. Slip resistant surfaces should also be noted.

First aid stations can refer to anything from a first aid kit to a fully staffed dispensary. Inspect for adequate supplies and cleanliness. Employee welfare cannot better be served than maintaining above standard conditions in these two areas.

Within the category of fire equipment, many individual items must be addressed. All fire extinguishers must be checked for proper use classification and services. Extinguishers must be serviced to maintain proper operating pressure. Consider a train-

(continued on page 34)

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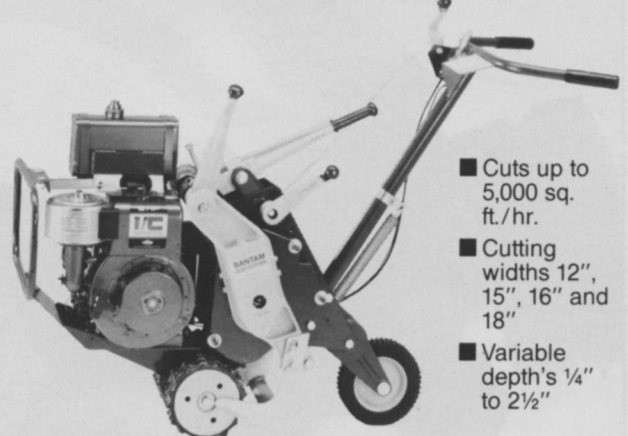
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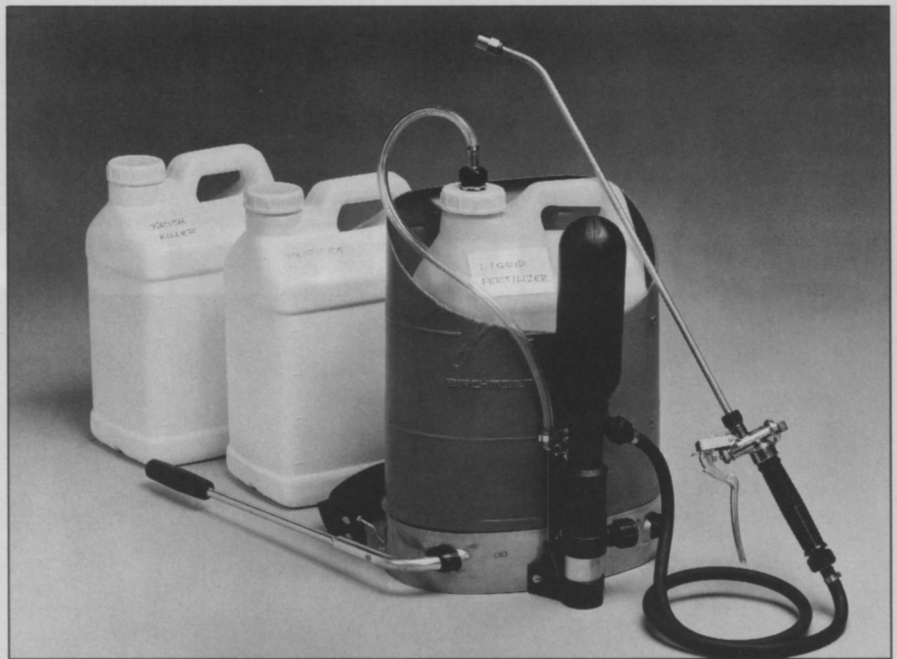
SAFETY

(continued from page 32)

ing session on the handling and use of the fire extinguishers to insure proper response in an emergency situation. All facilities having fire alarm and/or automatic sprinkling systems must maintain and document an inspection and service log. This procedure will guarantee performance when needed. Finally, institute an evacuation plan and rehearse it. Lives may depend upon the implementation of this plan.

WALKWAYS AND ROADWAYS. All of these surfaces must be maintained to prevent injury due to trips, slips and falls. Note for repair all cracks, holes and buckled sections of flooring. Make sure all carpeting is secured. All slippery surfaces must have some anti-skid surface incorporated in or applied to it. Inspect and repair holes in the driveway and parking areas to prevent costly suspension repairs to vehicles. Minor repairs can go a long way with accident prevention.

Most buildings have stairways of some type ranging from one step to several flights of steps. No matter what the size, inspections should be made regularly. Be sure there are no loose or missing stair treads and all treads have a non-skid surface.



Chemical containers should all be clearly marked before using.

Check the railings associated with the stairs for security. A railing should be a part of all stairways.

All facilities having a ladder or some elevated working surface, such as a platform, should be checked. It is most impor-

tant to inspect these for any deficiencies as a fall would be costly. Make sure all rungs are secure and there are no other loose or missing parts. If a problem is uncovered, take the equipment out of service or mark it effectively so it will not be used.

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All forklifts, pallets, jacks and cranes fall into the category of materials handling equipment. Inspect to make sure there are no leaks and loose or malfunctioning parts. Make sure the lifting capabilities of the equipment is matched to the particular job it's used for. Never overload the equipment.

Inspecting transportation equipment pertains to cars, trucks and other vehicles used throughout the day. A standard pre-trip inspection should be established and adhered to daily. This inspection should include the lights, tires, fluid levels and any other cosmetic or mechanical problem affecting the

proper use of the vehicle.

WARNING AND SIGNALING DEVICES. These devices surround us daily and their operation or lack of operation sometimes goes unnoticed. One such signaling device is the *EXIT* sign over the doors. Make sure it is illuminated at all times. Posters and other signs, such as *PESTICIDES*, *KEEP OUT*, and *NO SMOKING* should be kept clean and visible. A warning sign isn't a warning if you can't see it. There are other warning and signaling devices associated with vehicles, such as turn signals, backup lights

and sounders, etc. These should all be inspected daily before beginning the day's activities.

CONTAINERS, BARRELS, DRUMS. The storage of products inside a facility is extremely important. Many of the containers hold concentrated, flammable or volatile materials. All containers should be inspected for leaks while in use. The storage area itself should be inspected to guarantee security and spill containment. The storage area should be emptied into another like container and labeled properly. The ruptured container, as with

CHEMICAL STORING AND HANDLING TIPS FROM CIBA-GEIGY

- Store chemicals in a clean, dry and locked area.
- Keep away from open flame or sources of ignition.
- Wear gloves or other protective clothing as directed on the product label.
- Don't re-use empty containers for other purposes.
- Always wash hands after handling any chemicals and change clothes daily.

An important part of ensuring safe chemical use is the proper handling of rinse water, according to Don Paulson, senior industrial health specialist at Ciba-Geigy. Rinse water comes from two major sources — chemical containers and application sprayers.

Federal regulations require that all containers be triple-rinsed, or the equivalent. Paulson recommends using a pressure rinser over triple-rinsing because it's faster, easy to handle and makes the container useless.

Use the pressure rinser by placing the empty container in a vertical position so it will drain into the spray tank, then thrust the nozzle through the bottom of the container and rinse thoroughly. The rinse water from the empty container is then applied with the chemical in regular use, he said.

The other source of rinse water comes from the sprayer after the chemical has been applied. The sprayer should be thoroughly rinsed, then the rinse water applied over the same area where the chemical was initially intended. Label directions should always be followed so you stay within the recommended rates for turf.

If a daily spray is needed, the rinse water can be saved overnight and mixed with the chemical application the next day.

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other empty containers, should be triple-rinsed and disposed of according to local ordinances.

The keys to storage areas are cleanliness and organization. Separate like items into their own storage space — never combine unlike items or products. Keep everything possible off the floor, particularly if the containers are composed of paper or cardboard. Metal shelving is preferred due to the im-

windows, doors, stairways and pits. Inspect to make sure all windows and doors are operational. If a deficiency is found, attend to it immediately. A defect here could jeopardize the security of the entire facility. Make sure these openings are accessible and not blocked by stored materials. Access must be assured in case of a fire. When inspecting pits or tank entryways, make sure the grating or covering is secure and sufficient

overgrown vegetation causing a fire hazard, or harborage area for rodents. It could be excessive standing water or trash buildup in a corner of a lot. Make sure nothing is overlooked.

Further information concerning safety and health standards necessary for inspection can be found in various sections of the Occupational Safety and Health Administration's rules and regulations. Section 29CFR 1910 provides occupational safety and health standards. Section 29CFR 1926 provides standards for the construction industry. Both provide detailed information relating to the aforementioned inspection topics.

Safety inspections show concern for the welfare of others and provide better and safer working conditions for all. Better your own life as well as your employees by performing safety inspections. —*Dave Jones*

The author is director of training at Lawn Doctor Inc., Matawan, New Jersey.

Look over the entire structure of a building noting any deficiencies within the floors, walls, roof and fencing. Repair any holes, cracks or missing sections allowing entry in the facility. Early detection and repair can prevent higher expenditures later after a major problem develops.

permeability of the surface, allowing for better cleanup.

All storage facilities should be enclosed and capable of being secured. This is most important of outside storage areas. In or near these storage areas, have the proper materials available for maintaining and cleaning any spill should one occur. If a spill does occur, attend to it immediately.

