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SEPTEMBER 1985 • \$1.25

ALSO IN THIS ISSUE:

WEED SEEDS

CONTROLLING COSTS

CREATIVE FINANCING

VICTORY IN WAUCONDA

TOLERATING HERBICIDES

AERATION AGRONOMICS



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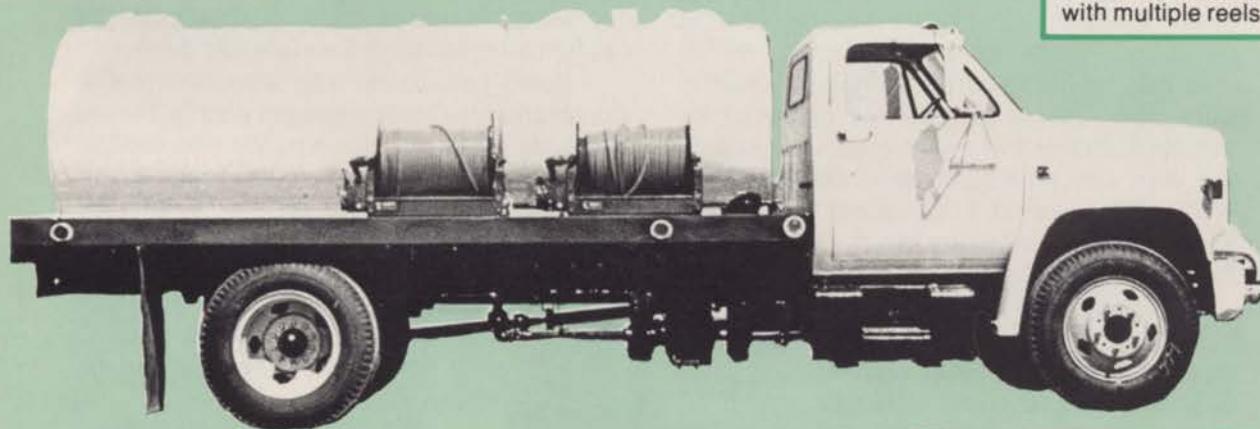
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ALA

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COVER

Your equipment is money in the bank (or safe) and you should treat it as such. The experts tell us there are no quick and easy ways to finance equipment, but there are steps you can take to ease the pain.

Model: Joseph Crusse
Photographer: Barney Taxell

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4. RENOVATION IN PROGRESS DAY 15



**1. SPRAY
DAY 1**



**2. SLICE
DAY 10**



**3. SEED
DAY 10**



**5. COMPLETED
RENOVATION
DAY 30**

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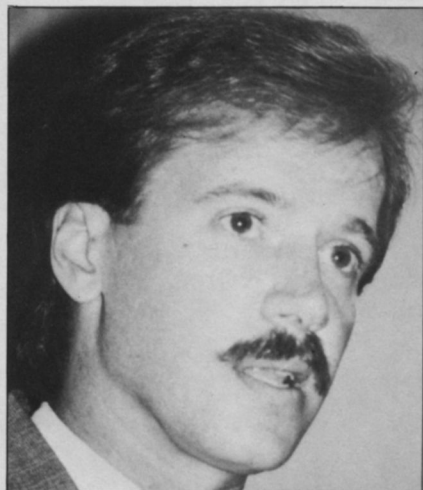
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VIEWS ACROSS THE LAWN CARE INDUSTRY

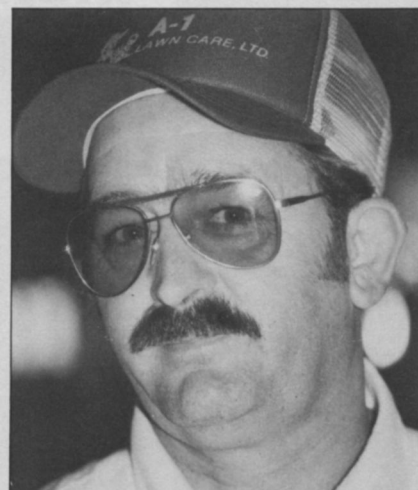
HOW BAD WAS THIS YEAR'S DROUGHT?



"Our lawns have stayed relatively green until the past three weeks here. Now with the rainfall we've been receiving lately, they are on their way to recovery. I've been doing this type of work for 10 years now and I've seen a lot worse as far as drought is concerned. We've maintained good color and soil moisture through most of the early summer right through the end of July." — **Steve Marshall, Davey Lawnscape, Akron, Ohio.**



"It was reminiscent of the Dust Bowl back in the 1920's in Oklahoma. There were actually drifts of dirt and sand by the backdoors. I am almost 50 years old and that is the first time I can recall anything like that. For a day, the sky was dark brown. From the early part of July to the early part of August, we had probably less than a half-inch of rain. Most people gave up on their lawns." — **Paul Begick, Begick Nursery, Bay City, Michigan.**



"This year we didn't have a lot of water. Things have been really dry. A lot of the problems this year are because of the people who don't irrigate, who don't have any sprinkler systems. For awhile, nobody watered and they would say, 'You killed my lawn.' If you just water, it starts turning green instantly. We got some rain recently, so our lawns are starting to green-up." — **Jesse Gargus II, A-1 Lawn Care, Ltd., Flint, Michigan**

CALENDAR

Sept. 17-18

Virginia Tech Turfgrass Research Field Days, Blacksburg, Virginia. Contact: J.R. Hall, Virginia Cooperative Extension Service, Virginia Tech, Blacksburg, Virginia 24061; 703/961-5797.

Sept. 27

Landscape Estimating Seminar, Holiday Inn, Columbus, Ohio. Contact: Richard Lambert, The Idea Bank, P.O. Box 23994, Tempe, Arizona 85282; 1/800/621-1136.

Sept. 29-Oct. 2

1985 Florida Turfgrass Association Annual Conference and Show, Curtis Hixon Convention Center and Hyatt Regency, Tampa, Florida. Contact: Bill Nass, Florida Turfgrass Association, 302 South Graham Avenue, Orlando, Florida 32803-6332; 305/898-6721.

Oct. 20-23

PGMS 73rd Annual Conference, Flagship Inn, Arlington, Texas. Contact: Allan Shulder, PGMS, 3701 Old Court Road, Suite

15, Pikesville, Maryland 21208; 301/653-2742.

Nov. 3-7

15th Educational Conference of the National Institute on Park and Grounds Management, Holiday Inn World's Fair and Convention Center, Knoxville, Tennessee. Contact: National Institute, Box 1936, Appleton, Wisconsin 54913; 414/733-2301.

Nov. 13-15

1985 Oklahoma Turfgrass Conference and Trade Show, Lincoln Plaza, Oklahoma City, Oklahoma. Contact: Turf Extension Specialist, Oklahoma State University, Department of Horticulture and Landscape Architecture, 360 Ag Hall, Stillwater, Oklahoma 74078.

Nov. 18-21

PLCAA Sixth Annual Conference and Trade Show, Curtis Hixon Convention Center, Tampa, Florida. Contact: Jim Brooks, PLCAA, 1225 Johnson Ferry Road NE, Suite B-220, Marietta, Georgia 30067.

Dec. 2-5

1985 Ohio Turfgrass Conference and Show, Cincinnati Convention-Exposition Center, Cincinnati, Ohio. Contact: John Street, Ohio State University, Cooperative Extension Service, Agronomy Extension, 2021 Coffey Road, Columbus, Ohio 43210-1086; 614/422-2601.

Jan. 22-24

Mid-Atlantic Nurserymen's Trade Show (MANTS), Baltimore Convention Center, Baltimore, Maryland. Contact: Mid-Atlantic Nurserymen's Trade Show, Inc., Perry Hall, Maryland 21128; 301/256-6474.

Jan. 28-29

1986 Horticulture Industries Show, Tulsa Convention Center, Tulsa, Oklahoma. Contact: Turf Extension Specialist, Oklahoma State University, Department of Horticulture and Landscape Architecture, 360 Ag Hall, Stillwater, Oklahoma 74078

Submit events to ALA, 4012 Bridge Avenue, Cleveland, Ohio 44113.

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Start off with the big 1200C Fiberglass Tank. It holds a whopping 1130 gallons. And its attractive cylindrical shape makes for easy mounting on your flatbed truck, or conveniently mount it directly to your truck frame by using the mounting legs. Plus, the 1200C can be

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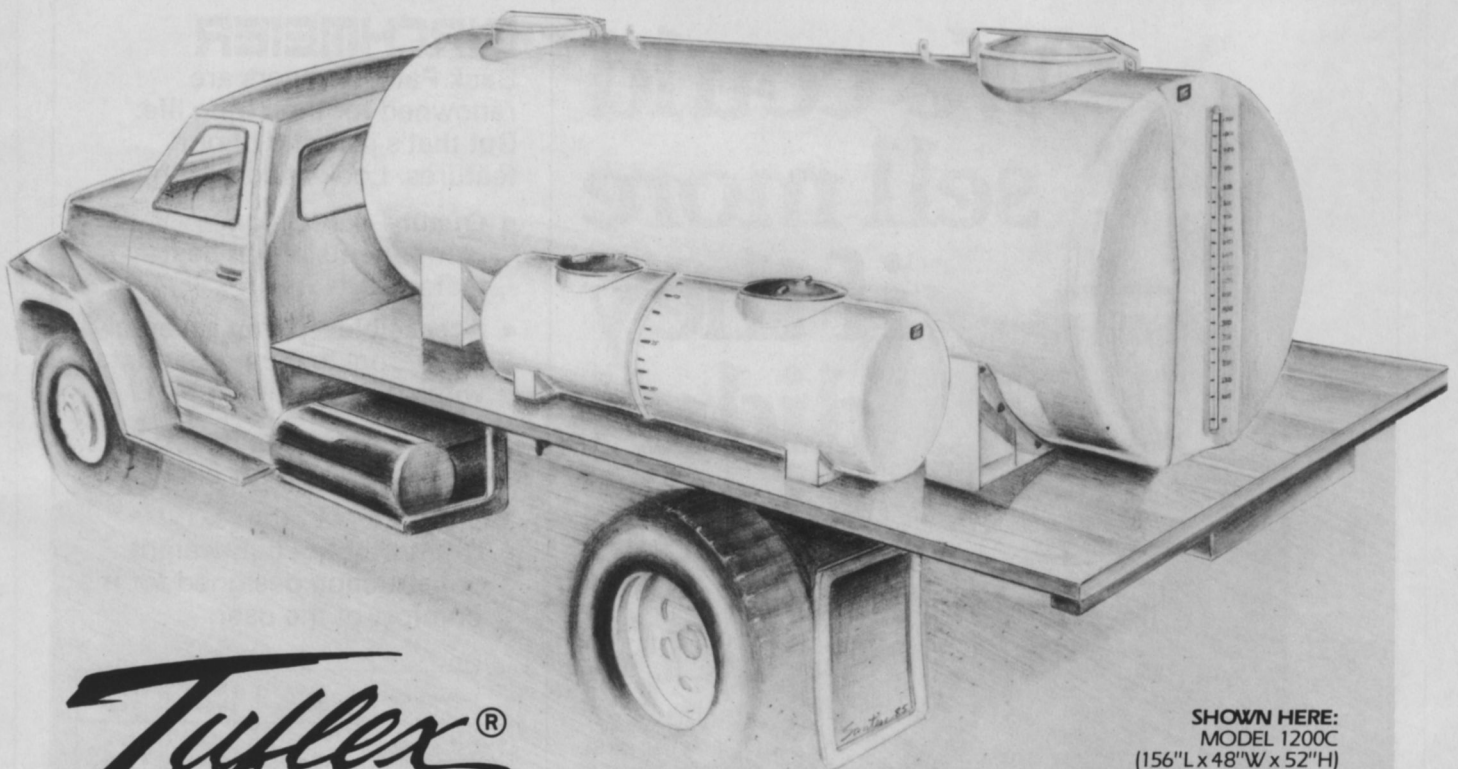
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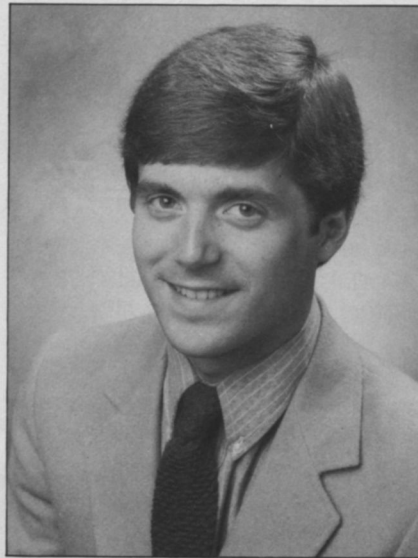
For more information on our complete line of seamless fiberglass tanks, call toll-free 1-800-327-9005. In Florida call collect (305) 785-6402.

INSIDE STORY

This month, our cover story addresses a topic you have no doubt wrangled with before. In "Equipment as Capital" we discuss equipment financing possibilities with some experts in the field. We got the low-down on buying and leasing lawn care spray rigs from equipment manufacturers and leasing company executives. You already know how difficult it can be to finance equipment, but perhaps this article will provide you with a few pointers for your next trip to the bank.

In a related article also in this issue, Assistant Editor Vivian Fotos Rose reports on "Controlling Costs." Everything from preventative maintenance to routing is covered in this article. This article doesn't have an answer to every question, but you should pick up some tips that will help you streamline your operation.

And we are pleased to report some good news for a change from the pesticide regulatory battlefield. The protracted court battle between the Village



of Wauconda, Illinois and members of the Pesticide Public Policy Foundation (3PF) has finally ended with a "Victory in Wauconda." The judge declared the Wauconda pesticide ordinance invalid

and in this article we talk with some of the principals involved and probe the ramifications of this win for the lawn care industry.

As always, we have an interesting and informative selection of technical articles for you from some of the country's most respected turf researchers. "Tolerating Herbicides" is written by B.J. Johnson of the Agronomy Department at the University of Georgia. "Aeration Agronomics" is written by P.E. Rieke of the Crop and Soil Sciences Department at Michigan State University. "Weed Seeds" is written by Eliot Roberts, Director of The Lawn Institute. Enjoy!

Jim Weidner

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Tank Capacity	2.6 gals.	3.9 gals.	5.2 gals.
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Title _____

Company Name _____

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Signature _____

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- Chemical Lawn Care Company
- Mowing/Maintenance Service
- Pest Control/Lawn Service Company
- Landscape/Maintenance Contractor
- Nursery or Garden Center/Lawn Service Company
- Other (please describe) _____

Grounds Care/Maintenance for ONE of the following:

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- School, College, Hospital
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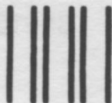
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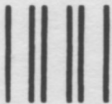
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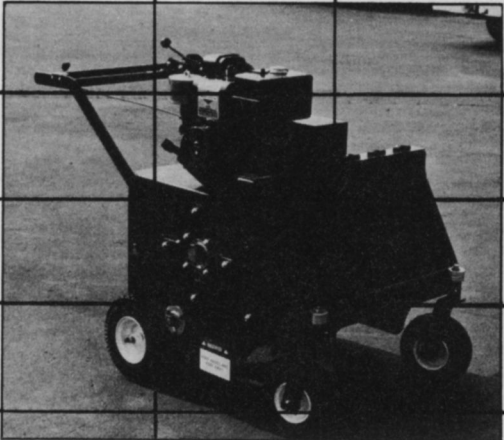
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LETTERS

ERODED ETHICS

In your editorial message of June, 1985, your publication discussed the importance of knowing how one's business stands up to the competition. While this point is well-taken, tremendous difficulty arises when one is pitted against other lawn care companies whose methods of customer acquisition are not merely questionable, but blatantly deceptive. It is for the following reasons that I respectfully request that you print this letter.

The Professional Lawn Care Association of America has adopted a revised Code of Ethics which includes a pledge to "...refrain from unfair business practices by striving to: maintain a reputation for fair and honorable conduct with customers, employees, and suppliers; conduct business on the basis of service to the public; and to avoid false, misleading or deceptive advertising." Regretably, it must be recognized that some among us fall far short of this standard.

As a lawn care professional for over 33 years, I have witnessed the business grow to one of respectable professionalism, only to deteriorate into a sheer numbers game. Of greatest concern are the methods employed by some of the larger lawn care corporations for acquiring customers and destroying the marketplace. Granted, free enterprise is founded on longstanding principles of competition, however, certain standards of fair play and honesty must be established and observed if the business as a profession is to maintain any level of credibility at all.

My concerns stem from blatantly dishonest practices I have witnessed in the central Illinois area. (Recognizing that discretion is the better part of valor, the following citations of deviant business behavior will not be attributed to their rightful perpetrators. Surely, they will recognize themselves.)

The first is the practice of undermeasuring the dimensions of a potential customer's property. Where two lawn services have truly competitive rates,

the one that undermeasures the area to be serviced causes the customer to be deceptively persuaded into choosing the "cheaper" service. Not only is the client shortchanged as the amount of material he ends up paying for will not adequately cover his lawn, but the other company that is trying to compete and estimates a client's lawn honestly and fairly is denied an opportunity to do business. Such practices are tantamount to lying to the customer and ought not be tolerated.

A second example involves pressuring customers who are already contracted with a lawn care service into cancelling their contract by telling them that they (the new service) will handle the cancellation for them. An employee of the second lawn service then calls the first and represents himself *as the client* and advises of the cancellation. How do I know this? Because on at least two occasions, we received calls wherein the caller identified himself as Mr. X, when in actuality the true client was a widow and Mr. X had been dead for years!

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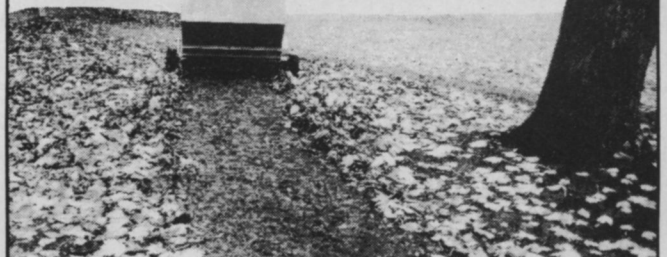
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A third example that occurred in the Champaign, Illinois area concerned an employee soliciting business with the client of another service. When the customer advised the salesman he was already signed up with a service, the salesman told him the customer's old service had gone out of business. Perceptively, the customer went along with the scam, then called his lawn care service to discover what he had suspected all along — his service was alive and well and ready to work for him on an honest and fair basis.

In the Moline, Illinois area, the same lawn service as described in the third example above deliberately and knowingly applied fertilizer to a five acre tract that my company had under contract. They then proceeded to call our office to tell us what they had done. One has to wonder what measure of supervision, if any, is exercised?

Time and space do not permit, but virtually endless examples could be cited including that estimate and re-estimate lawns with vast price and measurement disparity on the same lawn. And others whose employees are so pressured to secure new clients that service and complaint calls never receive a response.

There is absolutely no justification for such practices to be tolerated in an industry that once was very professional. The only explanation can be that the sales representatives are under directives from their superiors to do whatever it takes to make the sale or be faced with termination of their employment.

Must we all sink to the level of unethical behavior that is presently being injected into the industry in order to survive? It would be degrading to think that a man could only make a living by engaging in deceptive, unscrupulous practices. It is up to the true lawn care professionals to restore and to maintain the high level of excellence and professionalism that once was taken for granted and, by reasonable measures, to remove the cancer that has invaded the industry.

C.M. Dailey
Director

Liqui-Green Lawn Care Corp.
Peoria, Illinois

TECH TYPOS

Thank you for printing my articles on spreader application in your July issue.

I did notice two small errors that

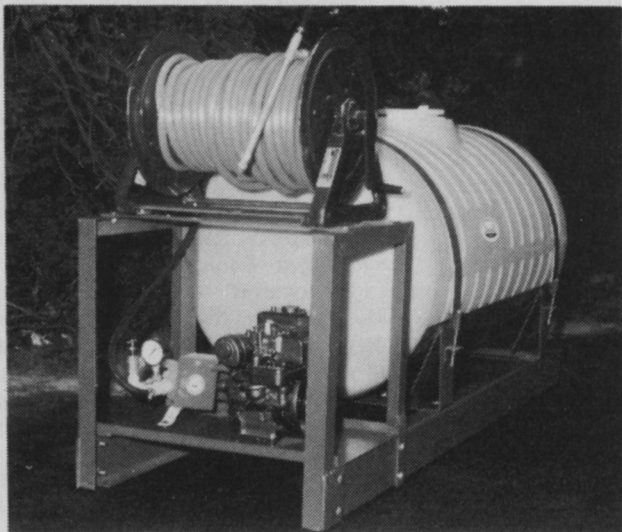
crept into the articles during typesetting. In "A Spreader Innovation," the top of the second column is a statement that particles are thrown "off in a direction that is tangential." This is not quite true. My manuscript stated "in a direction that is close to tangential." This is a technical detail that only a spreader engineer would notice, but you should be aware of this in case any of your readers question it.

In "Spread It Right," a more important error is present. In the results section, everywhere I referred to $X_{min}/2$ or $X_{max}/2$, the text was changed to read $X_{min}(\text{squared})$ and $X_{max}(\text{squared})$. This may cause considerable confusion among your readers.

Again, thank you for printing my articles.

Richard Parish
Louisiana State University
Department of Agricultural Engineering
Baton Rouge, Louisiana

Letters to the editor should be mailed to: Letters Department, ALA magazine, 4012 Bridge Avenue, Cleveland, Ohio 44113. We reserve the right to edit letters for reasons of space or clarity. ■



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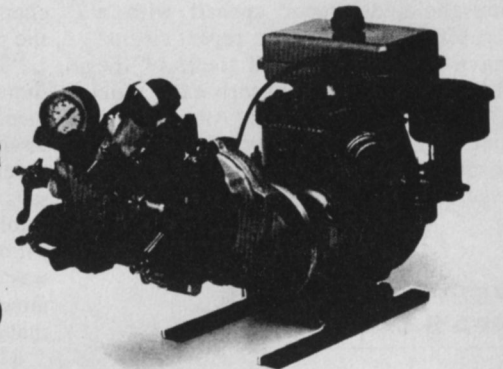


FIELD MACROSCOPE

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- Insect Identification - grubs and nematodes

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NEWS IN BRIEF

CLEAN UP SPILLED PESTICIDES SAFELY

Spills of pesticides around the shop or job site can create a dangerous situation. But following a few safety tips can minimize problems, says L.M. English, extension entomologist at New Mexico State University. Immediately ventilate the area of the spill by opening doors and windows or setting up a fan, says English.

"Many pesticide formulations have petroleum carriers and the chemical forms may catch fire; that is why we don't store chemicals around pilot lights. Don't light matches," English warns. If necessary, set up a barrier to keep pets and children away. Don't let the chemicals be tracked around the premises. Then, begin cleaning up as soon as possible to minimize health exposure and possible problems with stains and odors. English recommends wearing rubber or neoprene gloves, keeping the rest of the body covered, and avoid breathing vapors.

Spilled solids should be swept into a plastic bag. Spilled liquids should first be soaked up with an absorbent material such as cat litter, paper towels or old rags. The soaked material should then be placed in plastic bags, sealed and disposed of at approved disposal sites.

Next, scrub wood, cement or tile surfaces with a water solution of strong household detergent applied with a scrub brush or old rags; repeat cleansing with detergent until traces of the chemical are gone. Absorb each time with absorbent material. All clean-up materials should be discarded in disposable containers such as sealed plastic bags.

KELTHANE CLEARS EPA'S GAUNTLET

The tree and ornamental miticide dicofol, the generic name of Kelthane® from Rhom and Haas Company, has undergone review by the Environmental Protection Agency. "The EPA concurs that dicofol, or Kelthane, does not appear to be a threat, as they had originally thought," says Rhom and Haas' Mike Turner. However, the EPA has stipulated that Rhom and Haas, as a key manufacturer of dicofol, continue to reduce the levels of impurities in the product. Turner says impurity levels



currently meet the first plateau of criteria set up by EPA.

"We anticipate that by the next deadline, which is sometime in 1987, we will have it down to a finite level of impurity," states Turner. That finite level is 1/10 of 1 percent. Kelthane currently contains roughly 5 percent impurities. "Doing that is going to require some changes in the way we go about making the product," says Turner.

"The issue was raised by EPA in the first place because of their concern that dicofol might represent a threat to the environment, particularly to birds, based on a computer model they did," says Jack Pounds, Rhom and Haas' Public Relations Manager. "The model estimated that the use of the product was a potential hazard because it contained a trace amount of DDT-related material."

Rhom and Haas disagreed with the EPA's conclusions and developed a scientific package to refute the Agency's findings. Pounds says Rhom and Haas presented the package in April to the EPA's Scientific Advisory Panel, which is staffed by an independent group of scientists. "The Scientific Advisory Panel recommended that the agency maintain the registrations for Kelthane miticide and at the same time recommended that certain label changes be made to require applicators to wear protective clothing, primarily

impervious gloves," says Pounds.

Meanwhile, the presence of DDT-related materials in Kelthane has become more of an issue in the state of Wisconsin. The Wisconsin state legislature has banned the sale and use of dicofol-containing products as of June 1985. Wisconsin has a regulation on their books which states that any material containing any amount of DDT or DDT-related materials will be banned, according to Pounds. "We would like to get together with the people up there, present the scientific data to them, and urge them to reconsider that decision," says Pounds. However, he admits that the company's major consideration right now is the continued stability of Kelthane's registration status for the entire United States, particularly in the major use states of Florida, California, Texas, and Arizona.

Still, Rhom and Haas isn't too worried about Kelthane's life expectancy. "We're confident the product will remain on the market for growers in the future," says Mike Turner.

LAWN INSTITUTE IS 30 YEARS OLD

A lineal descendant of such organizations as the Missouri Valley Blue-Grass Seed Growers Cooperative Associa-

tion, formed in the early 1930s, the present Lawn Institute was chartered in 1951 as the Bluegrass Research Institute to meet and answer requests for information on lawn and turf development. In a short time, the founding fathers realized that a public service program was needed and that activities could not be confined to any single grass.

At a late fall meeting in 1954, Institute President Joe Peppard of Kansas City's Peppard Seeds, Inc., discussed this issue. Committees were appointed and reorganization work began. On April 9, 1955, the members of the Bluegrass Research Institute voted unanimously to change the name and establish a permanent central office at 2233 Grand Avenue, Kansas City, Missouri, gather together books and pamphlets there for a library, and hire a staff.

Al Mangelsdorf of Ed F. Mangelsdorf and Brother, Inc., St. Louis, moved "that the name of the organization be changed to 'Better Lawn and Turf Institute.'" The motion was seconded by Ed Spears of Woodford Spears and Sons, Paris, Kentucky. At that time, the new Institute was pledged to a definite five year program of public service.

The Institute, located now in Pleasant Hill, Tennessee, is publishing a series



of lawn aid articles, pamphlets, information brochures, newsletters and press kits to aid in the improvement of America's grasslands, whether they be home lawns, parks, golf courses, air fields, cemeteries or athletic fields.

HOME MECHANIX MAG PLANS MOWER SECTION

Home Mechanix magazine (formerly *Mechanix Illustrated*) is planning to add a special section on lawn mowers and lawn maintenance in an early 1986 issue. According to Larry Craven, Western Advertising Director for *Home Mechanix*, the magazine has

changed its focus from "basement tinkerers" to "home managers" to meet changing consumer needs. He adds that the special section is currently scheduled to be 16 pages in length. A freelance editor/writer familiar with the industry is scheduled to be hired for the project, according to Craven.

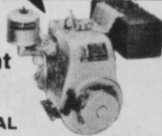
NEBRASKA LAWN CARE ASSOCIATION FORMED

The Nebraska Professional Lawn Care Association (NPLCA) has been organized as of July 1, 1985 to serve the rapidly expanding lawn care industry in Nebraska. Leaders in the lawn care profession recognized the need to form an association to provide for the education of the public and members, advocate professional lawn care, and encourage professionalism within the industry.

Serving the NPLCA as Officers are: President, Dale Amstutz, Northern Lawns, Inc., Omaha; Vice President, John Skomal, Custom Lawns of Omaha, Omaha; and Secretary-Treasurer, Richard Penn, Lawncow Lawn Service, Lincoln. Serving as Board of Directors are: Rich Mulder, UAP Special Products, Omaha; Terry

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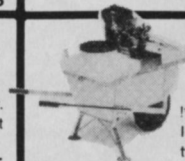
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Item #47016.....Lists for \$140.00.....\$83.95

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Anderson, Lawnscape Grounds Maintenance, Lincoln; Gary Carstens, World of Green, Lincoln; and Tom Urbaneck, Urb's Lawn Service, Kearney.

These officers and directors will serve through 1985 until elections are held at the first annual meeting of the NPLCA in January 1986. Named as Executive Director of NPLCA is Don Ellerbee of Garey Management Organization, Inc. of Hastings, Nebraska. For membership and information, contact: Nebraska Professional Lawn Care Association, 209 West 9th Street, Hastings, Nebraska 68901, or call 402/463-5691.

EQUIPMENT EXPO DRAWS RECORD ATTENDANCE

An unqualified success — that is what 14,500 participants are calling the International Lawn, Garden, and Power Equipment Expo '85 held in Louisville, Kentucky on July 29-31. By noon of the first day, said Show Director P. Stephan Phelps, attendance at the Expo had already matched the number of buyers who had turned out for the full three days of the premiere Expo in 1984. When this year's show opened, the number of exhibits had grown from 210 last year to 400 this year.

"Many of the new exhibitors were

manufacturers of lawn and garden items," said Phelps. "That provided us with a broad, cross-section of outdoor products to draw the real buying power of the industry." Commenting that there is no end in sight for the growth of the show, Phelps said that during the Expo requests for exhibit space had been received from at least 25 manufacturers who were present as atten-

dees, and several exhibitors had indicated that they would like to increase their space next year.

In addition to exhibit space indoors, about 160 exhibitors set up demonstrations outside in the Expo's 450,000-square foot demonstration area. Foreign buyers arrived from 25 countries to seek American-made outdoor products to be used by their governmental



Indoor trade show hall at the Equipment Expo '85.



Outdoor exhibit area at the Equipment Expo '85.



Former football great Dick Butkus was named Echo, Inc.'s spokesman at the Expo.

agencies and to be sold to international consumers. Dealers interested in learning to expand their repair capabilities ventured to a "Tools of the Trade" exhibit, sponsored by the Engine Service Association, Inc. Twice each day, technical directors from Briggs and Stratton, Kohler, and Tecumseh demonstrated techniques and specialized engine tools used to repair gasoline engines.

For thousands of the exhibitors and attendees, a highlight of the Expo's special events was the Great Kentucky Cookout led by legendary comedian Bob Hope and country/western singer Lynn Anderson. A buffet of traditional Kentucky cookout fare was offered, and Anderson made what she called her most unique entrance — on a riding mower. For an hour, Hope regaled the crowd with songs, joked about lawn work, and about Kentucky, and even gave a little sample of his soft shoe routine.

LAWN INSTITUTE SELECTS PROPRIETARY TURFGRASS

The Lawn Institute's Variety Review Board each year evaluates the performance of proprietary cultivars based on local, regional, and national turf trial data. With some 300 grasses under evaluation, there is a wealth of excellent material from which to choose. The

turfgrasses are each sponsored in the competition by an interested seed firm. These firms represent the leading turfgrass seed producers and suppliers in the country. Not all of their proprietary grasses are entered with The Lawn Institute. Those that are entered have all had excellent performance records.

For the fall planting season, 40 turfgrasses have been selected. Bluegrass cultivars were sponsored by 10 seed firms. Arboretum represents the wealth of broad genetic base characteristic of natural Kentucky bluegrasses. Other bluegrass cultivars feature improved shade tolerance and disease resistance. They are highly uniform in appearance, vigorous, and excellent in sod and turf forming characteristics. These 14 grasses provide the basis for continuing confidence in bluegrass lawns:

- Adelphi, J&L Adikes
- America, Pickseed West
- Arboretum, Mangelsdorf Seed Company
- Baron, Loft's, Inc.
- Eclipse, Turf Cultivars Associates
- Fylking, Jacklin Seed Company
- Glade, Jacklin Seed Company
- Merit, Full Circle
- Monopoly, Peterson Seed Company
- Nassau, Jacklin Seed Company
- Ram I, Loft's, Inc.
- Rugby, Seed Production and Introduction Corporation
- Sydsport, E.F. Burlingham and Sons
- Touchdown, Pickseed West

Fine fescues representing Chewings, creeping, and hard types were sponsored by three seed firms. These grasses are among the best in mixtures with bluegrasses. They add a degree of hardiness to the lawn that is especially important when emphasis is placed on low maintenance.

- Banner, Chewings, E.F. Burlingham and Sons
- Ensylva, creeping, International Seeds
- Jamestown, Loft's, Inc.
- Koket, Chewings, E.F. Burlingham and Sons
- Reliant, hard, Loft's, Inc.

Turf-type perennial ryegrasses were sponsored by nine seed firms. These grasses are increasing in popularity each year. Rich, dark green leaves with shiny undersides produce a fine textured turf of excellent quality when used in mixtures or alone. Improved heat, drought, and cold tolerance provide a wide range of adaptation. Increased insect and disease resistance is leading to lower maintenance costs than thought possible. Grooming has

been made easier as these grasses tolerate lower clipping heights and cut more evenly during late spring growth periods.