STRUCTURAL OPENINGS. This relates to all

to prevent accidental entry.

Look over the entire structure of a building noting any deficiencies with the floors, walls, roof and fencing. Repair any holes, cracks or missing sections allowing entry in the facility. Early detection and repair can prevent higher expenditures later after a major problem develops.

Miscellaneous is the catchall category covering anything additional which may pertain to a particular facility. This may be

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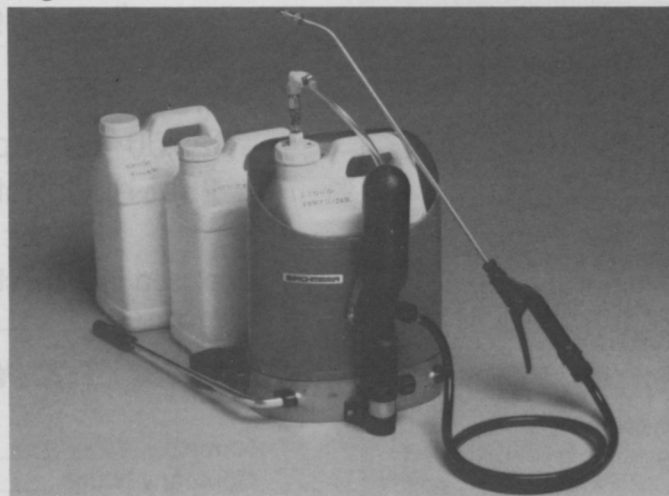
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OHIO SHOW WRAP-UP

The Ohio Turfgrass Conference and Show is gathering speed every year. With 3,400 total attendance, this year's convention was the largest ever.

It was a big year for the Ohio Turfgrass Foundation. Though in past years the Foundation has repeatedly broken attendance records for its Conference and Show, the 1987 event was the biggest yet with a total of 3,400 registrants filling the Ohio Center, Columbus, on December 7-10. "We went over the 3,000 mark pretty easily," said John Street, OTF executive secretary. Registrants were a broad representation of the industry, hailing from at least 35 states, as well as England and Canada, he said.

For the recent show, 370 individual booth spaces were sold to a total of 200 exhibitors. Floor space encompassed about 120,000 square feet. This year for the first time, 70 exhibits were displayed on a balcony level. Street said this innovation caused a little apprehension at first, but exhibitors ended up very satisfied with the traffic. "They were very pleased in general. I think we did some things to try to ensure that we would have traffic up there and everything seemed to work pretty well. I can almost say there were no complaints. From year to year, traffic is always a concern, but this year they seemed to be quite pleased throughout the whole show. I think the only time it might have gotten a little bleak in there was when Arnie (Palmer) was speaking."

Attendees were also pleased with the educational portion of the program. As in past years, the Foundation offered four workshop tracks including grounds maintenance, professional lawn service, athletic fields and golf course. "Everybody that I talked with had a lot of compliments regarding the program and the speakers. They think everybody did a pretty good job."

In 1987, OTF was prompted by its clientele to add more ornamental subjects into the program, Street said. "We tried to offer those in a workshop-type atmosphere. They

have been extremely successful. We're turf-oriented people but our clientele want more information on ornamentals. We've been trying to do as much of that as we can without significantly diluting the turf portion of the program. It's been working out quite well."

Next year's Conference and Show will be held December 6-9 at the Cincinnati Convention and Exposition Center.

In a workshop titled "Selection and Care

Annual flowers are very simple to grow, he said. "It's pretty straightforward. Number one, you must select the proper ones. You use those that are going to do well. For example, I don't recommend growing xenias because they're so susceptible to mildew. Unless you spray them regularly, particularly in the latter part of the summer and early fall, they're going to be covered with mildew. They're going to turn brown and die."

With perennials it's necessary to know how tall the plant will grow and how far it will spread. It's also important to know when the plants will bloom. "They don't all bloom all summer long. Some of them bloom very early. You have to know when this is going to happen. If you don't, you get everything growing in the spring and in the summer. Perennial gardens are always becoming dormant, they're not really dying but the leaves turn yellow and brown and dried up. They look terrible. If you have a garden,

you may lose all the flowers and color at one time."

Peonies and bulbs are ideal plants, said Caldwell. "The added advantage of the peony and iris is that the foliage stays there all summer long. Many of the others dry up. But these continue to provide green in that garden area."

Perennials take a little more planning, he added. "You really have to take a few minutes and lay out the design because you'll want to know where the tall and low growing plants are. Perennials do require more care than some other plants, but don't be afraid to use them."

Perennials shouldn't be planted in a wet area either. "They either have fleshy roots or tubers and they're going to rot. Weed control (also) becomes very important. If you've got perennial grasses involved,



The trade show floor at Ohio Center, Columbus.

of Annual and Perennial Flowers," Dr. Jim Caldwell, horticultural consultant, Caldwell and Associates, Columbus, Ohio, spoke on choosing plants that provide color late into the fall.

He suggested working with bulbs from the perennial family as they come up year after year, are easy to maintain and add a tremendous amount of color and design. Annuals, plants that are started from seed in the spring and then grow through the summer, are generally killed by the first hard frost, he said.

Caldwell defined a quality ornamental plant as a shrub or tree that has good flowers in the spring, good foliage in the summer and good fall color. He added that working within a certain budget, it may be hard to sell customers on some of these kinds of plants, but that they usually justify the cost.

you've got to control them before you plant the perennials. Because there are no chemicals available today that you can spray in a perennial garden to kill the weeds and not kill the perennials."

In "Physical and/or Chemical Approaches to Soil Management," Dr. Martin Petrovic, research agronomist, department of floriculture and ornamental horticulture, Cornell University, Ithaca, New York, spoke to lawn care professionals about what they can do in terms of chemical and physical modification of soils.

When it comes to chemical modification with regard to nutrient availability, one of the main things that can be done is modifying the pH of the soil. "Between the six to seven range, we quite easily see that most of our major nutrients are readily available.

When phosphorus gets below 6.5, there are some drop-offs; it's a little bit less available."

Petrovic said the lawn care operator can apply liming materials to help modify the soil. "We did a lot of work in the past looking at some of these different liming materials and it does take a period of time. I think you have to keep your customers aware of that. You put an application of granular limestone material down and it may take a year, sometimes two years, to modify that surface two inches of soil."

What happens when you have higher pHs? Lawns with higher pHs such as 7.5 tend to be more yellowish looking. In this case, the LCO doesn't get the response from a nitrogen application that he might normally expect. "Occasionally we do run into those situations and have to take the op-

posite approach," said Petrovic.

The balance of certain nutrients in the soil will encourage or discourage particular grass types, he added. "Annual bluegrass generally loves higher pH soils. When you get pHs that are seven or above it really favors the development of annual bluegrass. The other aspect is having high phosphorus levels in the soil. You can manage the levels of these two things."

At this year's conference, a special full day workshop on "Maximizing Job Satisfaction" was offered. Other seminars dealt with water quality related to irrigation, estimating maintenance and landscape work. —Julie November

The author is Assistant Editor of ALA magazine.

GOLF IMMORTAL TAKES THE FLOOR

The National Golf Foundation estimates that the increasing popularity of the game of golf will leave the United States with a shortage of 4,000 golf courses by the year 2,000. A new course would need to be opened everyday from now until the turn of the century, to meet the expected demand.

Professional golfer Arnold Palmer, winner of 91 tournaments and president of Golf Course Design Company, related this fact to a full house of green industry professionals in his keynote address at the Ohio Turfgrass Conference and Show.

"Your business is going to become more of an influence on America than any of us ever thought," said Palmer. "Golf courses, greens and landscaping are going to have a very definite effect on our society. You people who have learned to maintain and take care of these green areas are going to become more significant and more necessary in our society."

Palmer said that in his travels, it is mind-boggling to see the interest overseas in building golf courses. "We recently talked to some people in Japan and they're now interested in doing the very same things that you're doing here today — building universities and turfgrass programs to educate their people on how to maintain those green areas."

Palmer thought it would be a good opportunity to experiment with grasses when he recently built a golf course in central Florida. At the site, he put Penn-cross on the greens but ground temperatures were maintained at more than 105 degrees for half the summer.



Arnold Palmer

"You know what can happen with that kind of temperature. We maintained at a great expense. We are continually watching and taking care of one problem while another problem is developing."

The grass responded very quickly to treatment as temperatures cooled this fall and the golf course is now in pretty good condition, Palmer said. However, he decided the situation wasn't practical and will switch to a grass which will thrive under the hotter temperatures in the spring.

According to Palmer the green industry has come a long way in few short years. He spoke of his father who had been a greenskeeper that began his career maintaining a nine-hole course. In 1935, his annual budget at the Pro Country Club was about \$10,000 a year. Today the budget for an 18-hole golf course is closer to \$700,000 per year. At Bay Hill, where the annual Bay Hill Classic is held, the budget runs

\$1 million for 27 holes of golf, Palmer said.

Palmer added that no one knew about *Poa annua* in his early days as a golfer. "We didn't have *Poa annua*. If we did, no one recognized it. Today if anyone can figure out a way to wipe *Poa annua* out in a summer and be free of it for the rest of a duration, they could make themselves a million dollars many times over and very quickly."

According to Palmer, the industry is taking a long tedious course when it comes to techniques of mowing and treating with various insecticides. "We're catching the grass clippings now and not letting them fall on the fairways. We had one gang mower on the golf course a few years ago. We cut all the fairways with that gang. Today we have seen the transition to the more sophisticated gang mowers that are all combined up into one tractor."

All of these developments affect golf course maintenance, he said. "We will eventually eliminate the *Poa annua* by the treatment used on the golf courses catching the clippings and the various insecticides that we're using."

The possibilities for the turfgrass industry are unlimited, Palmer concluded. "There are so many things that you can do. Wouldn't it be great if we had a grass that we could plant in Pennsylvania or Ohio and then take it to Florida where it's hot, plant that same grass, and have the same results? I think someday we will. I think someday we will see the bermudas, the bents and the hybrids so that we will see those things. You people are the ones who are going to make that happen."

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CUSTOMER RETENTION

Dow Chemical Company's recent survey cites poor weed control as the top reason for callbacks and cancellations.

Poor weed control was cited as the number one reason for callbacks and cancellations by LCOs participating in a recent customer retention survey. The Dow Chemical Company conducted the survey at the Professional Lawn Care Association of America's 1987 Convention and Show in San Antonio, Texas. The LCOs also reported that customers today have higher expectations for perfect looking lawns.

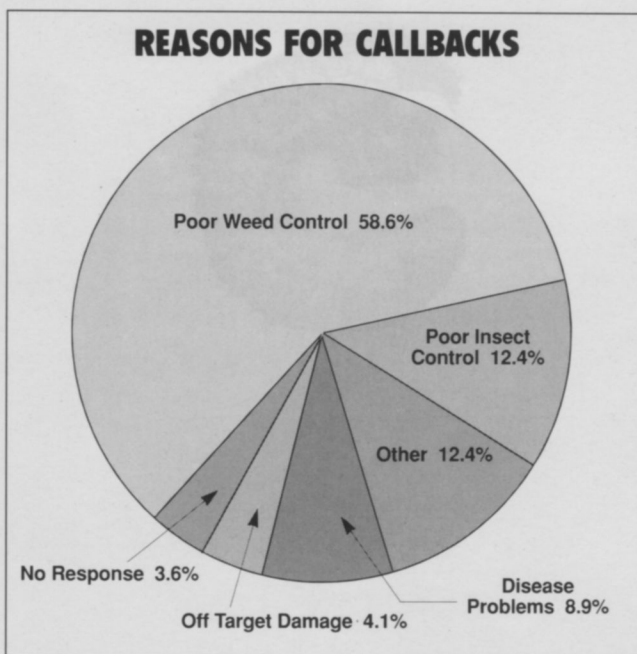
Altogether, 145 LCOs filled out the survey forms at Dow's exhibit booth. The LCOs represented 23 percent of the firms attending the convention. Sixty-six of the respondents were either presidents or owners of their firms. Another 30 were vice presidents or managers.

WEEDS BLAMED. Almost 60 percent of the LCOs blamed poor weed control for callbacks — 48 percent blamed weeds for customer cancellations. Customer relocation, an uncontrollable factor, was cited by 54 percent as an important reason for cancellations.

Twenty-eight of the participants considered callbacks and cancellations major problems for their lawn care operations, while 69 felt that these were only minor problems. Most, however, were optimistic that they could alleviate those problems with a concerted effort.

TACTICS SUGGESTED. Tactics cited that could improve those callback and cancellation figures included: better weed and insect control, good customer relations, more personal calls, improved customer education, better employee training and faster responses to callback requests.

One-third of the respondents felt that compared to three years ago, it is more difficult today to retain customers. Forty percent, however, felt that the difficulty of retaining customers is still about the same. Only 15 percent said that it is easier today to retain customers.



Courtesy of Dow Chemical Company.

Almost half of the respondents felt that it is more difficult today to obtain new customers, while 24 percent thought it is easier than three years ago.

HIGHER EXPECTATIONS. Almost 50 percent felt that customers today have higher expectations for perfect lawns than they had three years ago. One-third thought that their customers' expectations today remain the same.

The vast majority, 79 percent, of the participants reported good weed control as very important in retaining customers. Good insect control was cited by 49 percent as "a very important" factor in retaining customers, while only 15 percent thought otherwise.

Revenue	\$572,000	100%
Production Labor	200,000	35
Chemicals	86,000	15
Vehicle Expenses	86,000	15
Operating Expenses	114,000	20
Total Expenses	\$486,000	85%
Net Profit	86,000	15

2200 Customers 5 Applicators	
Total Stops per Year	11,000
Callbacks (10.5%)	1,150
Cost per Stop	x \$40

Source: The Dow Chemical Co.

COST OF CALLBACKS. Because callbacks and cancellations can have such a detrimental affect on the LCO, Dow is marketing a video and pamphlet on "Callbacks and Cancellations."

The pamphlet examines a typical lawn care business and measures the effects callbacks and cancellations can have on it.

The chart below illustrates a typical lawn care business. Total revenue has been listed along with expenses such as production labor, chemicals, vehicles and operating expenses.

The firm has five applicators serving 2,200 customers. They make 11,000 stops per year along with 1,150 callbacks. This total (12,150) is divided into the firm's total expenses (\$486,000) to find the average cost of a stop — \$40.

Callbacks are costing this firm \$46,000. If you figure in the time spent servicing a callback instead of acquiring new accounts, the cost of a callback can skyrocket.

Accompanying the pamphlet is a 15-minute video from Dow reiterating the costliness of yearly callbacks and lost customers.

In the tape, Dow acknowledges that callbacks are a fact of life in the industry and points out that the average LCO loses 20 percent of his total customer base every year. No doubt it cuts into bottom line profits when an applicator must return to a customer's lawn to diagnose a problem and re-treat the lawn. However, it's not just a loss of time and money. If the callback turns into a cancellation, lost revenues can double.

Dow's video also features Turflon® herbicides, premium herbicides which contain the active ingredient triclopyr. Dow is promoting Turflon as a product line that results in fewer weeds and fewer cancellations.

For a copy of the tape, contact your local Dow representative.

The results of the survey were provided exclusively to ALA magazine by The Dow Chemical Co.

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WATER INFILTRATION USING SOIL SURFACTANTS

In a Midwest survey it was found that less than 20 percent of total rainfall actually became root zone moisture, emphasizing that increasing irrigation efficiency is vital.

Golf course superintendents and sports field managers have been using soil wetting agents to maintain quality turf under demanding conditions for more than 30 years. Can home lawns and other turf areas under relatively low management, lighter traffic and less exacting demands also benefit from such materials?

This is the question we were asking when we established a research program in 1986 in cooperation with Bethel-Arlington Cemetery in Pennsauken, N.J. Our intention was to take previous work dealing with the effectiveness of wetting agents one step further (3, 9, 2).

Specifically, our objectives included determining effective rates, optimum timing and the effects of a commonly available soil wetting agent on water movement and hydrophobicity. The wetting agent in this study was a non-ionic type, consisting of equal parts of polyoxyethylene esters of mixed cyclic acids and polyoxyethylene ether of alkylated phenols.

The soil condition known as hydrophobicity, or water repellency, is a well established fact in sandy soil (1, 7, 4), and in addition to golf greens and lawns (8) has been identified as occurring on rangeland, citrus groves and burned over areas (6). One reason why it may not have captured the attention of managers of minimal maintenance turf as it has that of golf course superintendents is because turf mortality caused by hydrophobic soils is often misdiagnosed as disease induced. In contrast, farmers discovered long ago that tillage was a remedy for hydrophobic conditions and improved crop production. Unfortunately, turf managers do not have this option.



The cemetery test plots were laid out in a randomized complete block design.

Whether hydrophobic or not, increasing irrigation efficiency by getting water to rapidly penetrate the soil is important. In a USDA survey conducted in the Midwest, it was found that less than 20 percent of total rainfall actually became root zone moisture. (The high losses are due to runoff and evaporation). As energy and labor costs increase and water supplies dwindle it is becoming essential to get water where it is needed, when it is needed.

Based on this information we established a study in a turf area which was under

minimal maintenance. The site selected was a mixed rye-bluegrass area with some crabgrass and dicotyledonous weeds. The soil was a deep silt-loam, with 20 percent sand, typical of alluvial deposits on the East Coast. The treatment programs selected are shown on Table 1.

The weather cooperated with the experiment (an unusual state of affairs) although it was very tough on lawns in our area. Early summer had long dry periods with infrequent heavy thunderstorms. Later in the season, rains were more frequent and gentler (Table 2). The applications were made with a small-plot, CO₂ charged sprayer. Control plots received an equal volume of water. Within 24 hours following a rain, soil samples were taken from each plot and depth of moisture penetration was measured. Corresponding samples were collected and taken back to the lab to determine hydrophobicity.