- All Star, J&L Adikes
- Citation, Turf-Seeds
- Delray, Northrup King and Company
- Derby, International Seeds
- Elka, International Seeds
- Fiesta, Pickseed West
- Manhattan II, Turf Merchants, Inc.
- Omega, Turf-Seeds
- Pennant, E.F. Burlingham and Sons
- Pennfine, Seed Production and Introduction Corporation
- Regal, International Seeds
- Repell, Loft's, Inc.

Turf-type tall fescues were sponsored by five seed companies. These grasses, originally bred for the transition zone between north and south where growth conditions are often unfavorable, have found wide use even up into more northern regions. The stress environment is not restricted to the transition zone and thus turf type tall fescues are meeting a broader need than that recognized at first. Improved sod density and spreading growth characteristics combined with excellent root development make these grasses among the easiest to maintain.

- Clemfine, Loft's, Inc.
- Falcon, E.F. Burlingham and Sons
- Galway, Northrup King and Company
- Houndog, International Seeds
- Mustang, Pickseed West
- Rebel, Loft's, Inc.

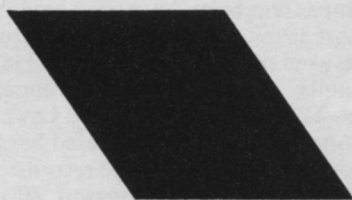
Two specialty grasses are recognized. *Poa trivialis* has a special place of prominence in moist shady locations. Where used, there is nothing better nor easier to maintain. Canada bluegrass is ideal for locations where a semi-turf that will be mowed only occasionally is required.

- Sabre, *Poa trivialis*, International Seeds
- Reubens, Canada bluegrass, Jacklin Seed Company

For more information on these lawn-grasses, contact The Lawn Institute, P.O. Box 108, Pleasant Hill, Tennessee 38578.

LAWN CARE LECTURES ON NJ COMMUTER TRAIN

Usually, as the train pulls out of the Newark, New Jersey rail station and makes its way to New York, the morning chatter centers on last night's baseball game or the latest stock market



etc.) in the left-hand column. Then locate the desired amount of active ingredient per acre (1, 2, 4, 5, or 10 pounds) which is displayed across the top of the columns. The figure given where the two columns intersect within the table is the correct amount of formulated product to apply on a per-acre or per-1,000-square-foot basis."

ARIENS ACQUIRES PROMARK PRODUCTS

The Ariens Company, manufacturer of outdoor equipment, announced its plans to acquire Promark Products, Inc., located in City of Industry, California. Promark manufactures outdoor power products for the tree-related industry, including stump grinders, shredder-chippers, and aerial lifts.

"We feel Promark's product line compliments our growing line of products for the commercial and consumer lawn and garden market," says company President Michael Ariens.

Promark will become a wholly-owned subsidiary of Ariens Company upon receipt of governmental approval. Ariens also owns Gravely International, Inc., of Clemmons, North Carolina, a manufacturer of commercial and consumer two- and four-wheel lawn and garden tractors. ■

news on Wall Street. But, during May and June, the main topic of discussion was lawn care. Dr. Henry Indyk, specialist in turfgrass management at Rutgers University's Cook College, gave tips to commuters on how to take care of their lawns.

The seminars are part of an on-board lecture series offered by NJ Transit, New Jersey's statewide public transit corporation. NJ Transit began the innovative program in January 1984, as a way of making commuting more productive and interesting for the corporation's 60,000 rail commuters.

The lawn care lecture, which was held on four different rail lines, was a popular one with riders. It was also very topical since the Rutgers professor offered tips on how to maintain lawns with little watering since most communities in New Jersey have restrictions due to the water shortage. In all, more than 400 commuters took advantage of the seminars, which were held in one designated rail car. "It certainly was a *moving* experience," joked Indyk. "It's a great idea and it's probably the most unusual place I've given a lecture."

A portable podium and microphone was set up in front of the car so everyone could hear. Indyk talked about the use of lime, the best time to water and fertilize the lawn, and proper mowing. He also passed out brochures developed by Rutgers. The commuters certainly enjoyed the lecture. The last 10 minutes of the 45-minute talk were devoted to questions, and commuters continued to ask questions long after the train had pulled into the station. Because of the popular response, more lectures on lawn care are scheduled for the fall.

PROFESSOR POWELL'S 'PESTICIDE MATH'

In a recent installment of Ohio State University's Cooperative Extension Service newsletter, "Plant Pathology Notes," author and Extension Coordinator, C.C. Powell, writes, "In most of my writings on pesticide dosage calculations, I have tended to avoid the 'active ingredient per' syndrome. This

is because most labels give use instructions with dosages given for the formulation to be used. The amount of active ingredient in the formulation is, of course, the key to the dosage calculation. The manufacturers generally make the appropriate conversions."

"Extension literature and labels promoting surface treatments or low volume applications often give dosages in terms of active ingredient per unit of surface area (e.g. per acre). This can create computation confusion and errors, especially when areas less than one acre are being treated. To simplify calculations, the following information is summarized from the '1984-85 Cornell Recommendations for Trees and Shrubs'."

"Table 1 lists the amount of various formulated materials necessary to apply the correct amount of active ingredient per acre or per 1,000 square feet. To use the table, first locate the type of formulation being used (2G, 80WP,

Formulation	Amount of formulation per acre or per 1,000 sq. ft.				
	(acre figures)				
	(1,000 sq. ft. figures)				
	1 lb a.i. per acre	2 lbs a.i. per acre	4 lbs a.i. per acre	5 lbs a.i. per acre	10 lbs a.i. per acre
1G	100 lb	200 lb	400 lb	500 lb	1000 lb
2G	2 lb 5 oz	4 lb 10 oz	9 lb 3 oz	11 lb 8 oz	23 lb
	50 lb	100 lb	200 lb	250 lb	500 lb
5G	1 lb 2 oz	2 lb 5 oz	4 lb 10 oz	5 lb 13 oz	11 lb 8 oz
	20 lb	40 lb	80 lb	100 lb	200 lb
10G	7 oz	15 oz	1 lb 14 oz	2 lb 5 oz	4 lb 10 oz
	10 lb	20 lb	40 lb	50 lb	100 lb
1 EC or FL	4 oz	8 oz	15 oz	1 lb 3 oz	2 lb 5 oz
	1 gal	2 gal	4 gal	5 gal	10 gal
2 EC or FL	3 oz	6 oz	12 oz	15 oz	29 oz
	2 qt	1 gal	2 gal	2.5 gal	5 gal
4EC or FL	1.5 oz	3 oz	6 oz	7.3 oz	15 oz
	1 qt	2 qt	1 gal	1.25 gal	2.5 gal
50WP or SP	.75 oz	1.5 oz	3 oz	3.7 oz	7.5 oz
	2 lb	4 lb	8 lb	10 lb	20 lb
75 WP or SP	.7 oz	1.5 oz	3 oz	3.7 oz	7.3 oz
	1 lb 5 oz	2 lb 11 oz	5 lb 5 oz	6 lb 11 oz	13 lb 5 oz
80 WP or SP	.5 oz	1 oz	2 oz	2.5 oz	4.9 oz
	1 lb 4 oz	2 lb 8 oz	5 lb	6 lb 4 oz	12 lb 8 oz
	.5 oz	.9 oz	1.8 oz	2.3 oz	4.6 oz

Table 1. Amounts of formulated materials to apply correct active ingredient per acre or per 1,000 square feet.

Professional Lawn Care Association of America Conference and Show/Tampa, Florida/November 18-21, 1985

WIN, PLACE, AND SHOW WITH PLCAA/TAMPA '85!



WIN...

How can you lose? Take the warmth of Tampa's sunshine, stir in some Southern hospitality, combine it with PLCAA's 1985 Conference and Show, and you have **PLCAA/Tampa '85**—the winning combination for any lawn care businessman. Join the hundreds of your fellow professionals who make PLCAA's annual conference and show the one must event of the year.

You can't afford to miss the dynamic lineup of speakers and workshops offered at PLCAA/Tampa '85. The Conference opens Monday, November 18th, with a repeat of the popular "Early Bird" Workshops. The topics for this year's "Early Bird" Workshops are "Writing Your 1986 Marketing Plan" and "Supervisory Leadership."

The 1985 educational program, scheduled for Tuesday, November 19th and Wednesday, November 20th, features in-depth, useful technical and management information designed to help your business succeed. Program highlights are:

- Industry Operating Ratios
- Ornamental Spraying and Feeding
- "What's Your Business Worth?"
- Practical Agronomic Issues
- Mowing/Maintenance Management
- Keys to Obtaining Financing
- Automated Scheduling
- Pesticide Safety
- Increasing Profits
- Developing Good Promotional Copy
- Toxic Waste Disposal — An Update

PLACE...

Tampa, one more time! 1985 marks the second straight year that Tampa plays host to PLCAA's Annual Conference and Show. Tampa is the fun center of the South, featuring a host of historical, cultural, shopping, and entertainment attractions. Continental restaurants and first-class hotels make the visitor feel welcomed, pampered, and relaxed. The many major tourist attractions within easy driving distance of downtown Tampa include: Busch Gardens, Walt Disney World, Epcot Center, Sea World of Florida, and Ringling Circus Hall of Fame.

EARLY BIRD REGISTRATION AND RECEPTION

Make plans to arrive Monday, November 18th, and take advantage of the Early Bird Registration and Reception Theme Party (6:30 to 8:30 PM Tampa Hyatt Regency. Open to general registrants only).

NEW! OUTDOOR EQUIPMENT DEMONSTRATION!

A new feature of **PLCAA/Tampa '85** will be an outdoor equipment demonstration, 9:00 AM to 1:00 PM, Thursday, November 21. See all the big equipment suppliers put their new models through the paces under real working conditions. If it's new and exciting, it will be at **PLCAA/Tampa '85** and be operating!

SHOW...

This is your show! Over 150 booths will occupy the main exhibit hall of the Curtis-Hixon Tampa Convention Center, promising the biggest display of lawn care's best and the brightest in Show history. See the new and exciting products and services that will shape the future of lawn care. **PLCAA/Tampa '85** is your best opportunity to get the "hands on" knowledge so crucial for smart buying decisions. Exhibit hours are Tuesday, November 19th, 10:30 AM to 1:00 PM and 3:30 PM to 6:30 PM (trade show exclusive); and Wednesday, November 20th, 10:00 AM to 6:00 PM (trade show open).



ROCKY BLEIER
PLCAA/TAMPA '85
KEYNOTE SPEAKER

Former Pittsburgh Steeler great **Rocky Bleier** will kick-off **PLCAA/Tampa '85** as the keynote speaker on opening day (November 19, 1985). The spirit that enabled Rocky Bleier to overcome crippling wounds suffered in Vietnam and become a Super Bowl hero is reflected in his ability to inspire effort and commitment from others. Don't miss this dynamic speaker!

REGISTER NOW AND SAVE! FILL OUT AND RETURN THE REGISTRATION FORM ON THE OTHER SIDE OF THIS PAGE!



MAIL TODAY



Professional Lawn Care Association of America
PLCAA/TAMPA '85 ADVANCE REGISTRATION

COMPANY NAME (Please Print) _____

STREET ADDRESS _____

CITY _____ STATE/PROVINCE _____ ZIP _____

TELEPHONE _____

CIRCLE ONE	LAST NAME (Use a separate line for each person attending, attach list of additional names)	First Name or Nickname
MR./MRS./MS.	_____	_____
MR./MRS./MS.	_____	_____
MR./MRS./MS.	_____	_____

I/WE will arrive on: SUN (17th) MON (18th) TUES (19th) OTHER _____ I/WE will arrive by: AIR CAR

EARLY BIRD WORKSHOPS – Monday, Nov. 18. 1:00–4:30 p.m., Curtis Hixon Convention Center. Open only to full general registrants.* Sessions run concurrently, so you must select only one for each individual attending.

Writing Your 1986 Marketing Plan (open to owners, planners, general managers, etc.)

Number planning to attend _____

Supervisory Leadership (open to branch managers, middle management, etc.)

Number planning to attend _____

ADVANCED REGISTRATION FEE SCHEDULE – ON-SITE FEES WILL BE HIGHER

- PLCAA Members: \$65.00 per person (general registration)* No. attending _____ x \$ 65. = \$ _____
- Non-members: \$115.00 per person (general registration)* No. attending _____ x \$115. = _____
- Spouse: \$25.00 (general registration)* No. attending _____ x \$ 25. = _____
- Spouse program: \$40.00 (Wednesday only) No. attending _____ x \$ 40. = _____
- Distributor/Dealer: \$25.00 per person No. attending _____ x \$ 25. = _____
(Please attach business card with this form)
- One day Trade Show (Tuesday only) \$25.00 per person No. attending _____ x \$ 25. = _____
- One day Trade Show (Wednesday only) \$25.00 per person No. attending _____ x \$ 25. = _____

Florida Recertification Seminar. Monday only,
Tampa Hyatt Regency, 1:00–4:30 p.m.
(\$20 PLCAA members, \$40 non-members) No. attending _____ x Amount \$ _____

Please enclose check. Make checks payable to PLCAA. **TOTAL \$** _____

Detach form and mail to:

Professional Lawn Care Association of America
1225 Johnson Ferry Rd., NE, Suite B-220
Marietta, GA 30067
Telephone (404) 977-5222

- Please note:**
- Any cancellations must be in writing.
 - \$20.00 non-refundable per registration.
 - No refund given after October 31, 1985.
 - Advanced reservations will not be acknowledged after October 31, 1985.

*General registration includes Monday Early Bird Reception (free food, wine and beer), educational sessions, coffee breaks, trade show, and outdoor equipment demonstration.

HOTEL RESERVATION INFORMATION
You will be sent hotel reservation cards upon receipt of this advanced registration form by PLCAA. Please check your preference of hotels:

- Hyatt Regency/Show Headquarters (\$68. single, \$68. double)
- Harbor Island (\$72. single, \$72. double)
- Holiday Inn (\$42. single, \$47. double)

This is not a registration form. Reservation cards must be mailed directly to the hotel. Do not send money to PLCAA for hotel accommodations. Hotels will take reservations by telephone only after October 26, 1985.

PLCAA UPDATE

Whether you plan to be an exhibitor or attendee at PLCAA/Tampa '85, the Professional Lawn Care Association of America's sixth annual conference and show, it promises to be both educational and recreational.

The conference will be held in Tampa, Florida, from November 18-21. The reservations for exhibit space are already exceeding preregistration figures for last year's show at this time. A total of 96 exhibitors have requested booth space. This is over 70 percent of the available floor space in the main hall of Tampa's Curtis Hixon Convention Center. Last year's conference and show attracted 136 exhibitors and 1,600 attendees.

Delta Air Lines, in cooperation with the PLCAA, is offering a special 35 to 40 percent discount off Delta's round trip, undiscounted day coach fares for exhibitors and attendees traveling on Delta to PLCAA/Tampa '85.

You can fly to Tampa and return from either Tampa or Orlando. To take



advantage of the discount you must leave for Tampa or Orlando between November 8 and 21; stay no longer than 15 days; and call toll free 1-800-241-6760 (Continental U.S.) between 8:30 a.m. to 8:00 p.m. EST to reserve your seat. When calling refer to file number L0034. The date of ticket purchase will determine the percentage of discount. Reservations made 45 days prior to departure qualifies for a 40 percent discount. A 35 percent discount will be given for reservations made seven days prior to departure.

PLCAA/Tampa '85 is offering an ex-

panded program of recreational options that take advantage of the sunny South. New this year is the post conference "Paradise Found" package, a four day/three night stay at Resorts International's Paradise Island Resort and Casino in the Bahamas. The trip departs from Tampa November 21 and returns to your originating city November 24.

A Caribbean cruise aboard the Nieuw Amsterdam is planned for November 23 to 30. It will visit the ports of Cozumel, Mexico; Montego Bay, Jamaica; and George Town, Grand Cayman. Prices start at \$1,040 per person based on double occupancy.

If you are interested in visiting Disney World/Epcot Center either before or after the conference, the PLCAA has special room rates at the Dutch American Resort Hotel for November 14-17 and 21-25.

You can receive more information about any of these vacation options by writing to the PLCAA, 1225 Johnson Ferry Road, N.E., Suite B-220, Marietta, Georgia, 30067. ■

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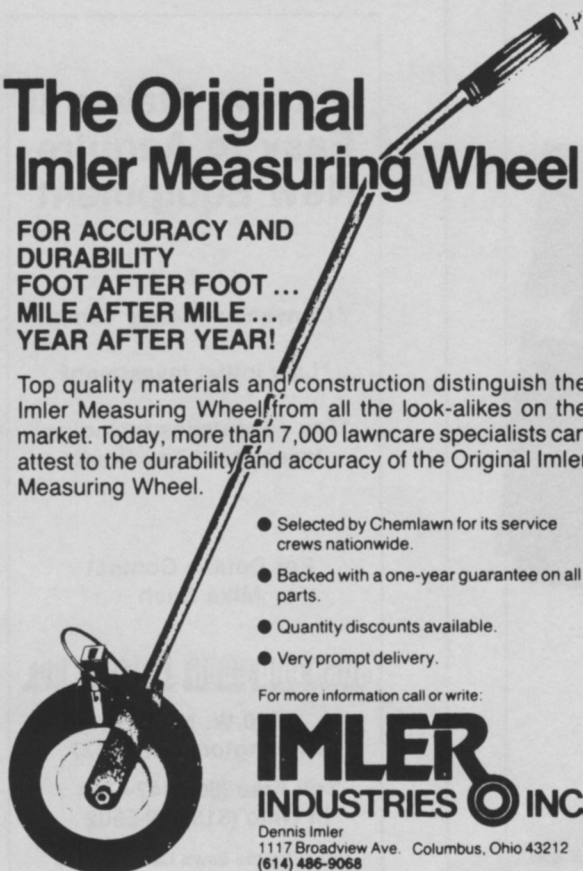
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PEOPLE

Robert J. Peterson, Vice President of E.F. Burlingham and Sons, Forest Grove, Oregon, was elected President of The Lawn Institute at the annual meeting held in Nashville, Tennessee on June 25. Peterson moved up from Vice President to replace Norman M. Rothwell, President of Rothwell Seeds Ltd. of Lindsay, Ontario who has just completed five years as President of The Institute. Peterson is internationally known for his service to the lawn seed industry. He has been Chairman of the American Seed Trade Association Lawnseed Division and is active in the area of legislative affairs.

Serving with Peterson on the Executive Committee of The Lawn Institute are: Vice President, **Howard Schuler**, Northrup King and Company, Minneapolis, Minnesota; Secretary-Treasurer, **Robert Russell**, J and L Adikes, Inc., Jamaica, New York; Committee Members, **Doyle Jacklin**, Jacklin Seed Company, Post Falls, Idaho; **James Carnes**, International Seeds, Inc.,



(Left to right) James Carnes, Robert Russell, Howard Schuler, Norman Rothwell, Doyle Jacklin, and Robert Peterson.

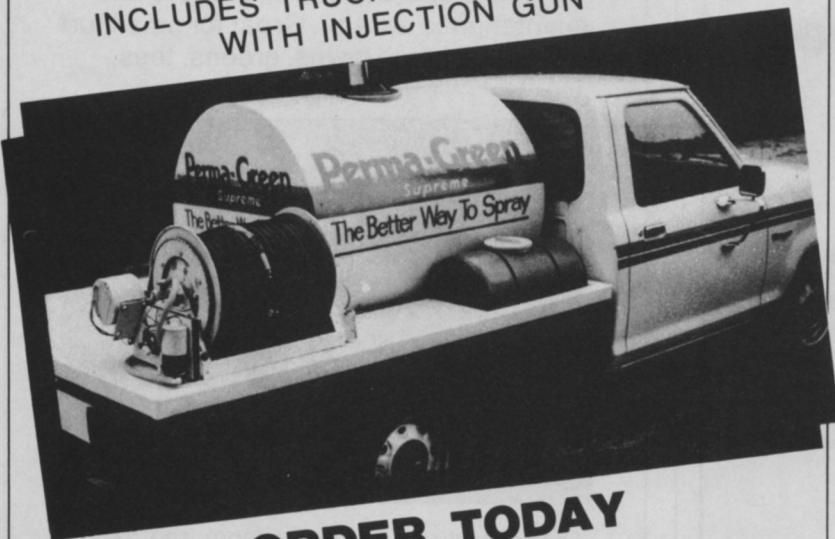
Halsey, Oregon; **Norman Rothwell**, Rothwell Seeds Ltd., Lindsay Ontario, Canada.

The 1985-1986 members elected to the Board of Directors, in addition to those on the Executive Committee include: **Gil Barber**, Southern States Cooperative, Richmond, Virginia; **Jim Collins**, Full Circle, Inc., Madras,

Oregon; **Dave Doerfler**, Oregon Fine Fescue Commission, Salem, Oregon; **Jay Glatt**, Turf-Seeds, Inc., Hubbard, Oregon; **Bill Hill**, George W. Hill and Company, Florence, Kentucky; **Jon Loft**, Loft's, Inc., Bound Brook, New Jersey; **John Magoun**, Michael Leonard, Grant Park, Illinois; **Ed Mangels-**

(continued on page 24)

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PEOPLE

(continued from page 22)

dorf, Mangelsdorf Seed Company, St. Louis, Missouri; **Scott Patterson**, Peterson Seed Company, Savage, Minnesota; **Jerry Pepin**, Pickseed West, Inc., Tangent, Oregon; **Mike Robinson**, Seed Research of Oregon, Inc., Albany, Oregon; **Bruce Ruppurt**, Seed Production and Introduction Corporation, Syracuse, New York; **John Southerland**, Stanford Seed Company, Denver, Pennsylvania; **Steve Tubbs**, Turf Merchants, Inc., Albany, Oregon; **Bob Wetsel**, Wetsel Seed Company, Harrisonburg, Virginia; **John Zajac**, Garfield Williamson, Inc., Jersey City, New Jersey.

David T. Scheid is the new Assistant Director of the United States Botanic Garden. Scheid will be responsible for overseeing the operation of the Botanic Garden, including the up-grading of the collections, horticultural displays, and educational and propagation programs. He comes from the New York Botanical Garden, where, for the past three years, he has been Vice President of Horticulture. He worked six years for the Nemours Foundation, Wilmington, Delaware, managing the former



Kuperschmidt



McAlister

300 acre estate prior to going to New York.

In 1970, Scheid earned a bachelor of science degree in Horticulture from Ohio State University. He also holds a master of science degree in Ornamental Horticulture which he received from the Longwood Program of the University of Delaware in 1976.

Harry I. Kuperschmidt has been promoted to National Sales Manager and Director of Marketing for Grow Consumer Products' Like Magic line of plant care products. In his new post, Kuperschmidt will concentrate on sales, marketing, and merchandising for the Like Magic plant care line, including the development of private-

label brands. The line, introduced last year, utilizes the new patented Grow-Pak® dispensing system.

Kuperschmidt was most recently Product Manager of Grow Consumer Products. He holds a bachelor of business administration degree in Marketing and Advertising and was awarded the Morton Wolman medal for marketing achievement.

Pamela McClure, formerly with the Radisson Resort in Scottsdale, Arizona, has been appointed Director of Meeting Services for The Idea Bank, a Tempe, Arizona-based firm. McClure will coordinate all on-site seminars for the company, which produces educational cassettes and seminars nationally for the landscape industry.

Lynn McAlister has been appointed new District Sales Manager with Snapper Power Equipment covering parts of the states of Kansas, Missouri, Indiana, Kentucky, and Ohio. McAlister started working in the outdoor power equipment industry in 1979 with Kaye Corporation in Mankato, Minnesota as a salesman covering Southeastern Minnesota and Wisconsin. By April of 1982, he was appointed Sales Manager for Kaye Corporation. ■

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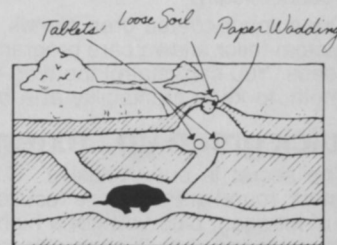
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EQUIPMENT AS CAPITAL

You probably know by now that lawn care equipment is relatively easy to find, but not so easy to buy. If the financing sources you have tried are giving you a hard time, you may want to consider another alternative.

We generally think of spray rigs as tools of the trade, and they are, but they are also business assets. In fact, unless you own your office buildings and property, your equipment is probably your most valuable business asset. Knowing that, you will want to guard your equipment investment very carefully. You should be on the lookout for the best buys, the best financing terms, the best mechanics, and the optimum resale price.

It is generally wise to buy new equipment, but Steve Derrick of Professional Turf Equipment, Normal, Illinois, believes there are circumstances when used equipment could be your best buy. For someone interested in getting started in lawn care, a used spray rig might be practical, especially since a novice operator's few initial customers will not put much strain on the older equipment. "You can buy a piece of used equipment 25 to 50 percent less than what you would pay for a new piece of equipment," says Derrick. "You can afford to put quite a few repairs into that piece of equipment."

Since many of the used rigs up for sale are large capacity units designed to service large routes on a single tankful,

but the best source for good used spray equipment is new equipment manufacturers like himself. "Every year people call who have trucks available or we know who wants to sell them," says Derrick. In addition to rig builders, Derrick says trade magazine classified sections are also good places to shop. If you are looking for a basic chassis truck, he says stay away from auctions because you don't know the history of the equipment.

Speaking of used equipment, you should be sure to get rid of your equipment while it can still be considered used and not used up. Keep equipment for as long as you feel the repairs aren't going to outweigh the economics of keeping the equipment, according to Derrick. "If you put \$5,000 worth of repairs in a piece of equipment, (that's an exaggerated figure) you are better off buying a new piece of equipment because your payments aren't going to be over \$5,000 a year," notes Derrick.

You have to do a "present value analysis" on your aging equipment. "If you put \$3,000 to \$4,000 in a piece of equipment to get it running for this year, then will you have to put another \$3,000 to \$4,000 in it next year, or will that keep it running for another two

says Derrick.

Rich Blakely, President of Blakely Fertilizer, Inc., Springfield, Illinois, is not so sure you can get a good deal in used equipment. Speaking from his experience as a fertilizer manufacturer, a spray rig designer, and a lawn care operator, he considers most used equipment somebody else's headache. Blakely admits you can find some good buys in used equipment, but if you buy equipment new, you get a new equipment warrantee and about four years of operation without major repairs. He says the money you will save in lower used equipment payments will be eaten up in repair bills. Besides, Blakely says you can take an investment tax credit on the new equipment and depreciate the vehicle on your taxes.

Blakely's rule of thumb for retaining equipment is 6,000 hours for diesel engines and 4,000 hours for gasoline engines. "Some of my customers I know have equipment they kept too long and they can't trade out of it, so they have to drive it," says Blakely.

Blakely has leased trucks in the past, but he doesn't any longer because he says he can't find a way to make it pay off. "If you buy a 2-ton International truck and put a 1,000 gallon stainless steel tank on it, you spend about \$34,000," says Blakely. "At the end of four years, the tank is still as good as the day you bought it. If you trade the truck off, the truck is still worth something. With the lease, you just give them the money and when you are through you don't have anything."

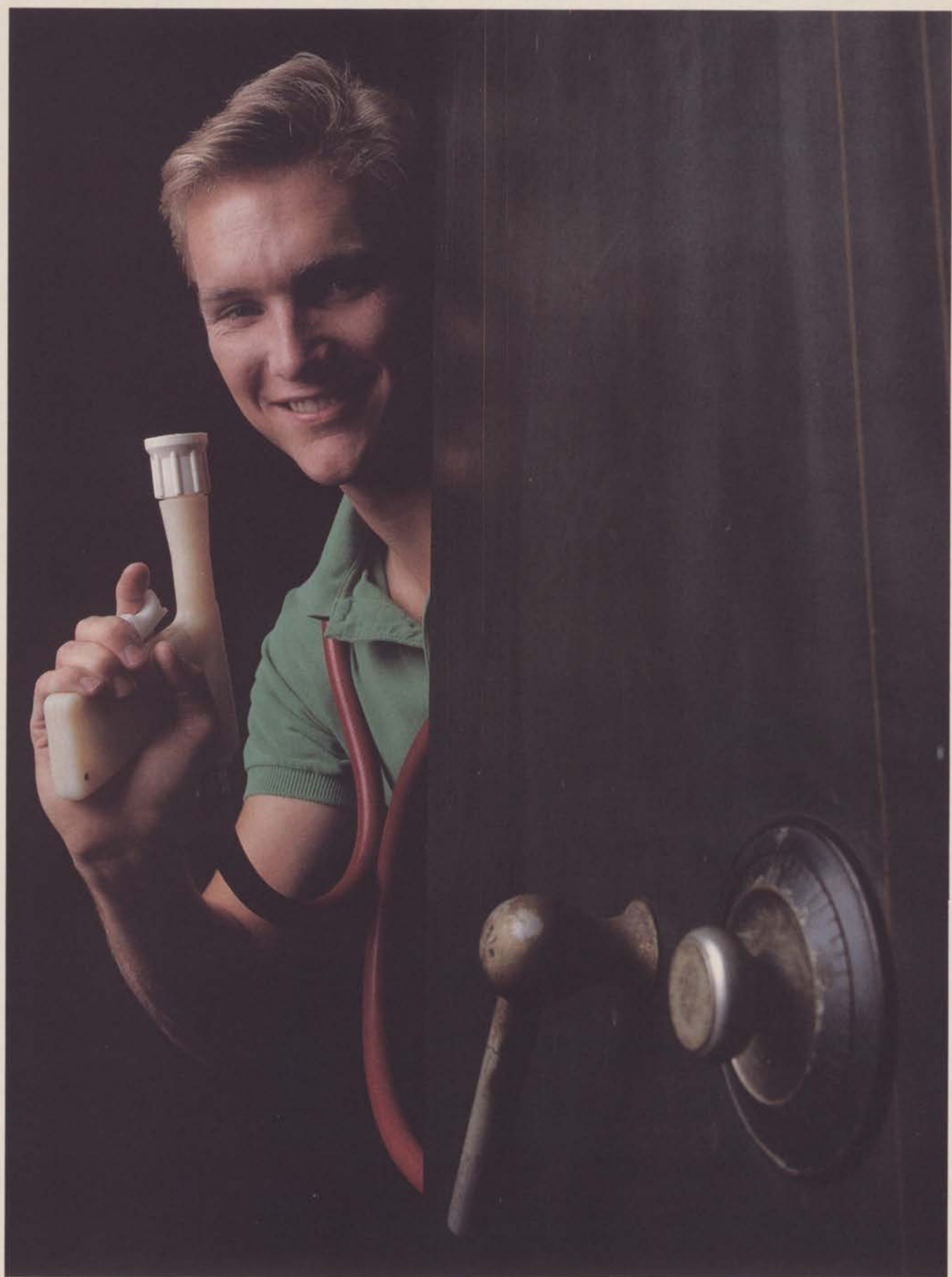
But Blakely can see how the lawn care industry could be a profitable market for leasing companies. He says a company could lease new trucks to larger companies for a three-year period, take them back, and re-lease them to small lawn care companies for an additional three years at a reduced price. "In the lease terms, the original company has to keep them up," says Blakely. "It is definitely profitable."

You should be sure to get rid of your equipment while it can still be considered used and not used up. Keep equipment for as long as you feel the repairs aren't going to outweigh the economics of keeping the equipment.

you may end up with a bigger piece of equipment than you really need. But Derrick says that isn't a problem since the larger rig will give you growing room early on. "It could be a good secondary truck later on when you do grow and start buying new equipment," notes Derrick.

Derrick says it may seem self-

years?," asks Derrick. If you can keep a truck mechanically sound, you will most likely retain its optimum resale value since lawn care trucks are usually not exposed to road salt and therefore remain visually appealing. "The body usually looks very good because these trucks are washed quite often and cosmetically reconditioned every winter,"



In addition to the many hats he has worn in the lawn care industry, Blakely has also had some experience in the banking business, so he feels more secure in buying his equipment. But don't rush into a borrowing situation without a plan. First, Blakely says you should go to your accountant, explain

see you for the bad risk that you probably are. The projection sheet will tell the banker such things as the growth of your business over the last two years and the projected growth over the next two years.

That is where the hard-sell begins, says Blakely. At that point you have to

care operation would need," says Graham.

Graham says lawn care businessmen interested in buying his equipment will have to arrange for financing through their banks because he just doesn't have the financial resources necessary. He says most banks will finance the truck and spray unit in one package. For that reason, if you are interested in buying used equipment, he warns that the bank will probably not finance new spray units to be mounted on used trucks.

On the average, Graham believes a 1-ton truck should last five years. "If you go with some of the larger trucks, go with a diesel engine; you might be able to cost-it-out over 10 years," advises Graham. However, regardless of the type of engine in the truck, Graham says its trade-in value will be very little after it is five to 10 years old.

Graham says new equipment is usually the smart way to go. For one thing, you will get better financing terms. "If you are buying used equipment, normally you have to pay cash for it or a good percentage," says Graham. "You really can't get good financing when you buy used equipment." He says your cash outlay will be less for the first or even second year when buying new equipment rather than used equipment.