One procedure for determining hydrophobicity is to oven dry a soil core overnight at 70 degrees Celcius, then measure the time for a drop of distilled water to penetrate the soil at various depths (10). Water drops were placed at 0 (thatch), 1, 2, 3, 4, 5, 7.5 and 10 cm from the top of the soil core.

Researchers are in disagreement regarding a standard measurement of hydrophobicity (time for droplet penetration) with values ranging from 30 seconds to 10 minutes. We elected to take a conservative viewpoint — in this experiment when droplet penetration time exceeded 10 minutes the sample was considered hydrophobic.

Two separate experiments were conducted

(continued on page 46)

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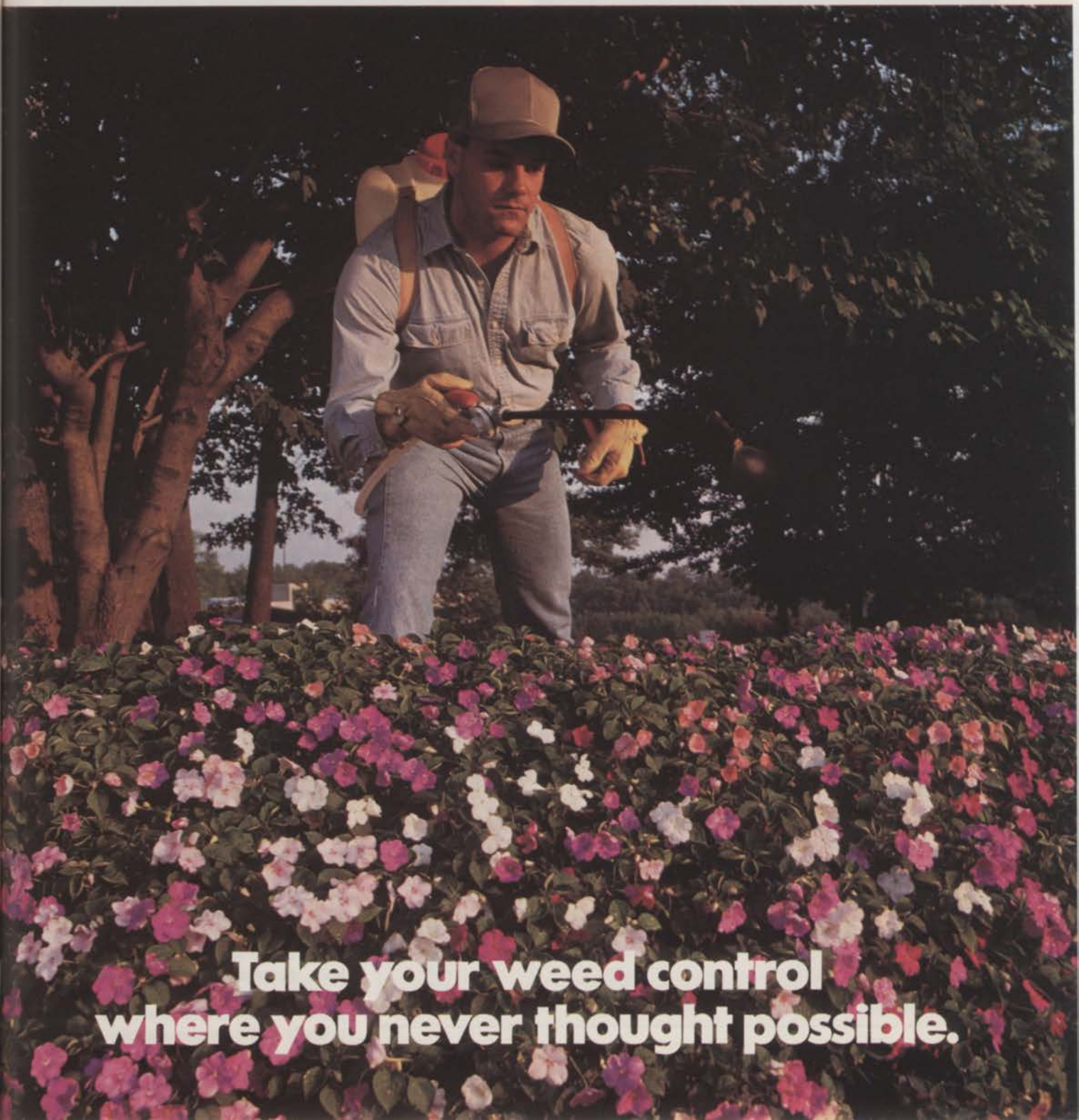
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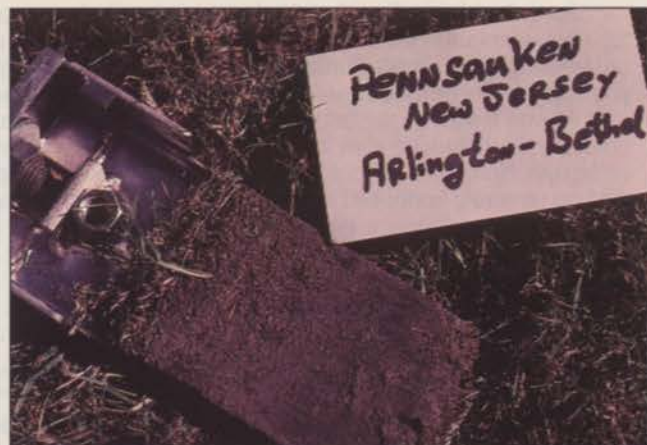
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(left) The dried soil cores, treated (third from bottom) and untreated (second from bottom), were measured for hydrophobicity, based on the time required for a drop of distilled water to penetrate at various depths. (right) Soil profile showing deep silt-loam typical of alluvial deposits on the East Coast. (below) Treatments were applied using a CO₂ charged, back-pack sprayer equipped with a four nozzle boom.

WATER INFILTRATION

(continued from page 44)

in adjacent plots using different rates of the wetting agent during the testing period. In each experiment the depth of water penetration and the hydrophobicity was measured. The wetting agent was applied every four weeks for six months for both experiments.

RESULTS OF EXPERIMENT "1". The first measurement of water penetration was made 23 days after the second application of the wetting agent. The results indicate that moisture penetration is related to wetting agent concentration, and at the high rate increased more than 200 percent over the control.

Four more samplings were taken during the course of the summer, each following a rain, and the depth of moisture penetration measured. In general, the wetting agent treated areas demonstrated significantly better water penetration than the control.

Part two of Experiment 1 involved actually determining if the hydrophobicity of the soil had been affected by the wetting agent. Overall, the treatment with wetting agent reduced the time required for water penetration in the thatch (0 cm) and treatment C and

D also decreased hydrophobicity in the 1 cm layer. Results were somewhat variable at the 2, 3 and 4 cm depths. However, except for treatment regime B, the wetting agent reduced time for drop penetration in all cases.

At greater soil depths (5 and 7.5 cm) the wetting agent treatment also decreased hydrophobicity. This response is not clearly understood but has been observed by other investigators (5). No hydrophobicity was observed in any treatment at the 10 cm depth.

RESULTS OF EXPERIMENT "2". Although this area was physically close to the Experiment 1 plot, its soils showed a great deal more hydrophobicity, as demonstrated by the time required for water droplet penetration in the control core samples. This variability in the degree of hydrophobicity seems to lend evidence to the localized nature of hydrophobic conditions. The depth of moisture penetration in the wetting agent treated plots was clearly greater at all sampl-

ing dates. This can probably be attributed to the higher rates used as compared to Experiment 1.

In summary, this study showed that one particular wetting agent can positively affect the movement of water into soils, can reduce hydrophobicity and that a regular application program is more effective than less frequent treatment. In addition, hydrophobicity has been shown to exist in silt loam soils, although it has been more frequently observed in sandy soils, particularly under drought conditions. While each soil situation should be evaluated on its own properties, this work shows that wetting agents should be considered as a management tool to aid water movement into and through soils.

There are practical applications for wetting agents in lawn care. The most important being better utilization of both natural rainfall and irrigation. When heavy but brief rains do occur more water will penetrate the soil instead of running down the storm sewer. This advantage can be particularly important in non-irrigated areas or where water use restrictions are in effect.

Deeper water penetration also stimulates deeper root growth. We have all experienced dealing with the homeowner who waters lightly everyday, goes on vacation for two weeks and returns to a dead lawn. The reason can usually be attributed to shallow root growth due to light watering.

How do you diagnose a hydrophobic condition? If you notice scattered areas of bare ground or thinning turf which will not respond to watering, or compacted high traffic areas, especially if the soil is sandy, you may have identified a hydrophobic condition. You can confirm this by testing a soil core using the same method described in this paper. It may not be necessary to treat the entire lawn, spot treatments with wetting agents can be very effective in relieving hydrophobic conditions in localized areas, particularly traffic patterns and play areas.

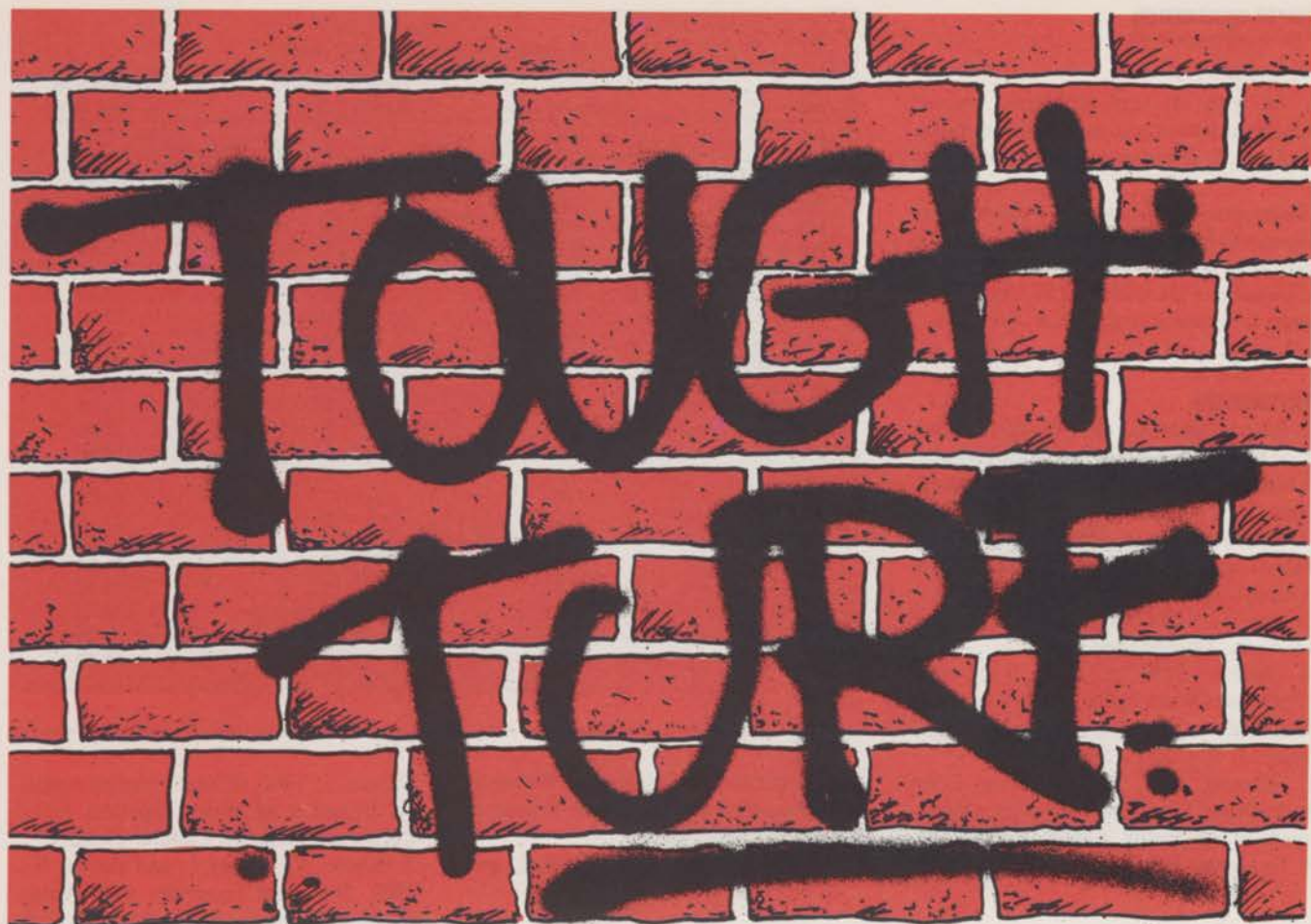
(continued on page 48)



APPLICATION SCHEDULE Experiment "1"

Date	TREATMENTS				Control
	A	B	C	D	
	(rates of Wetting Agent, oz./1000 ft.)				
April 25	2	2	2	4	0
May 20	2	0	1	2	0
June 17	2	2	1	2	0
July 15	2	0	0	0	0
Aug. 7	2	2	1	2	0
Sept. 9	2	0	1	2	0
Total for Season	12	6	6	12	0

Table 1.



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WATER INFILTRATION
(continued from page 46)

As with all turf problems, correct diagnosis is the key to solving the problem.
— Dr. A.R. Templeton and D.A. Rodriguez

Templeton is director of research for Aquatrols Corporation of America Inc. He has held research positions at American Cyanamid, FMC and the U.S. Army. Rodriguez is research assistant at Aquatrols.

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RAINFALL
(April 21 - September 24, 1986)

Date	Quantity (cm)	Days between Rainfall Events	Cumulative to date (cm)
April 23	0.53	0	0.53
April 24	0.11	1	0.64
April 28	0.50	4	1.14
April 30	0.02	2	1.16
May 22	1.25	22	2.41
June 12	2.25	21	4.66
June 13	1.75	1	6.41
July 2	2.75	19	9.16
July 10	0.92	8	10.08
July 14	0.50	4	10.58
July 18	0.10	4	10.68
July 21	4.01	3	14.69
July 28	1.02	7	15.71
July 30	2.25	2	17.96
July 31	0.50	1	18.46
Aug. 4	1.89	4	20.35
Aug. 21	0.93	17	21.28
Aug. 26	0.06	5	21.34
Aug. 28	0.33	2	21.67
Sept. 2	0.21	5	21.88
Sept. 3	0.30	1	22.18
Sept. 8	0.52	5	22.70
Sept. 19	0.18	11	22.88
Sept. 24	0.40	5	23.28

Table 2.

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ACKNOWLEDGEMENT

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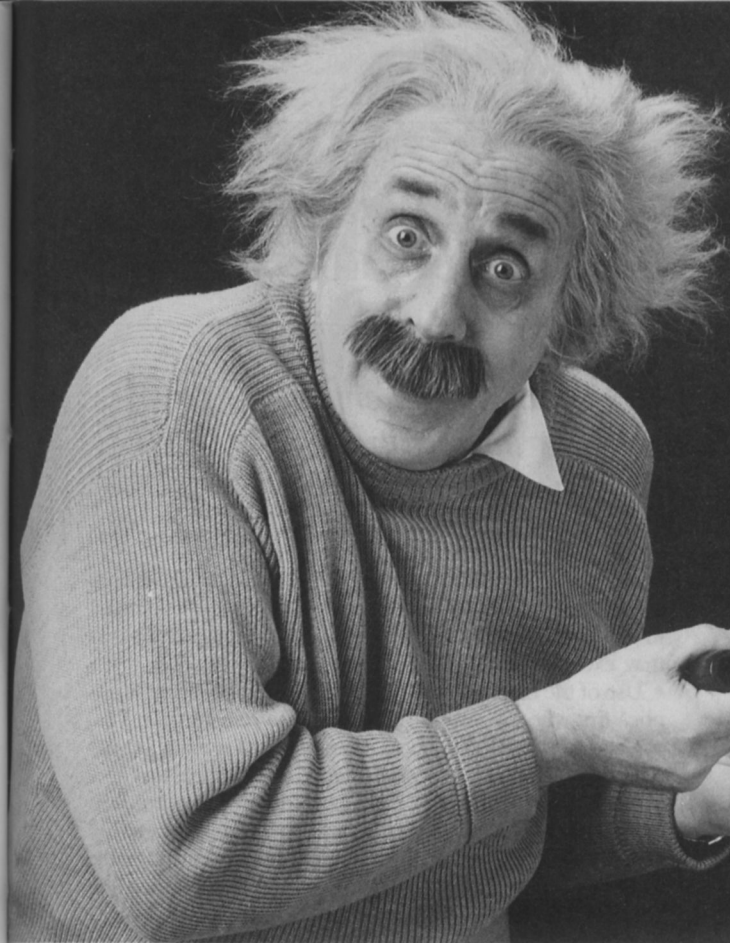
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RISK OF TURF HERBICIDES

The risk associated with exposure to chemicals potentially toxic depends on how toxic the material is, and the extent of exposure to the material.

Use of pesticides is a growing concern today. Home lawns, commercial lawns and golf courses are no exception. Pesticide applications on lawns have become a major target for anti-pesticide groups because of their high visibility. In addition, turf being a non-agricultural (non-food crop), has become another focus of interest to anti-pesticide groups. Pesticide use controversy has become a major issue for the past several years. Needless to say, pesticides are a necessary component for a well planned lawn care program.

How safe are these pesticides? One must understand the toxicity of these materials. Toxicity is dependent upon chemicals. Each compound is characterized by its inherent chemical nature. Therefore, the toxicity is inherent to its chemical structure. Toxicity can be expressed in various ways.

The risk associated with exposure to chemicals potentially toxic depends on how toxic the material is, and the extent of exposure to the material.