Tom Jessen, President of Perma-Green Supreme, Merrillville, Indiana, a low-volume spray rig builder, concurs

(continued on page 37)

Your banker will be impressed if you go to him with a clear, concise projection sheet because it indicates that you have given the matter considerable thought.

your equipment needs to him and have him draw up a projection sheet for you. The projection sheet will tell you if you can pay for the equipment, if you can make money with the equipment, and whether you can sell the whole financing scheme to the bank's loan officer in the first place. "After you pay your CPA about \$300, he comes up with a nice piece of paper you can take to the bank to do your selling job," says Blakely.

Your banker will be impressed if you go to him with a clear, concise projection sheet because it indicates that you have given the matter considerable thought. "You have proved to yourself, with somebody else doing it, that it will pay," explains Blakely. If you present a banker with hand-written calculations on a sheet of tablet paper he is going to

justify your projected growth, present enough collateral to cover the loan and convince the banker you can meet the finance payments. "More people probably get turned down for credit because they don't know how to ask for it," says Blakely. But you will know how to ask for it if your accountant writes the cue cards for you — the projection sheet. "I really think they all should have CPAs, I don't care how small they are."

Max Graham, President of Graham Lawn Care Equipment Corporation, Douglasville, Georgia, has noticed a growing popularity in lawn care equipment leasing, but only among the large operations, the small companies are still buying their rigs. "It was a little difficult in the past to get a lease company to put together the right package a lawn

FINANCING BY THE BOOK

Read a good book lately? When searching for ways to finance your lawn care operation, it is always a good idea to consult the experts. A lot of sound financing advice can be found at your local library. Here are just a few financial tomes that should pique your interest — and your interest rates.

•**2001 Sources of Financing for Small Business.** Author: Herman Holtz. Publisher: Arco Publishing, Inc., New York, 1983. This is essentially a directory, listing names, addresses, and phone numbers of prime sources of financing across the country. The sources are broken down into six categories and each category is prefaced by an explanation of what can and cannot be expected from each type of source. There is information on federal and state agencies, venture capitalists, and special help.

•**A Guide To Lease Financing: An Alternative to Buying.** Authors: C. Richard Baker and Rick Stephan Hayes. Publisher: John Wiley and Sons, New York, 1981. This book addresses the increasing popularity of leasing and demonstrates how you stand to benefit substantially from leasing arrangements. The authors discuss how lease financing makes funds available that would otherwise be tied up in ownership of fixed assets, the tax advantages of lease financing, and how lease financing improves your



financial statement. The book also describes the details of legal implications, accounting, and project finance.

•**The Lease/Buy Decision.** Authors: Pieter T. Elgers and John J. Clark. Publisher: The Free Press, New York, 1980. This is a non-technical guide to assessing the profitability of lease proposals using simple arithmetic and a pocket calculator. The authors offer a systematic method for evaluating, quickly and accurately, the profitability of leasing, purchasing, or selling business assets. The book includes chapters on lease negotiation, types of leases, tax regulations, and leveraged leases.



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Toro equipment is also designed to operate efficiently and cost

effectively. And with a nationwide network of Toro distributors and commercial dealers at your service, parts and service support is always within reach. So you avoid costly breakdowns and get jobs done on schedule.

Now that you know what kind of edge Toro gives *you*, it's time to learn about the edge it gives your customers—a consistent quality cut every time.



There are few places left whose appearance can't be improved by Toro.

And we'll let Mother Nature deal with those.

But for those places you're responsible for—office parks, recreational areas, residential areas and more—Toro equipment provides the attractive, finished appearance you can build a solid reputation on. And a thriving business.

Toro has the broadest line of

equipment to insure that your customers will be repeat customers—riding and walk mowers; 36", 44" or 52" decks; bagging options, edgers, trimmers, blowers, and more. And we're constantly fine-tuning and



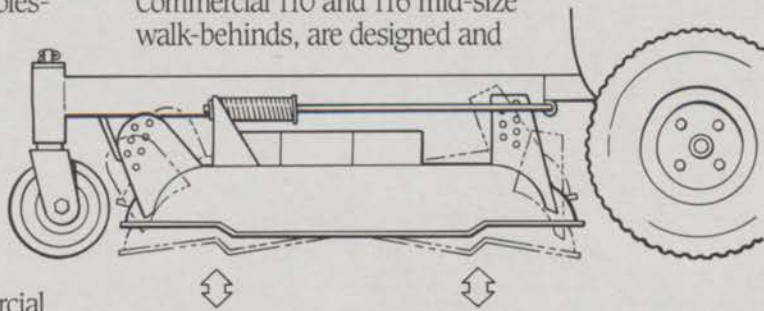


improving our equipment—based on your feedback—to help you provide the highest quality, professionally maintained lawns.

And because Toro is constantly innovating (to make your job more profitable and your customers happier), we've just introduced two *new* Groundsmaster® riding mowers and two new Commercial mid-size walk mowers.

The Groundsmaster 117 and 217-D riders are seventeen horse-

power, gasoline and diesel models. They, along with the two new Commercial 110 and 116 mid-size walk-behinds, are designed and



engineered to provide a quality cut in the most demanding conditions. They all utilize floating cutting units

within carrier frames that let you follow the contour of the terrain with minimal scalping.

And Toro's grass collection systems and Wind-Tunnel® design let you collect the clippings or discharge them without clumping.

To keep your business growing, you need a reliable partner. One you can depend on to get the job done—Toro commercial equipment.



For two-thirds of the world, Toro's reliability really isn't a factor.

From sea to shining sea, commercial cutters are counting on equipment that stands up to the rugged demands of climate, terrain, and some very particular customers.

And Toro commercial equipment, more than any other, is out front setting those standards. The standards that keep you cutting

on schedule.

When you promise to have a job done by a certain time, excuses won't cut it. That's why it pays to have Toro on your side. Our new Groundsmaster and Commercial mid-size walk mowers are designed





for hours of professional use; continuous rough operation in a wide variety of cutting conditions. Each model is designed to require minimal maintenance and is rigorously tested to assure it meets your toughest demands.

But you need more than reliable



equipment. When something does break down, you can't afford to have mowers waylaid in the shop. So your local Toro distributor or commercial dealer has the most common parts in stock for same-day pick-up.

Through our Direct Ship Pro-

gram, you can get infrequently needed parts direct from the factory within a few days. For parts you need sooner, just let us know, and our Unit Down Program will enable us to get them to you as quickly as 24 hours.*

At Toro, we're not just looking for ways to help you get the job done. We're looking for ways to help you get it done faster, easier and on schedule. No matter what the conditions, no matter what the terrain.



What could be more economical than a Toro?

You can find cheaper equipment on the market, but how much will it cost you in the long run?

Would you rather build a business on reliable equipment that gets the job done on time, or on cheap equipment that breaks down and produces unhappy customers. It's a simple formula: happy customers equal profitability.

And if you're serious about profitability, few grass cutters can be

as economical, or provide as much value as a Toro.

How can we keep your charges competitive when your competition is buying cheaper machines? By designing more productive, labor-saving mowers. With out-front cutting units and rear steering for better maneuverability. With more up-hill and hillside stability and balanced designs. With more efficient

grass collection systems. And with





comfort and safety designed into every machine for less driver fatigue.

We help you reduce operating costs with your choice of engines offering different fuel efficiencies—gasoline or diesel. We offer you two or four cycle engines on our Commercial mid-size walk mowers along with several horsepower options to adapt to your needs.

Toro equipment also helps you reduce your maintenance costs because of its rugged and durable construction. Strong frames and cutting decks are able to withstand the most punishing conditions—namely, a routine day on the job. Industry-proven engines provide

maximum performance on those jobs where mowers have to run continuously and work hard. And high-capacity,

replaceable, easy-to-maintain air and oil filters increase engine and transmission life.



When it comes to economy and value, Toro commercial equipment has the advantage. Our competitors' equipment may cost you a little less up front, but in terms of reliability, may cost you your customers in the long run. And that's a price no growing business can afford.

For more information on Toro economy and value, contact your local Toro distributor or commercial dealer. Or send in the coupon on the next page.

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*Customer eligibility for Toro's Unit Down and Direct Ship programs, and responsibility for freight and handling options, subject to local distributor option.

All 24-hour Unit Down parts delivery orders must be placed with Toro by 2:00 PM, Minneapolis time.

Toro commercial equipment for profitability, a cut above the rest.

GROUNDMASTER 117

A compact riding mower that performs the function of both a garden tractor and a walk-behind. 17 hp Kohler engine and hydrostatic transmission make this rider a powerful workhorse. 44" or 52" floating cutting decks with or without bagging.



GROUNDMASTER 220 AND NEW 217-D

The new Groundmaster 217 diesel provides the same quality of cut Toro has built its reputation on. And for less. Because the water-cooled, 17-hp diesel engine reduces operating costs and saves you money. The 217, or gas powered, 20-hp model is easy to maneuver and lets you cut in close to objects for trimming. 52" or 62" cutting decks are available along with a grass collection system for the 52" cutter.



SIX 21" WALK BEHIND MOWERS

All rugged and durable commercial units provide superior cutting. Two models have Toro's exclusive commercial 2-cycle engine; four are available with 4-cycle, five hp engines. You can choose the model you need for side or rear bagging.



GROUNDMASTER 327 AND 322-D

The Groundmaster 300's are the industry standards. They've built their reputation on power, durability and on-the-job performance. The Groundmaster 327 with its new gas 27 hp engine, or the 322-D, 22 hp diesel, can be equipped with a 72" side or rear discharge deck. Seasonal accessories available for snow-blowing, plowing, leaf raking and more.



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EQUIPMENT AS CAPITAL

(continued from page 28)

with Graham's appraisal of the new versus used equipment situation. Jessen admits there may be certain situations which justify buying used goods, such as buying almost-new equipment repossessed by a bank, but new equipment is generally more cost effective. "So many times used equipment is really *abused* equipment," says Jessen.

Even though lawn care truck bodies are usually long-lived, Jessen believes it is better to replace them after five to six years rather than drop a new or rebuilt drivetrain into an otherwise sound vehicle. Jessen traded in two, 1979 GMC 6000, 2-ton trucks on a new truck in 1983. Although the trucks were only about four years old, he could only get \$4,000 for them on a trade-in. Since a new engine for a truck that size would cost about \$2,000, he doesn't see any way to justify spending that much on a truck that is only worth \$4,000 in trade-in.

When you go to the bank to finance the new equipment, Jessen says bankers are more than happy to loan money for truck purchases, but the spray unit you want to buy and mount on that truck is another story. "They are sometimes very reluctant to loan on the spray equipment that goes on the back of that truck," says Jessen. "You can appreciate the bank's position on this, they are not specialists in equipment. What are they going to do with a truck with a sprayer on the back of it if they have to repossess it? They can resell the truck, but who in the heck is going to buy that sprayer?"

In most cases, Jessen says the buyer has to come up with his own money for the sprayer or arrange for financing through the seller of the truck. Jessen also recommends that you consider a lease agreement to lessen the problems of financing a truck and spray unit together. He says a lot of people are operating his equipment through a leasing company that specializes in equipment. "They have an arrangement with me, so if for any reason they repossess it, we'll work together to redistribute that piece of equipment," says Jessen. "They are not afraid to take on that kind of high-risk specialized equipment."

Jessen says the leasing company he works with, Bush and Cook Leasing, Inc., located near Cincinnati, can offer a reasonable leasing rate, by leasing company standards. Jessen believes leasing will become *the* way lawn care operators will obtain their equipment. He says leasing will free-up working capital for small and mid-sized companies. "If I'm borrowed-up at the bank, sometimes it's hard for me to go there and get the working capital I need," ex-

plains Jessen. "When the equipment is financed through the leasing company, it is easier to talk to the bank."

When leasing, Jessen says a large cash down payment is not necessary. For example, a typical lease agreement might be financed over four years and require your first two payments up front. The leasing companies Jessen has dealt with allow the lessee to pick up investment tax credits and the option to buy-out the equipment at the end of the lease term. "It is hard to beat that kind of a deal," says Jessen, "when you can put in a lease application just like you would ask for credit at your hardware store. Chances are, unless you've had some kind of

The leasing companies Jessen has dealt with allow the lessee to pick up investment tax credits and the option to buy-out the equipment at the end of the lease term.

repossession or very bad credit, you're going to be able to qualify for it."

Surprisingly enough, Jim Lowe, Manager of Fleet and Leasing Finance, International Harvester Credit Corporation, Chicago, Illinois, is not as enthusiastic as Jessen about the average lawn care operator's prospects of obtaining a viable lease arrangement. At one time, International Harvester leased up to 400 trucks to ChemLawn Corporation through its Columbus, Ohio dealer, but due to recent financial problems in the company's agricultural division, Lowe says they can no longer offer competitive leasing terms. International Harvester was a major source of leased trucks.

"We probably financed and leased more trucks in the mid-1970s than anybody else around," says Lowe. "We generally did it on a 48-month basis, generally with about a 20 percent residual at four years and equal monthly payments." He says they were guaranteed leases because the lawn care companies wanted to own the equipment at the end of the term. "It is somewhat specialized," says Lowe. "I don't know what else you could do with those trucks as long as it has the tank and pumps mounted on it except what it was intended for."

International Harvester can no longer offer competitive leasing programs, but Lowe says lawn care operators will find that most leasing companies will be just as incompatible for different reasons. If you started your business on a shoestring, as most lawn care businessmen have, Lowe says you will have a hard time finding a leasing company willing to lease to you. He says leasing is essentially a non-equity type of financing with one or two pay-

ments up front. You have to have sufficient net worth to guarantee payment protection to the leasing company.

Lowe says major banks are currently looking for companies to qualify for a type of lease called TRAC leasing (Terminal Rate Adjustment Clause) which some large lawn care firms may be able to fulfill. TRAC leases are only negotiated to companies with strong credit for the purpose of obtaining vehicle fleets, such as rental cars or moving vans. He says there are TRAC lease terms currently on the market at rates of 4 and 5 percent simple. TRAC leasing involves a guaranteed lease.

"You have a residual at the end of the lease period of 25 to 30 percent and

the lessee guarantees to the lease company that they will sell the trucks at the end of the lease period and pay the lessor or that they themselves will purchase the trucks," explains Lowe. With this arrangement, the residuals may be higher than the normal market rates. The leasing company keeps the investment tax credit and the depreciation and very low rates are the rule, according to Lowe. "In December, you can take an entire year's investment tax credit," notes Lowe. "The rates can get very attractive in December." However, Lowe is not sure how the forthcoming new tax law will affect TRAC leases.

But the bottom line for most lawn care businessmen is that the only feasible method of obtaining spray equipment is through bank financing, according to Lowe. Even at that, the lender may require a lot of convincing. One avenue, according to Lowe, is through a truck dealer. The dealer would have to make a determination for the financing source since the lawn application equipment added-on to the truck could be as expensive as the truck itself. But Lowe admits there is a lot of variation within the industry in terms of equipment needs. Companies using primarily granular application equipment may require very little modifications to an existing truck body.

You, the truck manufacturer, or a bank will have to finance the equipment to be mounted on the truck. Even if the truck dealer buys the equipment, you will have to essentially draw up a list of components you want assembled. In some cases, Lowe says it may be necessary for the truck dealer to buy the equipment to get it included in the financing. But the dealer may be reluc-

tant to essentially become your partner in the spray rig investment. "It's going to take quite a bit of contact between the lawn care firm and whoever is doing the selling," says Lowe. "It is unlikely that the tank or pump manufacturer is going to be interested in getting involved in financing the truck."

So the terms you get, and even whether or not you get financing, will depend upon your financial strengths and credit history. If you have been in business for awhile and have developed a good relationship with your banker, Lowe says you will get the best terms through a bank. However, banks tend to be the most conservative source of financing and therefore will be the most difficult source of financing. Truck manufacturers like International Harvester or their associated credit corporations, tend to require less proof of financial stability than banks, but their lending rates also tend to be the highest around. Lowe says there are exceptions to that rule in the case of manufacturers that offer programs featuring short-term, 30- to 60-day subsidized rates.

Part of the difficulty in lending to lawn care firms lies not in the equipment they use, but the very nature of the business itself. Lowe says lawn care companies always have cash flow problems in the early part of the year. "At some times during the year," says Lowe, "a lawn care firm has one of the most horrible-looking financial state-



Steve Derrick is posing beside one of Pro Turf's latest models.

ships. "If it was someone we didn't deal with, we would look into it," says Bush. "We usually have our own relationships as far as finding the truck. We find the truck and put together a package lease on the truck and equipment."

You can submit a credit application with Bush and Cook over the telephone. "It is just a one page credit application," says Bush. "We ask for basic information, like your address, social security number, and the names of your banks." He says leasing terms vary widely — from one year to six years.

with banks' conservative lending habits and high rates elsewhere, but he says he can be competitive with anyone. "They (lawn care operators) usually check with their local bank first and they usually have to go through a hassle to get the money or they can't get it at all because of the specialized type of equipment," says Bush.

Bush says traditional finance sources have not taken much interest in the lawn care industry. "They feel it is risky and the equipment is specialized and they don't know what to do with it when they get it back. We have taken the time to learn about the industry and serve the industry. We know the profile of somebody who is in the business. We can work with them a little bit easier than say, a bank or some of the larger leasing companies."

Unlike many leasing companies that are strictly involved in finance, Bush and Cook has an inventory of trucks on hand built specifically for the lawn care industry. They have a shop where they do cabinet making, metal fabrication, specialized painting and decaling. Much of the company's expertise in specialized truck work has come from the custom interiors they build for Mack Tool Corporation trucks. "We buy trucks at cost with no mark-up which keeps our rates down," says Bush. "We deliver all over the country — we try to be a full-service company!" — *Tim Weidner* ■

The author is Managing Editor of ALA magazine.

If the Bush and Cook operation sounds like the perfect source for the trucks you need (or sounds too good to be true) you might want to look into their program. Contact Mike Bush at Bush and Cook Leasing, Inc., 513/382-5502, calling from inside Ohio; or 1/800/342-4784 from outside the state.

If you have been in business for awhile and have developed a good relationship with your banker, Lowe says you will get the best terms through a bank.

ments you can imagine because they are buying all their chemicals in the fall or early spring so cash flow is one way. Usually it is about the third quarter before things get back in balance again." But Lowe is quick to add that a good relationship with your banker can overcome some of this problem.

Some may argue that internal financial problems at International Harvester have influenced Lowe's bleak outlook for this industry's equipment acquisition abilities. Mike Bush, Account Executive at Bush and Cook Leasing, Wilmington, Ohio, certainly doesn't share Lowe's assessment of the situation. In fact, Bush's company has been busy leasing lawn care rigs through the cooperation of spray rig manufacturers like Professional Turf Equipment, Graham Lawn Care Equipment Corporation and Perma-Green Supreme.

Bush says his company works with approved spray rig builders with which they have already developed relation-

Bush and Cook are not exactly newcomers. They have been leasing to the lawn care industry for about two years and currently lease to 70 lawn care companies. "We're probably the nation's largest lessor of carpet cleaning trucks and equipment," boasts Bush. "We got a natural flow-over into the lawn care industry from that." He says he got his foot in the door by personally contacting some of the large lawn care companies and additional exposure has come through contacts he has made at lawn care trade shows.

How popular is leasing? "There has been a tremendous demand since we've been in the industry," says Bush. "We deal with anyone — from the really large companies to the ma and pa operations. It has really taken off quite well for us." Bush says the more "sophisticated" companies are now taking a look at leasing.

Bush echoes some of Lowe's comments about the problems associated

CREATIVE FINANCING

When you need money, you usually go to a traditional lending institution, namely a bank. But you have to do a lot of preparation before you ever shake the loan officer's hand. You have to be creative.

When a company needs money for operating capital, the first place it usually visits is its local commercial bank. Almost any type or size of business is eligible for a loan from a bank and, as a *very general* rule, banks will normally lend up to 60 to 80 percent of a company's net working capital and up to 100 percent of net worth. However, the aging and mix of the specific working capital assets must be good. A high percentage of less-liquid assets (for example, inventory) will reduce borrowing capacity.

Since a bank is a short-term lender, a banker (or bank) can help a business grow; he can also inhibit growth, but sometimes to the betterment of the company. This is particularly true for smaller businesses that are generally "locked" into short-term bank debt. Select a bank — and a banker — carefully. Here are a few tips on your approach.

- Prepare the financial and business information you will present to the bank.
- Determine which local, regional, or national banks are active in your area for the type of financing you are seeking.
- Find out which banks specialize in working with companies in your industry.
- Prepare a 10- to 20-page report on your capital needs. Why do you need the capital? Why should the bank make the loan? How do you intend to repay the loan?
- Select and make presentations to two or three banks.
- Compare the banks and the bankers in reference to their desire to work with your business and their reaction to your proposal.

In the selection of a bank, the following information should be determined.

- Its legal lending limit.
- Its in-house limit to any one customer.
- Procedures for getting the loan

processed.

- Clean-up requirements.
- Compensating balances.
- Other requirements.

Evaluate the lending officer as well as the bank. Determine the extent of the banker's personal lending authority. If it is \$100,000, you may wish to reduce your original \$125,000 loan request to this limit. If another person's signature is needed to approve the loan, find out who that person is. Meet and sell him on your business.

Don't go to your bank for money until you have established the six items of information a banker must have in order to be able to consider the merits of a loan. They are: the amount to be borrowed, the date the required loan is needed, use of proceeds, repayment schedule, planned cash sources for repayment, and alternative repayment sources, if any.

Obtain loan commitments when your company is credit-worthy and your bank has money. When a bank is obviously loaded with cash, a credit-worthy company should set up an iron-clad (to the extent possible, anyway) loan agreement with improved terms and conditions and increased credit lines. Even if a commitment fee is the price, it may be worth it to be sure that your company will have the capital it needs for growth.

TYPES OF LOANS. Commercial banks make several types of loans, including lines of credit, term loans, security agreements, and installment loans.

Lines of credit is one of the oldest and most common forms of bank financing. Under a line-of-credit agreement, the bank provides a business access to a certain maximum short-term loan amount, available at the request of the business. The business may draw on the line when necessary and repay when the funds are no longer needed. The line of credit is extended

by the bank for a certain time period, such as 90 days, or perhaps a year or two.

Under a term loan, a bank commits to lend a borrower a certain amount of money for a certain period. However, repayment of the loan, normally on a quarterly basis, is generally required over the term of the loan. Unlike a line of credit, repayments under a term loan cannot be automatically reborrowed. Interest rates on term loans are generally higher than on lines of credit, reflecting the longer period that the bank's money is at risk — *and inflation*.

Security agreements are secured intermediate-term loans. They are granted by a bank to finance (or refinance) a specific noncurrent asset, such as a piece of machinery or equipment. Their maturity is generally three to five years, but may extend to seven years. The bank may be willing to extend maturity, since it is protected by a lien on the specific asset. Security agreements are generally repaid over the life of the asset.

Installment loans are intermediate-term bank loans, with maturities of one to three years, that are repaid in *level payments*, normally monthly, including both principal and interest. They may be secured or unsecured and may finance a variety of business needs. Installment loans differ from lines of credit in that the loan is committed for a specific period with a definite repayment schedule. They differ from term loans in that principal and interest are included in one payment. In contrast, term loan repayments are generally separate payments, often on different time cycles — for example, interest paid monthly, principal monthly, quarterly or annually. — *Tom Martin* ■

The author is President of Thomar Publications, Inc. and Publisher/Editor of The Business Owner, a national business newsletter for the owners of smaller companies.

TOLERATING HERBICIDES

All Kentucky bluegrass varieties do not respond equally to preemergence herbicide treatments. You should keep herbicide tolerance in mind when making herbicide applications.

Controlling summer weeds in turfgrass is important to maintain a good quality turf. Crabgrass (*Digitaria* spp.) can usually be controlled with either Balan[®], Betasan[®], Dacthal[®], Devrinal[®], or Ronstar[®] (Johnson 1977, 1977a, 1980) while goosegrass (*Eleusine indica* L. Gaertn.) can be controlled with Devrinal or Ronstar (Johnson 1977, 1980). However, it may be necessary to repeat applications of Balan and Devrinal at a two-month interval to obtain full-season weed control.

For herbicides to be acceptable they must control weeds without injuring the desired turf. In Michigan (Turgeon et al 1974), the most pronounced effect on turfgrass quality was observed during mid-summer stress periods of drought and high temperature where Betasan temporarily injured Kenblue and Merion Kentucky bluegrass (*Poa pratensis* L.) cultivars after the third annual treatment. In the Blue Ridge Mountain region of Georgia, Balan, Betasan, and Ronstar injured common Kentucky bluegrass slightly after treatment in one of three years (Johnson 1977a).

Because stress conditions can occur during mid-summer in the Mountain region of Georgia where Kentucky bluegrasses are grown, an experiment was initiated to determine the tolerance of six Kentucky bluegrass cultivars to consecutive annual herbicide treatments.

PROCEDURE. Six Kentucky bluegrass cultivars (Adelphi, Vantage, Victa, Merion, Fylking, and common) were planted August 19, 1976 in the Blue Ridge Mountain region at Blairsville, Georgia. All cultivars were treated annually with herbicides on March 15 (within five days each year) from 1978 through



Figure 1. Ronstar injury symptoms on Merion Kentucky bluegrass. Above: Treated plot. Below: Treated leaf. Herbicide was applied in March, and pictures were made in August.

1981. The herbicides were Betasan (10.0 and 30.0 lb/A), Balan (3.0 and 9.0 lb/A), Dacthal (10.0 and 30.0 lb/A), Devrinal (3.0 and 9.0 lb/A), and Ronstar (4.0 and 12.0 lb/A). An untreated check was included. Rates chosen were the recommended (1X) and three times the recommended (3X). Betasan and Dacthal were applied as a spray in 40 gallons of water per acre, and granules of Balan, Devrinal, and Ronstar were applied with a drop spreader.

Turf quality and stand ratings of Kentucky bluegrass cultivars were made in spring, summer, and early fall each year. The quality ratings were based on 0 to 100 where 0 equals total discoloration or completely brown and 100 equals no discoloration with dark green plant color. Turf stand ratings were based on percent ground cover where 0 equals no turf and 100 equals complete uniform cover. The population of crabgrass in the test area was very light during the first year, but gradually increased throughout the four-year period. However, data will only be given on turfgrass tolerance.

All treatments were arranged in a split plot design with herbicide treatments as main plots and cultivars





Figure 2. Response of Kentucky bluegrass cultivars to Balan treatment in the right plot. Upper: Merion. Lower: Fylking. Herbicide was applied in March and pictures were made in June 1978.

as subplots. Main plots were 5-foot by 30-foot and subplots were 5-foot by 5-foot with four replications. Quality ratings are averages from four years while turf stand is reported at the end of the four-year period. All data were analyzed statistically and differences reported by LSD at 0.05 level.

TURF QUALITY. The quality of Kentucky bluegrass turf from herbicide treatments affected the cultivars differently when ratings were made in May following herbicide application (Table 1). Devrinal injured the turf and reduced the quality of all cultivars. Therefore, the chemical should not be used for weed control in Kentucky bluegrass.

Betasan was the preemergence herbicide that did not

reduce the quality of turf of any cultivar in early spring when compared with the untreated check (Table 1). Although it had been reported that Betasan caused temporary injury to Kentucky bluegrass in Michigan (Turgeon et al 1974), the chemical was safe to use in the present study.

Although there were no differences in quality of Kentucky bluegrass turf treated with Dacthal compared to Betasan, the quality of Adelphi was reduced slightly (Table 1). Other cultivars were not affected. Therefore, Dacthal may influence the quality of selected cultivars slightly, but no permanent injury occurred from the treatment.

Balan and Ronstar injured some of the Kentucky bluegrass cultivars more than Betasan or Dacthal (Table 1). Balan applied at 1X rate reduced the quality of Fylking and

common cultivars while Ronstar applied at 1X rate reduced the quality of Adelphi, Vantage, and Merion cultivars. Injury symptoms from Ronstar on Merion are shown in Figure 1. The quality of other cultivars was not affected when treated with either herbicide at 1X rates.

When the rate of herbicide applications was increased to the 3X level, Balan reduced the quality of all cultivars except Merion while Ronstar reduced the quality of all cultivars (Table 1). The quality of turf treated with 3X level of Betasan and Dacthal was not different from turf treated at 1X level. The injury to Kentucky bluegrass cultivars in early spring from 1X and 3X treatments with Balan and a 1X treatment with Ronstar did not severely affect the turf.

The turf in these plots fully recovered when final ratings were made in late summer (data not given). However, Victa, Merion, Fylking, and common did not recover when treated with Ronstar at 3X level as shown by reduction in stand (Table 2). This indicates that caution should be exercised in the use of Ronstar for weed control in Kentucky bluegrass turf because of excessive injury at the high rate. However, when either Betasan, Balan, Dacthal, or Ronstar was applied at 1X level, the reduction in quality of Kentucky bluegrass cultivars in early spring was not objectionable.

TURF STAND. It is important to select herbicides that do not reduce turf stands. A leaf discoloration or delayed spring growth can temporarily reduce turf quality and not affect the stand. However, it is likely that a severe reduction in turf quality can be directly related to reduction in turfgrass stands.

After four annual consecutive herbicide treatments on six Kentucky bluegrass cultivars, Balan was the only herbicide that did not reduce turf stands in plots treated at 3X level of any cultivar when compared with stands in plots treated at 1X of the same chemical (Table 2). Betasan applied at the 3X rate reduced the stand of Adelphi when compared with the stand in 1X-treated plots. Dacthal applied at the 3X level reduced stands of Fylking and common while Ronstar at the 3X level reduced stands of Merion, Fylking, and common when compared with stands in 1X-treated plots. The 3X treatment of Devrinal reduced stands of all cultivars when compared with 1X treatments.

It should be emphasized that the herbicides may not affect Kentucky bluegrasses the same each year. For example, the data taken in 1981 (Table 2) shows that Merion and Fylking cultivars were similar in stand when treated with Balan at 3.0 lb/A. However, Balan severely injured Fylking, but not Merion in 1978 (Figure 2). The difference in cultivars among years are usually not this severe.

Results from this study show that consecutive annual treatments of Betasan, Balan, Dacthal, or Ronstar applied at recommended rates may reduce the quality of Kentucky bluegrass cultivars in early spring, but do not affect turf stand. Although the quality of some cultivars varied among years from herbicides, turf fully recovered during late spring and summer. This indicates that the stress from high temperatures in the Mountain region of Georgia did not significantly affect the performance of herbicides on Kentucky bluegrass. However, care should be taken to limit herbicide treatments to recommended

Treatments ^a		Kentucky bluegrass cultivars ^b					
Herbicide	Rate	Adelphi	Vantage	Victa	Merion	Fylking	Common
	lb/A	----- % untreated check -----					
Untreated	—	100	100	100	100	100	100
Betasan	10.0	96	97	101	96	99	96
	30.0	96	96	100	97	96	96
Balan	3.0	96	97	100	103	90	93
	9.0	88	92	95	100	79	88
Dacthal	10.0	93	96	100	101	99	95
	30.0	94	96	100	100	97	95
Devrinal	3.0	83	66	68	65	75	75
	9.0	46	22	23	18	22	32
Ronstar	4.0	88	92	97	94	97	95
	12.0	80	82	84	71	75	82
L.S.D. at 0.05		4	4	4	4	4	4

^aHerbicides were applied to the same plots on March 15 ± 5 days from 1978 through 1981.

^bTurf quality ratings were made May 1 ± 2 weeks and are averages of four years.

Table 1. Effect of consecutive annual herbicide treatments on quality of six Kentucky bluegrass cultivars.

Treatments ^a		Kentucky bluegrass cultivars ^b					
Herbicide	Rate	Adelphi	Vantage	Victa	Merion	Fylking	Common
	lb/A	----- % cover -----					
Betasan	10.0	96	89	89	65	64	71
	30.0	89	91	89	82	64	76
Balan	3.0	91	89	85	78	78	68
	9.0	89	86	80	76	81	81
Dacthal	10.0	94	86	90	71	87	80
	30.0	94	92	91	71	65	74
Devrinal	3.0	95	93	93	75	61	66
	9.0	83	58	24	10	16	18
Ronstar	4.0	95	84	86	79	79	76
	12.0	98	91	81	37	63	80
L.S.D. at 0.05		5	5	5	5	5	5

^aHerbicides were applied to the same plots on March 15 ± 5 days from 1978 through 1981.

^bTurf stand ratings were made September 21, 1981 and based on percent ground cover where 0 = no turf and 100 = complete uniform cover.

Table 2. Effect of four consecutive annual herbicide treatments on stand of six Kentucky bluegrass cultivars.

rates. All herbicides applied at 3X rate levels caused a reduction in turf stand at sometime during the four-year period. Turf stand was affected less from excessive rates of Betasan and Dacthal than from Balan and Ronstar. Devrinal should not be used for weed control in any of the cultivars included in this study due to excessive turf injury and stand loss. —B.J. Johnson ■

The author is professor of agronomy at the University of Georgia College of Agriculture Experiment Station, Experiment, GA. Trade names are included for the benefit of the reader and do not imply endorsement or preferential treatment. A given herbicide may have more than one trade name, and the name used is from the company furnishing the chemical.

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AERATION AGRONOMICS

Have you been considering aeration as an add-on service to boost sales or extend your cash flow? If you have, you should know that buying the right machine and operating it properly can mean the difference between satisfied customers and ex-customers.



Core cultivation provides an opportunity for better root penetration (left). Most aerators will have little effect on turf with deep thatch (right).