The term LD50 (Lethal Dose 50) is used to determine toxicity. The LD50 is the amount of active ingredient of a pesticide that will result in the death of 50 percent of the test population. The test animals are normally rats, mice or some other animal. LD50 is expressed in milligrams of pesticide per kilogram of body weight of test animal. The higher the LD50 of a chemical, the less likely the chemical is to be toxic. All pesticides can be classified into various categories according to the Federal Insecticide, Fungicide and Rodenticide Act (Table 1).

RISKS OR HAZARDS. The risk or hazard is a function of

toxicity and exposure including exposure level and length of exposure time. It equals toxicity times exposure. In order to reduce the risk or hazard associated with a pesticide, one may exercise the following steps:

- Use of the material should only be by knowledgeable applicators who are properly equipped to handle it.
- Determining how poisonous a compound is to an animal after a single dose or exposure. Acute toxicity from turf herbicides which may result from accidental spill, exposure or ingestion, is extremely rare. All herbicides are applied to the turf in very dilute forms either in solution or in granular forms with fertilizer base. Therefore, the acute toxicity to humans who come in contact with a treated turf area is a rare occurrence.
- Determining how poisonous a pesticide is to an animal after small repeated exposure over a period of time. The chronic risks are very difficult to measure.

EXPOSURE TO PESTICIDES. There are three basic ways in which a human can come into contact with a pesticide. These routes are dermal exposure, oral exposure and respiratory exposure.

Dermal exposure, in which the pesticide comes in direct contact with the skin of the applicator, is the most common method of exposure to pesticides. If the applicator is not careful in mixing, handling or applying pesticides, chemicals can be spilled on the skin and absorbed into the body. This type of exposure can easily be prevented by use of protective clothing, gloves, etc.

Oral exposure occurs through ingestion. This is of the rare type among accidents.

However, most ingestion accidents can be avoided by making sure all pesticides are stored in their original containers. The applicators can avoid ingestion of any pesticides by thoroughly washing hands, face and clothes immediately after using a pesticide.

Respiratory exposure occurs when the fumes of a pesticide are inhaled. This can be easily avoided by using a proper respirator whenever applying pesticides. This is also recommended when using fumigants, dusts, aerosols and even when mixing chemicals.

The commonly used turf

Category	Signal word	Oral LD50 (mg/Kg)	Dermal LD50 (mg/Kg)	Probable lethal oral dose/man
I	DANGER POISON	0 to 50	0 to 200	a taste to a teaspoon
II	DANGER	51 to 500	201 to 2,000	1 teaspoon to 2 tablespoons
III	CAUTION	501 to 5,000	2,001 to 20,000	1 oz to 1 pint
IV	CAUTION	Over 5,000	Over 20,000	1 pint to 1 quart

Federal Insecticide, Fungicide and Rodenticide Act.

Table 1. Categories of toxicity as classified by FIFRA.

herbicides have high LD50s and are therefore relatively non-toxic (Tables 2 and 3). All of them belong to either Category III or Category IV, except one that belongs to Category I. Again, Paraquat, found in Category I, is not a common herbicide for weed control although it is being used only for renovation of turf areas.

How toxic are these herbicides? Let me give you one example of LD50. Let me use aspirin as a bench mark to compare with our turf herbicides. It takes 1,240 milligrams of aspirin for every kilogram of body weight to kill 50 percent of the animals ingesting it. An adult weighing 50 kg (110 lbs.) would die from the dosage of 300 aspirin tablets (62 mg).

But Dachthal (DCPA), a commonly used preemergence herbicide, has an LD50 of 3,000 mg. This is about two and a half times safer than aspirin.

The lawn applicator or a golfer would have to ingest 150 gm of Dacthal to die. This is an unlikely situation under modern lawn management system:

- Materials with less toxicity are chosen, while providing acceptable control of desirable pests.
- Taking precautions to limit exposure to herbicides.
- Using a very diluted application, thereby reducing toxicity levels.
- Using a formulation (granular) not readily absorbed through skin or inhaled.

NATURAL CHEMICALS. Almost every food or beverage contains natural carcinogens. Some of these compounds are highly toxic to humans, however, the public consumes them without question.

High amounts of nitrate are a normal component of vegetables. Beets, celery, lettuce, spinach, radishes and rhubarb all contain about 200 mg/100 g of material. Cruciferous vegetables such as mustard, kale, turnips and cabbage are also high in nitrate. Aflatoxin (mold toxin in peanut butter), hydrazine (in mushrooms), estragole (in basil), psoralens (in parsley and celery), isothiocyanate (in mustard), symphines (in comfrey) are some of the examples of natural toxins.

Ames (1, 2) has made public so far the following risk factor associated with some of the natural chemicals (Table 5). Over a lifetime, the average person who consumes an average amount of peanut butter and who is not occupationally exposed to an extraordinarily high dose of EDB probably faces significantly greater cancer risk from aflatoxin in peanut butter than from the traces of EDB found on procedures.

PERCEPTION OF FATALITY. One fatality from pesticides is too many. The number of accidental deaths from pesticides in 1983 was very small relative to those from other substances. Poisonings are only one class of accidental

Trade name	Common name	Toxicity Oral LD50	Category
BREAKTHRU	Chlorfloreneol	3100	III
LONTREL	Clopyralid	5000	III
BROMINAL	Bromoxynil	440	II
BANVEL	Dicamba	1028	III
WEEDARE 64	2,4-D	300-1000	II-III
WEEDONE 2,4-DP	Dichlorprop	800	II
DACONATE	MSMA	2630	III
MCPK K-4	MCPK	1060	III
TURFLON	Triclopyr	2140	III
PARAQUAT CL	Paraquat	120	I
ROUNDUP	Glyphosate	4900	III

Compiled by the author. Source: Weed Science Society of America Handbook, 1983 (3).

Table 2. Commonly used postemergence herbicides for broadleaf weed control and turf renovation.

Trade name	Common name	Toxicity Oral LD50	Category
BALAN	Benifin	5000	III
BETASAN	Bensulide	770	III
DACTHAL	DCPA	3000	III
WEEDGRASS	Pendimethalin	3380	III
BLOCKADE	Prodiamine	>5000	IV
RONSTAR	Oxadiazon	30,000	IV
TREFLAN	Trifluralin	3700	III
TUPERSAN	Siduron	7500	IV
TABLE SALT	Sodium chloride	3320	III
ASPIRIN		1240	III

Compiled by the author. Source: Weed Science Society of America Handbook, 1983 (3).

Table 3. Commonly used preemergence herbicides for weed control.

deaths. The total number of accidental deaths from all causes in the U.S. was 92,000 in 1984.

Why do people think the risk of death from pesticides is so great? Well, this is because of mistaken perception. Perception of risk may differ markedly from actual risk. Public estimation of the risk factor associated with pesticides has been demonstrated in a previous public opinion poll. Pesticides actually ranked 28th of the 30 sources of risk. The risk of spray cans was the lowest among the causes of accidental death considered, and the risk from pesticides was next to lowest.

To conclude, I would say that commonly used turf herbicides are very safe. When properly used, they may not cause concern to our environment. — *Dr. Prasanta C. Bhowmik*

The author is an Associate Professor of Weed Science at the University of Massachusetts at Amherst.

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QUESTIONS & ANSWERS

Q. Are lawn applicators reaping the full benefits of available technology?

A. The key to obtaining maximum turf quality for customers often falls victim to program implementation.

Most LCOs must continually walk that fine line between innovation and old, reliable maintenance programs. What we might be calling acceptable today could become the antiquated program of tomorrow. More importantly, no LCO can afford to neglect an improved technology and risk becoming a dinosaur in the age of innovation.

Perhaps more so than any other profession, plant care people regularly face a staggering barrage of new ideas, products and equipment — many of which can represent a windfall for one LCO, but are highly inapplicable to another.

With competitive pressures and environmental implications breathing down one's neck, it can be difficult to justify even slight deviations from a program that is currently holding its own. We must wrestle with the prospects of a change either propelling an operation into super-efficiency or producing horticultural bedlam on a massive scale.

Unlike a painter or plumber, LCOs are not afforded the luxury of evaluating a new product or procedure 10 minutes after the job is complete. In fact, for items such as preemergents, you may have the entire season — and several hundred lawns gone by — before the benefit of a new program is finally revealed.

Any veteran LCO knows to never take a new technology at face value. The idea of an orchestrated burnout of a hundred lawns is the stuff of LCO nightmares, especially for those unfortunate few that have survived

such a fiasco to tell about it.

Labels are thoroughly researched, nevertheless, not even the major manufacturers or university trials can possibly account for every disparity in regional performance, product compatibility, environmental interactions and especially long-term activity. Indeed the industry is blessed with a continuous supply of fresh ideas and product innovations.

Q. Will the lawn care industry ultimately require a professional labor force on all fronts, or will the ever-increasing complexity of the industry alter the entry level of field personnel?

A. It is increasingly important that field personnel know not only what they do, but why they are doing it. The odds of an open and shut program design conforming to the majority of job scenarios can be great. But, on the other hand, there are seasoned, degreed LCOs that never cease to be amazed by the most unlikely of botanical and/or environmental surprises.