In turf maintenance we strive for turf which is both beautiful and functional. But we also recognize the need for turf which can withstand stress conditions as well. If properly managed, a healthy turf will grow actively enough to compete with weeds and will survive modest attacks by diseases, insects, and other pests, as well as moisture stress and traffic effects.

Of course, when any of these stresses are severe, corrective practices are necessary. As site conditions become poorer (such as shade, traffic, and compaction) the susceptibility to stresses will increase the intensity of management needed to survive those stresses. Two conditions which contribute significantly to stress problems are compacted soil conditions and thatch. If these conditions exist, maintenance practices will be needed which will require a number of years for improvement.

COMPACTED SOILS. On many turf sites, the soils have been highly

compacted by grading or preparing the site while the soil was wet. Contributing further to the problem is the fact that many sites have not been established on good topsoil, but on compacted subsoil which is high in clay content. When wet, these soils are especially susceptible to the compactive forces of equip-

Two conditions which contribute significantly to stress problems are compacted soil conditions and thatch.

ment and people traffic.

Most turfgrasses do not have very strong, aggressive or deep roots. On compacted soils this results in shallow root systems and many management problems. This represents unique diffi-

culties for lawn care companies, for example, which are expected to provide a quality turf when most of the management practices are not under their control and when sufficient monies are not expended by the homeowner to correct the basic problems.

Soils are compacted by pressing the soil particles closely together resulting in a loss of pore space, especially the large pores needed for drainage. This causes several problems.

- Poor aeration for roots and desirable soil organisms.
- Slow infiltration of water leading to runoff and inefficient water use.
- Poor drainage in areas where water stands, limiting the use of the area when wet and making those areas susceptible to more compaction or rutting and footprinting.
- A very dense soil mass that makes rooting difficult and may prevent the activity of soil animals like earthworms which could help relieve some of the compacted condition.

- A soil which has very little resilience and can result in more injuries to children and others playing on such surfaces.
- Greater susceptibility to stresses, such as traffic, high and low temperature injury, moisture stress, insects, diseases, and other pests.
- The turf will have poor traffic tolerance.
- There may be an increased tendency to form thatch.
- There may be more weed problems.
- A poor quality turf will result.

Some soils are more susceptible to compaction than others. As silt and especially clay content increases, the soil can be compacted more easily than those higher in sand. As the soil moisture increases, the susceptibility to compaction will increase. Of course, heavy equipment which exerts an intense amount of pressure on the turf will result in more compaction than if lighter equipment were used. Obviously, as the site is subjected to more traffic, more compaction will occur.

A good example is the edges of sidewalks or other traffic areas where the soil is highly compacted and knotweed or annual bluegrass predominates. The way turf maintenance equipment is operated can play a role in greater compaction. And a football field on which 200-pound athletes play ball will be subject to greater compaction than a turf area frequented by 50-pound children. Vegetative cover, particularly where there is a dense turf with some thatch, can absorb some of the pressure applied, reducing susceptibility to compaction.



Salsco Model 30-12.

THATCHY TURFS. Thatch is that light brown layer which extends between the green, growing portion of the turf and the soil beneath. Some thatch (1/2-inch or less) is considered desirable for good resilience and wear tolerance, but more than 1/2-inch can result in problems. Thatchy turfs often are shallow-rooted as the roots find it easier to grow in the thatch layer than in soil. This makes the turf more sus-

not too thick.

There are other points to consider in using core cultivation. There are many different types of core cultivation tools available on the market and more are coming. Some of these tools are quite effective, while others are essentially ineffective. Consider the depth of penetration of the tines. If a coring unit does not penetrate to a depth of at least 2 inches (preferably deeper), very little

The number of passes needed will not only depend on the equipment to be used (tine size, spacing, and depth), but also on the degree of soil compaction and thickness of the thatch layer that exists. The more soil brought to the surface and deposited on the thatch, the greater the effect on the thatch layer.

ceptible to stresses, particularly moisture stress and related problems as mentioned for compacted soils. Insect and disease activity are often greater in thatchy turfs. And some herbicides and insecticides are less dependable in thatchy turfs.

CULTIVATION. Core cultivation (also called aeration) removes a core of soil from the turf, usually to a depth of 2 to 3 inches. Hollow tines or various spoons are used on a variety of equipment to remove these soil cores. The cores are deposited on top of the turf, but may be removed with certain types of equipment. Advantages of core cultivation include:

- Improved rooting.
- Better moisture stress tolerance.
- Provides improved aeration for roots and microorganisms.
- Can stimulate turf growth to some degree in old turfs.
- Aids significantly in thatch control.
- Can break up soil layers near the surface which may limit rooting.
- May improve resilience.
- Improved water infiltration and less runoff.
- Contributes to deeper penetration of fertilizer and lime or sulfur.
- Can be used effectively in overseeding or renovation if the thatch layer is

soil is removed. This does little good for the turf, especially if the thatch is quite deep. Further, the tine size and spacing are important. The figures in Table 1 are very revealing, regarding the percentage of the surface of the turf area which is affected by different tine sizes and spacings.

For example, a 3/4-inch tine size (inside diameter) with a 4-inch by 6-inch tine spacing, only removes soil from 1.8 percent of the turf surface. In order to have any significant impact on the turf, it may be necessary to make two or three passes with such a piece of equipment. The number of passes needed will not only depend on the equipment to be used (tine size, spacing, and depth), but also on the degree of soil compaction and thickness of the thatch layer that exists. The more soil brought to the surface and deposited on the thatch, the greater the effect on the thatch layer. And the more holes and the deeper the holes left in a compacted soil, the greater the improvement in rooting and other benefits.

If the cores are left on the surface they can be unsightly. On most turfs, the cores will break apart with normal use and maintenance. On more highly groomed sites, it may be wise to remove the cores. This will entail separating the thatch from the soil with a verticutter or similar tool and/or by dragging with a drag mat, then removing the thatch component. Remember that removing the cores results in loss of the benefits from the soil in the cores as a topdressing source for the thatch.

Coring should be done at the proper soil moisture content to make sure the equipment is operating properly. If the soil is too dry, some coring equipment will not penetrate deeply enough to be of any value, especially in the compact-

Tine diameter	Surface exposed	Percent of surface exposed			
		2X2*	2X4	4X4	4X6
.25 in.	.05 sq. in.	1.2%	0.6%	0.3%	0.2%
.50 in.	.20 sq. in.	5.0%	2.5%	1.3%	0.8%
.75 in.	.44 sq. in.	11.0%	5.5%	2.8%	1.8%
1.0 in.	.79 sq. in.	19.6%	9.8%	4.9%	3.3%

*Spacing between tines is 2 inches by 2 inches, etc.

Table 1. Effect of tine size and spacing on percent of soil surface exposed by core cultivation.



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ed areas most in need of the benefits of coring. If the soil is too wet, on the other hand, the coring equipment may do more harm than good, particularly if the wheels leave ruts in the soil or the equipment causes more compaction.

The practice of coring does disrupt the turf surface to some degree. It may also interfere with its normal use. Some physical injury to the turf may result. Coring may also leave the turf more exposed to stresses and can provide a place for weed seeds to germinate or cutworms to get into the soil. Some research has also suggested that coring may disrupt preemergent herbicide treatments.

A word of caution. Some equipment on the market is simply not effective and is essentially a waste of money for both the company selling the service and the customer. Use of such equipment will probably result in disappointed customers and discontinuation of the service. We cannot afford to lose the benefits of core cultivation in turf maintenance. Several years of treatment will probably be needed to achieve the major benefits of relieving compaction and contributing to the control of thatch. Check out the equipment you wish to purchase to be sure it works under a wide range of soil and turf conditions so you can serve your customers well. An ineffective piece of equipment may allow a very competitive bid, but in the long run that will hurt the lawn care industry.

TIMING. It is best to use core cultivation when the grass is growing actively enough to recover from an injury and grow back over the coring holes quickly. There must also be adequate soil moisture for the equipment to operate effectively. This normally means spring and fall, depending on the grass, but it can be done in warmer weather if the turf is irrigated or sufficient rainfall occurs for recovery and growth.

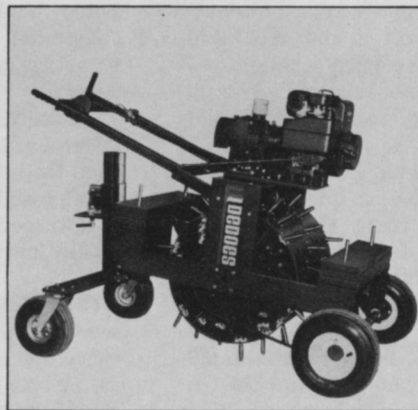
Summer cultivation would coincide with reduced maintenance needs for

Some equipment on the market is simply not effective and is essentially a waste of money for both the company selling the service and the customer. Use of such equipment will probably result in disappointed customers and discontinuation of the service.

lawn care and maintenance firms, but soils may be too dry for good tine penetration. A further advantage of coring in the summer is the lower probability that weeds will germinate, which would be a problem with spring and fall treatments. However, spring and fall are periods when root growth into the



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coring holes will be much more active, hopefully resulting in a stronger plant going into the summer stress time.

Considering all these factors, it seems late spring and/or late fall are appropriate times to core cultivate cool-season turfs that are not irrigated.

These are normally times of limited stress, lower potential for weed germination, and growth is still active enough to cover the coring holes quickly. If sufficient irrigation is available, coring during lower stress periods in the summer is an alternative.

Of course, no type of cultivation

should be done when the turf is in a wilting condition, near wilting, or when a given turf is likely to become stressed by disease. An example would be a leafspot-susceptible Kentucky bluegrass which might be weakened by coring if cultivated during prime leafspot weather. One cultivation per year should be adequate on most general turfs unless a very severe condition exists.

In renovation and overseeding procedures, it will be necessary to make many passes over the area in order to bring enough soil to the surface to provide a reasonable seedbed. The number of passes needed will depend on the type of equipment used and how much soil is needed in the renovation project. This may require as many as 10 to 15 passes over the area.

CONCLUSIONS. Cultivation is a very important management practice that should be used on more turfs, although it is not needed on all turfs. Specific site conditions will determine the need for coring. It should be considered an annual practice at a frequency determined by the lawn's condition.

The benefits of cultivation will be seen over a period of years and will seldom show turf improvement in one year. Core cultivation can improve thatch and compaction problems only over a period of years. Remember that the real benefits of cultivation are beneath the turf. This practice must be sold on the basis of its contribution to producing a beautiful, functional, and stress tolerant turf when utilized along with other management practices. —
Dr. P.E. Rieke

The author is a member of the Department of Crop and Soil Sciences at Michigan State University, East Lansing, Michigan.

WEED SEEDS

Weed seeds come from a variety of sources, but there is a good chance they can be traced back to the origins of your client's topsoil.

Weed seed populations in the soil are variable. The type of seed present is closely associated with the history of the land. Land that has been used for pasture will contain pasture weeds; land that is cultivated will contain cropland weeds.

Weed seed found in the soil does not germinate continuously, but follows a cyclic pattern. Following soil cultivation or seedbed preparation for lawns, about 5 percent of the total seed reservoir in the upper soil layer will produce seedling weeds. Weed seedling species composition varies with time of year and is closely associated with soil temperature, soil moisture, and lawngrass competition.

Research at Scottsbluff, Nebraska was conducted by scientists at the University of Nebraska on soil that had been under cultivation for 74 years. Crop rotation during the last 20 years was corn, fieldbeans and sugarbeets with alfalfa for three years interspersed within the rotation about every 10 years. The soil was a sandy loam.

The total weed seed reservoir averaged about 250 seed per 2.2 pounds of soil from the upper 6 inches. On the basis of one acre of soil to a 6-inch depth weighing 2,000,000 pounds, this would amount to about 228 million weed seed per acre or in excess of 5,000 per square foot of soil surface.

Nineteen species of weeds have been found in this soil. Those found most frequently were: redroot pigweed, common lambsquarters, and common purslane. Seed from these weeds accounted for over 85 percent of the total. The following weed seed were identified in a recent fall sample:

Weed Species	Number of weed seed/ 1,000 sq. ft.
Barnyard grass	800
Brassica spp.	40,000
Buffalobur	4,000
Common Chickweed	800
Common Lambsquarters	1,280,000
Common Purslane	1,440,000
Common Sunflower	6,000
Hairy Nightshade	20,000
Kochia	40,000
Redroot Pigweed	1,280,000
Russian Thistle	4,000
Shepherds Purse	180,000
Smooth Groundcherry	80,000
Stinkgrass	80,000
Wild Buckwheat	20,000
Yellow Foxtail	120,000
Total	4,595,600

If this land were used for residential development or sold as topsoil for lawn establishment, it would contain close to two weed seeds for every lawngrass seed used in seeding a new lawn, based on a seeding rate of 2 pounds of Kentucky bluegrass per 1,000 square feet. If 5 percent of these weed seeds germinate along with the lawngrass seed, there can be an expected weed population of close to 230,000 plants per 1,000 square feet. Some of these will not tolerate lawn mowing, but chickweed, purslane, shepherds purse, and foxtail can be persistent in lawns and require use of herbicides for control.

Actually, this cultivated farm soil may well contain fewer weed seed than some common sources of topsoil used for home lawns. Weeds in new lawns come from seed present in the soil; very few ever result from use of lawnseed that is contaminated with weed seed. High quality lawnseed is virtually free of weed seed.

DISTRIBUTION. Annual weeds depend on a prolific seed production for survival. Seed of many weed species either mature or can enter a state of dormancy that assures an extended life span in the soil. Weed seed shed onto the soil surface may remain there to be incorporated into the profile by natural or artificial means. The fate of viable weed seed — germination, dormancy, or loss of viability — is determined by both internal physiological conditions and external environmental conditions imposed by the soil.

At the size scale of most seed, the microtopographic variability of the soil surface regulates seed germination and seedling establishment by creating a variety of microsites with different moisture/aeration conditions. Research by Iowa State University scientists in Boone County, Iowa has been concerned with effects of conventional tillage and reduced tillage on depth distribution of weed seed and their location in relation to soil aggregates of different sizes.

In spring samples, 85 percent of all weed seed in reduced tillage fields and 28 percent in conventional tillage were found in the top two-inches of soil. Conventional tillage incorporated weed seed uniformly into various soil aggregate classes. Reduced tillage caused more weed seed to be found in the unaggregated fraction of the soil.

As topsoil is sold for grading and establishment of new lawns, weed seed content can be expected to vary depending on previous tillage practice. Reduced tillage concentrates weed seed near the soil surface and places seed where conditions for germination and seedling establishment are most likely.

SOIL AGGREGATES. Soils vary from place to place across the surface and with depth down through

the soil profile. Productive soils contain particles that are well-aggregated. These aggregated soils have a well-aerated matrix of large pores and generally have a variety of different sized aggregates.

The aggregates themselves are cemented together and contain small sized pores which retain water during most of the year. Environmental conditions inside and among aggregates differ. This has an important effect on weed seed germination, continued dormancy and viability.

Weed seeds that remain in the soil for a period of years become associated with soil particles and are incorporated into soil structural units. Although the requirements for germination of all seed of a species is similar, the time at which these requirements are met in the soil may be different as dictated by the charac-

teristics of the seed-soil associations.

Research at Iowa State University has demonstrated that new weed seed on the soil surface or in the large pore spaces of the soil will be in a well-aerated environment. Thus, seed germination is a function of the moisture supply and the rate of evaporative water loss from the seed. Seed incorporated into soil structural units are exposed to high moisture and low oxygen levels which are more conducive to seed dormancy than to germination. Therefore, once weed seeds are within the lawngrass root zone, they become potential spoilers of turf quality for years to come. — *Dr. Eliot Roberts*

The author is director of The Lawn Institute in Pleasant Hill, Tennessee.

IDENTIFYING AND CONTROLLING SOME COMMON WEEDS

Once weeds are found in the lawn they must be properly identified and their growth habits understood. Only then can the proper herbicide be selected and used to obtain control. Selective control of weeds with little or no injury to lawngrasses is an important feature of most herbicides. Check with your supplier for the recommended product to control the following common weeds.

CHICKWEED.

Chickweed is an annual. It grows well on poorly drained soil and in shady locations. It is not as competitive when temperatures are high. Roots are weak and shallow, but are numerous as the weed spreads and roots at the joints along each runner. Numerous seeds are produced that germinate in early spring. Chemical control during the spring is effective. Use MCP or dicamba.



DANDELION.

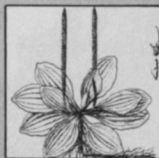
Dandelion is a perennial. It grows actively during cool weather and develops a deep tap root that makes it very persistent and difficult to cut out of the lawn. Flowers start to form in early spring and continue off and on to late fall.



Their elevated yellow display and subsequent white ball of seed make them among the most undesirable of lawn weeds. Fortunately, they are easily controlled with herbicide during either spring or fall. Use 2,4-D.