What makes this fact more crucial is the potential landscape value of even the least profitable account. In these not so unusual situations, the value of an applicator force able to professionally discern and simultaneously compensate for a mixed bag of situations goes without saying. Therefore, yet another crucial business decision rears its ugly head when we contemplate a professional versus a skilled applicator force.

The subsequent shift in employee responsibility will definitely mean a corresponding hike in labor expense, or at least a radical redistribution of the financial resource.

This can also greatly shift the concerns

of management away from the technical aspects and toward the more human resources of an operation. Clearly, the job of management increases in scope but decreases in complexity as responsibility shifts to more discerning field people.

Perhaps the extra cost of a pro-applicator force could be at least partially absorbed with a corresponding reduction for overall management functions.

It's a fairly sure bet that overall service efficiency stands to improve with a professional applicator, not to mention the obvious savings in many aspects of technical training.

The workings of an infinitely more dynamic greens profession cannot necessarily be patterned after a more mechanical, trade-oriented endeavor with better defined service options.

Current trends in complexity and competition for land care can demand that once again doctors make housecalls.

Considering the evolutionary schedule of our industry, and by its very nature, quantum leaps in philosophy and radical changes in direction could become the rule rather than the exception.

For the industry to maintain authentic professional status among services, we should certainly inject a healthy dose of professionalism, particularly when a situation is not expected to go smoothly. — *James Ware*

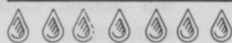
The author is a regular contributor to ALA magazine.

This department is intended as a dialogue between readers and ALA. If you have a question for Lawn Care Consultant James Ware, or just want to comment on one of the topics he addressed in the column, we'd like to hear from you. Write: ALA magazine, 4012 Bridge Avenue, Cleveland, Ohio 44113.

COMING NEXT MONTH

In the March issue of ALA magazine, successful sales managers will describe how you can create a first-rate sales force for your company. We'll also give you the results of our fifth annual survey of the buying habits of LCOs. We will map out when the industry buys its chemical supplies and what percentage of gross annual expenditures the purchase represents. We'll also bring you the latest information on ground cover and ornamentals.

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FINANCIAL CORNER

TAX LAWS MEAN TOUGHER RULES FOR BUSINESS WRITEOFFS

The new tax code contains a wealth of significant changes, but many of the most important revisions have received little publicity. One of those concerns equipment deductions for people who operate their own small businesses or who have businesses in addition to their full-time jobs.

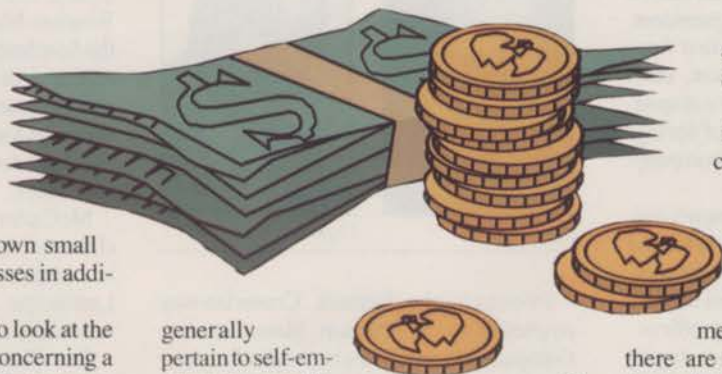
In this column, we're going to look at the complex rules for deductions concerning a home computer. With more and more people buying a home computer — or thinking about it — it's important to know whether or not you can get a tax break for the purchase of a computer.

The biggest change in the law is the elimination of the investment tax credit, which provided a deduction of up to 10 percent of the cost of the computer. The elimination of the investment tax credit was made retroactive to Jan. 1, 1986, so even if you bought a computer in 1986 intending to write it off on your tax return, you couldn't using the investment tax credit.

However, the bottom line is that you can write off the costs of a personal computer (PC) used in business, provided you meet certain requirements spelled out by the Internal Revenue Service.

What causes problems is that the IRS doesn't always spell things out very well.

Before you panic, however, there is a chance that your personal computer may not be subject to the rigid IRS requirements for



generally pertain to self-employed people. If you simply have a

PC at home and use it on occasion for projects required by your employer, the computer has to meet the IRS rules for listed property.

Two rules stand out. They say that a PC located at your home and used for business purposes can qualify for tax benefits only if "such use is for the convenience of the employer and (is) required as a condition of employment."

In the past, the IRS has been extremely strict on those points. It isn't enough that your PC use is work-related, or that you can complete projects more easily on your home PC than on the computers at work. If your boss requires you to use a PC, and provides one at the office, chances are that the IRS will look askance at your attempt to take deductions on your home computer.

Here is the example provided by the IRS. "D is employed as an engineer with Z, an engineering contractor firm. D occasionally takes work home at night rather than work-

a straight-line depreciation over a 12-year period.

It's important to note that investment-related use of your computer cannot be used to meet the 50 percent requirement.

However, if you do meet the requirement, you then can add investment-related use to the total.

If your PC does meet the 50 percent requirement, there are tax benefits above and beyond depreciation. The percentage of use for business and investment activities can be available for an expensing election.

The expensing election allows you to take a deduction of up to \$5,000 for a computer placed in service prior to 1987, and \$10,000 for one placed in service this year — and cannot exceed the taxable income for your trade or business in that year.

You can take the election only in the tax year the computer was placed in service, but if you don't use it all because of the trade or business income limitation, you can carry over the deduction. If you take that deduction, you must reduce the value of the computer by that amount for depreciation purposes. If business use of your computer is reduced after the first year, the expensing election and depreciation are all subject to recapture by the IRS.

Obviously, because of the recapture provision, the IRS requires you to keep good records on the use of your PC. Not only do you need to keep records as to the business use of the computer, you're required to maintain a written log showing when the PC was used, the amount of time used and for what purpose. Such records should be "made at or near the time" of use, the IRS says. (You can keep records for part of the year and use that to determine the full-year figures, but the portion of the year recorded must be representative of the entire year.)

If anything is clear regarding tax benefits of a personal computer, it's that the rules can be complex and confusing, especially when it comes to recapture regulations — and because of the new tax code. Because of that, it's essential that you discuss the matter with your tax attorney or financial planner before wading into the murky waters of the personal computer deduction.

The preceding information was provided by IDS Financial Services Inc.

The bottom line is that you can writeoff the costs of a personal computer (PC) used in business, provided you meet certain requirements spelled out by the Internal Revenue Service.

"listed property." Such property includes cars, computers and other items that can easily be used for personal purposes. Computers used in business are classified as listed property only if they are not used at a "regular business establishment." So if you have a PC at your office, or in an area of your residence that qualifies as a home office under IRS rules, the entire cost of the machine qualifies for tax benefits — provided that it is used only for business.

Remember, though, that such exceptions

ing late at the office. D owns and uses a computer that is identical to the one she uses at the office to complete her work at home. D's use of the computer is not for the convenience of her employer and is not required as a condition of employment."

Even if you meet the above requirements for listed property, your tax benefits are minimal unless business use of your PC is more than 50 percent. If you fail to meet the 50 percent requirement, the only tax benefit is depreciation, and you must take

PEOPLE

Spring-Green Lawn Care Corp., one of the nation's largest lawn and tree care franchise networks, has named **Thomas W. Hofer** its new president. Hofer was one of the company's first franchisees from 1977-80. As president, chief operating officer and treasurer, he is responsible for the overall management of Spring-Green as well as the operations of company-owned units.

In 1980, Hofer joined the company's corporate ownership as an officer, director and shareholder. The next seven years, he served as executive vice president, and in early 1986 became the chief operating officer.

Hofer holds a bachelor of science degree in agricultural economics from the University of Illinois.

John Crumrine has joined Exmark Manufacturing Company Inc. as a design engineer at the Beatrice, Neb. facility. He will be working in the design and development of both new and existing commercial lawn care equipment. In the position, Crumrine will focus on product conception, performance testing and quality and safety assurance.



Hofer



Crumrine

Prior to joining Exmark, Crumrine was employed by Richardson Manufacturing Company. He received a bachelor of science degree in mechanical engineering from Kansas State University in 1971.

Steven W. McCarter has been appointed district specification manager for Weather-Matic. His territory will include the central and eastern United States, where he will assist landscape architects, irrigation consultants and other design professionals regarding irrigation equipment selection and design. McCarter will also support regional sales managers by conducting seminars for

professionals and design students.

A 10-year veteran of the landscape industry, McCarter most recently served as Weather-Matic's regional sales manager in the Southwest. He is a registered landscape architect in Oklahoma and New Mexico, and a licensed irrigator in Texas. He has also served as a staff landscape architect/project manager for design firms in Kansas City and Tulsa.

McCarter holds a degree in landscape architecture from Kansas State University and is a member of the American Society of Landscape Architects and the Irrigation Association.

Jim Tanner, president of the Tanner Agencies, Dundas, Ontario, will represent Scag Power Equipment's line of commercial rider and walker mowers as an independent sales representative in Canada.

Along with his sales and trade show duties, Tanner will work closely with Canadian distributors in the training of sales personnel on both the distributor and dealer level.

A lawn and garden industry veteran, Tanner previously served as sales manager for G.C. Duke. ■

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PRODUCTS

The Promax™ aerator with adjustable weights is designed to give variable coring depth, penetrating up to four inches in most soils. Easy access slots allow for fast stacking and removing of these modular weights.

Self-powered when aerating, moving to and from turf, the aerator is easy to operate and maneuver in tight areas. The unit aerates up to 25,000 square feet per hour with a 20-inch swath.

Promax is made of heavy-duty tubular steel, yet is compact enough to fit in the trunk of most cars. Other features include fingertip clutch control, removable handle, hardened steel open or closed coring tines and several engine options.

Circle 101 on reader service card

Filling the niche between an all-terrain vehicle and a mini pickup truck, **Kawasaki** is introducing the MULE 1000 utility vehicle for agricultural, turf, industrial and other off-highway applications.

The MULE 1000 has seating for two passengers, a tiltable dump bed and a payload of 1,000 pounds. With an overall size of



roughly four feet wide by eight feet long and a curb weight of 1,098 pounds, it can easily be transported in the bed of a standard-sized pickup truck.

It's powered by an 18-horsepower two-cylinder gasoline engine and features a Kawasaki Belt Converter automatic transmission, as well as offering a dual mode

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differential. The MULE 1000 has four-wheel independent suspension and has oversized, low-pressure knobby tread-type tires.

Production of the utility vehicles began last month at the Lincoln, Neb., plant and will initially be sold through selected dealers in California, Texas, Florida, Pennsylvania and Illinois, as well as the Rocky Mountain distribution area.

Circle 102 on reader service card

Available from **The Grasshopper Company**, the 11 horsepower Grasshopper Model 411 features zero-turning-radius, dual-hydrostatic drive and an agile 35-inch outfront deck. This combination, along with dual-



lever steering, provides ease of operation, superior maneuverability and high productivity in a variety of mowing conditions, including hard-to-mow and difficult-to-reach areas.

Compact design allows the model 411 to pass through standard yard gates and narrow openings with ease.

Outfront deck design provides unlimited visibility and permits trimming flush against walls, plantings and monuments. The ability to trim around tree trunks and reach under low-hanging trees and shrubs is also enhanced.

Circle 103 on reader service card

Hahn Inc. is introducing a new commercial dethatcher with an optional calibrated Seeder attachment. The blade reel is powered by a five horsepower industrial/commercial Briggs & Stratton engine and has 14 fixed blades on 1 1/2-inch centers, to cultivate a 19 1/2-inch wide strip. The blade height is adjusted with a simple threaded hand crank. With the addition of the Seeder, preparing a seed bed and seeding are accomplished in one operation.

Circle 104 on reader service card

Pinnacle Industries is introducing a high-performance hydromulch product, incorporating a custom blend of seaweed to im-

prove binding and tackification in hydraulic seeding.

The new tackifier formula, carrying the brand name "Ever-Stik," will be available to landscape engineers for early spring planting.

Hydrolic seeding, the spraying of a mixture of fiber-mulch, colorant, lime, fertilizer, seed and a binder-tackifier, is an increasingly popular technique for producing fast growth of grass on slopes, embankments and difficult to reach surfaces on residential and commercial construction sites as well as highway rights-of-way.

Circle 105 on reader service card

Several accessories for snow removal chores are now available for the Cushman® Front Line® tractor, manufactured by **OMC Lincoln**.

The newest addition is a Ber-Vac two-stage commercial snow blower, which features hydraulic lift, hydraulic chute rotation up to 200 degrees, and replaceable cutting edge and skid shoes. The snow blower clears a path 51 inches wide, with an auger cutting height of 23 inches.

Also available for the Front Line tractor is a 48-inch single stage snowthrower, a 60-inch angled sweeper brush for clearing light snow cover from sidewalks, driveways

(continued on page 60)

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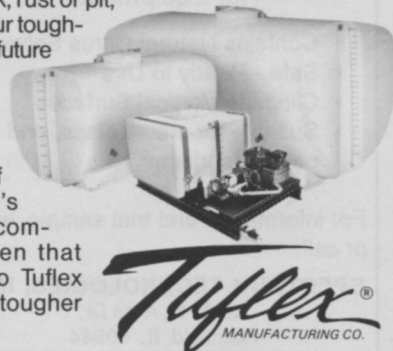
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—Rex Turf, *Hollywood Lawn News*

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—Roger Fairways, *Crabgrass Gazette*

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PRODUCTS

(continued from page 57)

and parking lots and a 54-inch snow blade which can be angled 30 degrees in either direction.

Along with the 60-inch and 72-inch mower decks available for the Front Line, the line of snow removal accessories makes the unit a versatile, year-round piece of equipment.

Circle 106 on reader service card

The Spanish Matabi Co. is introducing an all-new knapsack garden sprayer with a number of innovative features.

Thanks to an injection-molded 16-litre (4.2 U.S. gallon) tank, the entire K-16 sprayer weighs barely 3.4 kg, or less than 7½ pounds. The tank can also be inverted in seconds for right- or left-hand pumping. Ten easy pump strokes per minute maintain operating pressure, even fewer for weed spraying.

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ment hoses, valves, wands, nozzles, etc. are offered in attractive skinpacks.

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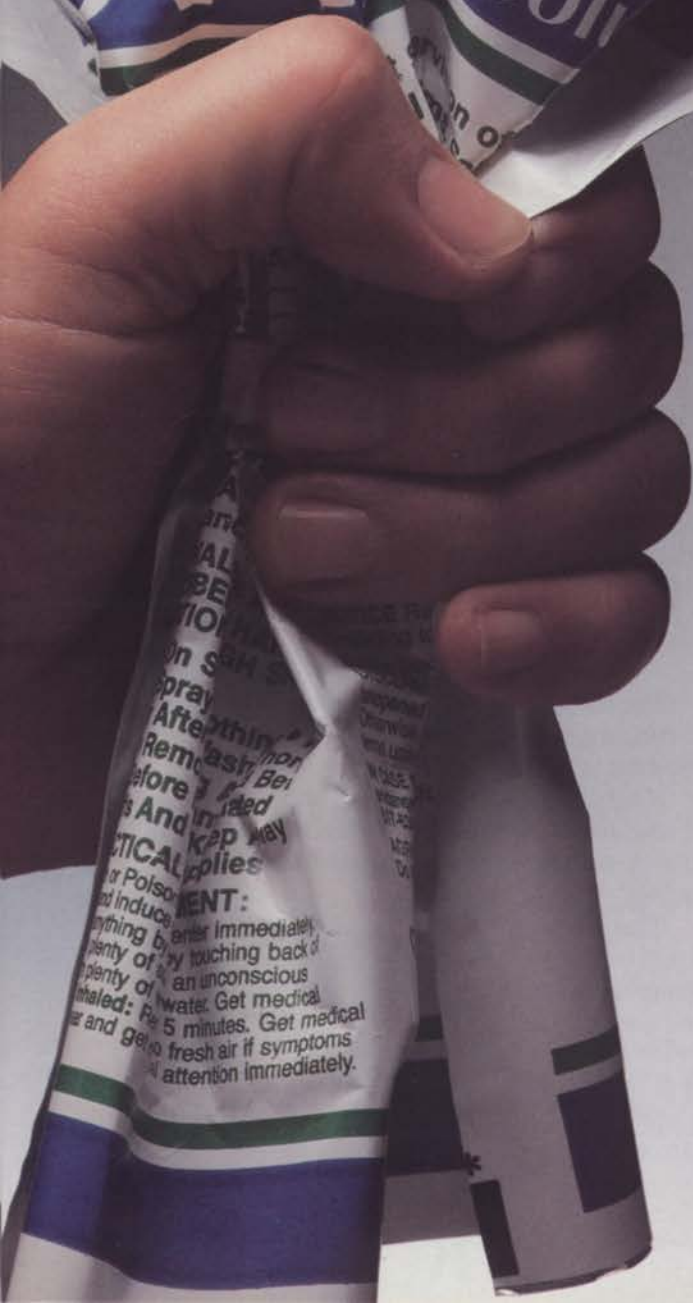
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With some insecticides, it's harder to get rid of the empty container than the bugs. Now Dow makes everything easier, with DURSBAN* 50W insecticide in water soluble packets.

Water-soluble packaging. DURSBAN 50W comes in pre-measured packets that dissolve quickly and completely. They're packed inside a foil pouch, which is disposed of easily.

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All that, and efficacy, too. No insecticide controls a broader spectrum of turf and ornamental insects than DURSBAN insecticide. And as a wettable powder, DURSBAN 50W has even more residual power than emulsifiable concentrates. There's no solvent, so there's no vaporizing or "flash-off" even on the hottest days. DURSBAN 50W stays where you apply it—won't migrate in the soil. And it has a proven human safety record.

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Attention: Always read the label before use and carefully follow all label directions and precautions.



DURSBAN* 50W

Circle 38 on reader service card





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