PLANTAIN.

Plantain is a perennial. It grows vigorously during cool weather to form large leaves in a rosette-type growth. These are oval-shaped with prominent veins. In early summer, seed heads form above the turf. These display a long column of seed that is unsightly. New seed heads reappear about as fast as mowing removes the old ones. Plantain is easily controlled by herbicides applied in either spring or fall when growth is active. Use 2,4-D.



YARROW.

Yarrow is a perennial. It has fine, delicate, fern-like leaves, and spreads by underground stems. An exceptionally aggressive weed, yarrow can form dense patches that spread below the clipping height set on the mower. Where grown away from the lawn, yarrow reaches a height of 1 to 2 feet. Because of its fine lacy leaves, which are difficult



to wet with herbicide, control is difficult and often requires repeated treatments. Use 2,4-D.

GROUND IVY.

Ground ivy is a perennial. It spreads during cool weather and in some shady locations makes an excellent ground cover. Poorly drained soil is suitable for its growth and development. It will persist in either sun or shade. Ground ivy spreads by both creeping stems as well as seed from lavender flowers that are produced in early spring. Usually spot treatment with herbicide in spring or fall is necessary for control. Use MCP.



CLOVER.

Clover is a perennial. Some gardeners like it in the lawn and actually seed white clover into the turf. It is a legume that enriches the soil with nitrogen. Clover spreads by both above and below ground stems that root easily under cool moist conditions. It grows below the clipping height set on the mower and easily crowds out weak lawngrasses. Characteristic leaves and white to pinkish flowers are easily identified. Fall herbicide treatments are usually most effective. Use MCP or dicamba.



CONTROLLING COSTS

No matter how hard you wish, there's no magical formula for managing production costs of your business. But just because you can't plug numbers into an equation, that doesn't mean there aren't any guidelines or tips to help you control costs.

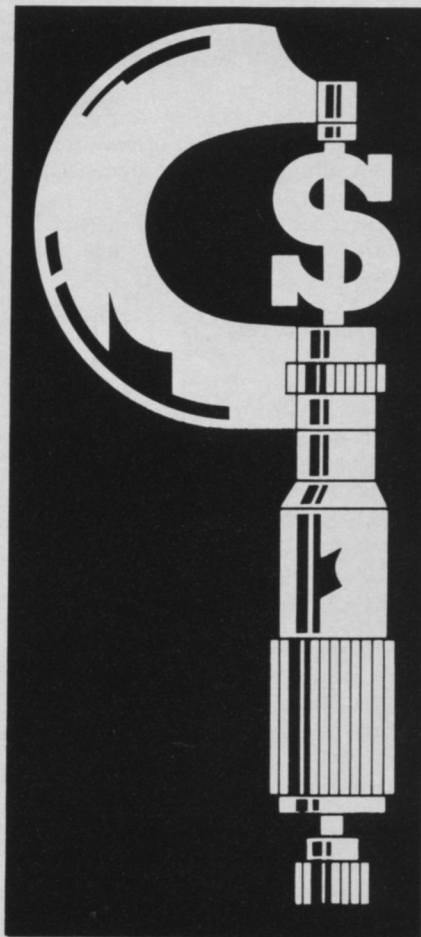
It's so easy to pass the buck. When profits are down and business expenses up, it's almost natural to blame the economy or your competitor. But according to Dun and Bradstreet, about 90 percent of businesses fail due to managerial inexperience or error — not external forces beyond their control. Many of those errors are from failure to budget, monitor, and adjust company expenses.

In the lawn care and maintenance industry, several expenses, such as gasoline and insurance, are not flexible. You can't quit filling the fuel tanks on your trucks and mowers, nor can you afford to drop liability protection. Yet despite certain fixed costs, there are still ways to trim your operating expenses — and even some tactics to better confront those less-flexible line items.

Most lawn care and maintenance professionals agree that the first area to look at is equipment. "Buy the best that you can afford," explains Brian Gambill, President of The Groundskeeper in North Augusta, South Carolina. "I think in the long-run that's going to save you money."

What probably is even more important, he says, is implementing a good preventative maintenance program. "It's worth every penny that you're going to put into it, because it's going to save you down-time and from running out of parts at the last minute." Gambill finds his company saves a lot of money by keeping vehicles and equipment in top-notch condition and by doing any repairs themselves.

"I've had more problems taking equipment somewhere to have it fixed than when we do it," he explains. "We're pretty mechanically inclined, which obviously helps. But basically, when we buy a piece of equipment, we



buy a service manual to go along with it."

Carol Miller, Co-Owner of Acme Maintenance, Acme, Michigan, says her organization puts more of its dollars into preventative maintenance than into new equipment, and finds the company ends up saving money.

In addition, this year the firm hired a full-time employee to do nothing but

vehicle and equipment maintenance and repair. "It helps a lot," she says, "because if there's a breakdown on the job, he can take care of it. We don't have as much breakdown and the equipment stays in better shape because he checks it every night. That keeps our outside repair work that we have to have done at a lower cost."

To further watch equipment costs, as a rule the company does not buy new trucks. The issue of new versus old will probably always be debatable, with many lawn care and maintenance operators proclaiming they "don't want to buy someone else's troubles." But that hasn't worried Acme. Buying used trucks in "excellent" condition, Miller says, eliminates the "big chunk" of money that's initially required to purchase new vehicles.

"We've seen people buy new trucks and three months later some guy's banged it up," Miller says. "And it can happen quite easily when they're running lawn equipment. They'll hit the side of the truck trying to load in a trimmer or hit the doors against something."

When it comes to their mowing equipment, the company tries to refurbish its older mowers with new engines if their deck tops are in good condition. Acme also finds that it can save money on mower parts by going to a local machine shop instead of shopping manufacturers' shelves. Manufacturer parts can be very expensive, Miller explains. "Sometimes we can buy a blade that's exactly the same, but maybe the hole in the center isn't quite the right size. One of the local machine shops can fix it and it still costs us less than what the manufacturer charges for the same blade," she says.

Like working with local machine shops, it's not a bad idea to have some

connections with mechanics. According to Ed Wandtke, Senior Consultant for All-Green Management Associates, Columbus, Ohio, hiring a "moonlighting" mechanic to handle your preventative maintenance and repairs is usually less expensive than investing in a full-time employee.

As a result of his experience as controller of a trucking operation, Wandtke found one of the most effective cost-cutters to be handling equipment and vehicle maintenance after-hours. "If you've got a Ford, Harvester, GM, or whatever," he explains, "you may find you can rent a mechanic at night. They'll come and work at your site with their tools, and then be able to purchase all the applicable parts you need to do decent preventative maintenance and minor maintenance programs."

Many truck dealer and body shop mechanics are looking for extra money by spending anywhere from four to six hours an evening free-lancing their services, according to Wandtke. He also notes that many companies pay their mechanics a flat rate for a given amount of work. And if a man's efficient and gets his job done in five hours, Wandtke says, he's usually looking for more work.

Wandtke believes a meaningful preventative maintenance program is critical in the lawn care and maintenance industry. "It's not enough just to follow the manufacturer's guidelines. We usually emphasize that each individual who drives a vehicle has a checklist like an airplane pilot that he must walk

Wandtke suggests lawn service operators take advantage of part-time employees rather than overstaffing with full-time personnel.

through before taking the vehicle on the road and when bringing it back in the evening," he says.

One of the ways to enforce such a standard is to penalize the driver whose vehicle breaks down based on some mechanical problem that should've been caught on the daily checklist. "There's nothing worse than getting a call saying, 'The truck won't start because there's no water in the battery,' when that's one of the things that should be checked each day," he emphasizes.

Labor is another area that needs to be scrutinized. Wandtke suggests lawn service operators take advantage of part-time employees rather than over-



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staffing with full-time personnel. Part-time workers, he says, make "excellent supplemental employees."

Of course, part-time help is not always easy to find. But Wandtke recommends seeking policemen and firemen as part-time employees, who often have schedules that accommodate a few extra hours of work a week. "They're very productive and effective, and *very, very* responsible," Wandtke notes. "We've found they can drive the equipment, know how to handle it, and care about it, especially if you're driving tankers. They also work very well as crew chiefs if you're in the maintenance side of the business."

Good help *period* is often difficult to find, whether it is part-time or full-time. "Everybody can cut lawn until it comes time to do it," says Carol Miller. "Especially when they find out it takes a lot more to cut for eight hours than it did for a half-hour when they were 13 years old."

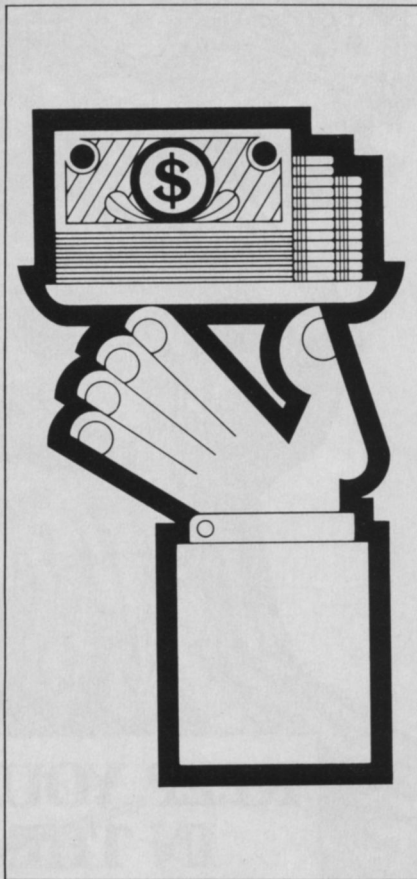
This year her company, Acme Maintenance, has eliminated most of the hassle of hiring good workers, while cutting the cost of doing so, by utilizing the services of a local employment agency. Acme tries to watch the amount of employee overtime in an effort to curb labor costs, yet the company still needs some extra help during the year, particularly in the spring for lawn clean-ups and in the fall for leaf clearing.

Like many other lawn care and maintenance operators, Miller has often encountered "fly-by-night" employees who may work a day, a week, or sometimes even walk off a job, which is not only frustrating but expensive. Employment ads must then continually run in the newspaper to seek new help, the

Acme pays added attention to scheduling to assure that no one will be standing around jobless at a work site.

cost of keeping records on the scores of different employees increases, and the company wastes man-hours when constantly searching for new employees.

Many of these problems have been alleviated for Miller by subcontracting for labor. Although she's paying about \$5.25 per temporary person instead of the \$3.35 minimum wage, she's saving in the long-run, she explains. "It costs a little bit extra (in straight pay), but I do not pay workman's compensation, I do not pay the liability on them. I just okay their time cards, turn them over to the employment agency, and they



are the payer," Miller says. She no longer has to worry about spending lots of time typing up W-2 forms at the end of the year for 100 employees, out of which only 15 to 20 spent at least six months working for her.

And when three people don't show up on a Monday morning, she adds, she doesn't have to figure out how to get an ad in the paper. "I just call the employment office and tell them I need three more guys the next day."

To make efficient use of employees' time, Acme pays added attention to scheduling to assure that no one will be standing around jobless at a work site. "We schedule our jobs according to their sizes," Miller explains. "We don't want to send three guys to a job that only requires two."

Route scheduling in general has undergone some changes at Acme Maintenance. Previously, the company tried to accommodate customer's requests for favored mowing days, but that policy has ended. "We've become almost hard-nosed with people who want their lawn cut on a certain day," Miller says. "Sometimes it's just not feasible. The requests are 20 miles apart and they all want to be cut on the same day." Unless it's a special occasion, such as a wedding, Acme tries to schedule service for all accounts in a given area on the same day.

Routing has traditionally been the target blamed for fuel waste and

'misuse. However, according to consultant Ed Wandtke, even if major mistakes are made in a day's distribution of work, the fuel losses are not that significant. Greater gasoline consumption is caused by the mere fact that lawn service companies put more in-town miles on their vehicles than highway miles. If residential lawn care is your mainstay, there's not much you can do about that. However, that doesn't mean you should neglect to take advantage of other money-saving tips in this area.

For example, sit down with your accountant and ask him about federal and state fuel taxes. A considerable amount of money can be saved in this area, says Wandtke, if you keep separate logs for your highway and non-highway mileage. "One of the thoughts for the future might be to get separate gas tanks, so that your off-the-highway gallons are accounted for and you get the tax credit for off-highway use of fuel," he notes.

In addition to the obvious ways of either having an underground fuel tank on company premises or pumping your own gasoline, there is another alternative to saving fuel costs — while endearing yourself to a local gas station owner at the same time. Select a gas station in town who will offer you a cheaper gasoline rate if you contract with him for buying a certain number of gallons each month. Displaying your loyalty by purchasing all of your gasoline from him will make both of you happy.

As for the chemical side of the business, to maintain tight control of operating expenses a watchful eye must be kept on the relationship between acres treated and chemicals used. Inventory control is crucial, says Wandtke, noting that it's often the first operation to break down in most lawn service businesses. "They either don't know that they should be doing it or else they kind of allow for a little slop and figure that's adequate," Wandtke says. "In other words, they're trying to fly by the seat of their pants without really quantifying the actual usage of chemicals versus the square footage being treated."

The attitude toward how and when chemicals are applied is also changing, not only to conserve costs but to shield operators from lawsuits in today's "anti-chemical" society. "Many people are moving to selective application of insecticides rather than broad-based distribution of insecticides," Wandtke notes. While wanting "to hedge" any legislation banning all broad-based spraying, the industry is also concerned about the technique's cost.

"Cost-wise it's very expensive to broad-base any insecticide. And so any time we can limit them to where there are definite problems, we're going to improve the profitability of the firm,"

says Wandtke.

One of the first business expenses that winds up getting cut by most lawn care and maintenance firms is advertising. The costs associated with various forms of advertising have escalated tremendously over the years, and are directly related to the rising cost of acquiring a new customer, which is up from about \$30 to between \$52 and \$54.

Although many companies claim they don't need to advertise — word-of-mouth suffices — Wandtke believes these firms are doing themselves a great disservice. "Many people have not recognized that if you don't put out at least 4 percent to 5 percent a year in advertising, you just will not retain your existing customers nor get the adequate number of inquiries to continue the growth of your firm," he says.

One of the greatest fallacies in this industry, he believes, is that once you secure a comfortable number of accounts, it's okay to stop advertising to your customers. "People forget that customer communications is maybe more important once you have them than the day you worked to get them," Wandtke explains. "Now that you have them, you have to educate them, make sure they understand what it is you're doing, and what it is you can't do."

He strongly believes that if a lawn service operator is not spending between 4 percent and 5 percent of his revenue on advertising, he's not achieving optimal benefit for his company. On the other side of the coin, he says, "If you're spending significantly more than that, you may be overspending very needlessly."

Wandtke believes other conveniences should be compromised temporarily before taking an axe to the ad-

Wandtke believes other conveniences should be compromised temporarily before taking an axe to the advertising budget.

vertising budget. For example, he says, "You can buy chemicals pre-mixed or you can mix them yourself. It definitely costs something to buy them pre-mixed." The trade-off — mixing your own chemicals to allow for sufficient advertising funds — is certainly worth it, he says.

Lawn service professionals can use promotional ploys to other advantages. Wandtke has discovered a customer incentive plan which reduces customers' costs and helps lawn service professionals control overhead and interest expenses. The idea is a pre-payment pro-

gram which entitles customers to a discount when they pay for their year's service before their first treatment is made.

"If you offer a pre-payment discount," Wandtke explains, "there's a high probability that you will get an influx of cash that's very significant." That money could be invested, perhaps turning a profit for the company if interest rates are good, or used to lighten the load of down-payments on new vehicle and equipment purchases.

According to Wandtke, lawn service companies on the East coast are offering 6 percent to 7 percent discounts for pre-payment of service, and getting anywhere from 10 percent to 15 percent of customers to take advantage of the program. In the Midwest, he says, the program has gone one of two ways: it's either been dropped by lawn service firms, or it's become so popular that service pre-payment is an expected means of doing business. Customer receptiveness in the lawn maintenance sector, however, has not been as high. Wandtke attributes that fact to the size of the typical lawn maintenance customer's bill — it's generally four to five times larger than the average chemical lawn care client's invoice.

No matter how many different ways you look at cutting production costs, one of the greatest problems not always recognized in the lawn service industry is that you need to charge a fair price, Wandtke says. "You can do all the controlling you want, but the cost may become very fixed," he says. "And one of the things most people don't take a look at is the actual cost on a unit basis of servicing the large number of acres they treat during the course of the year."

To maintain an accurate grip on your business expenses, you have to identify your costs and be attune to what the marketplace will pay, notes Wandtke. "The only way to find out if you're really on target is to have a budget." Of course, any budget has to be flexible, especially in an industry where weather has a critical effect on performance.

His key to profitability rests on the sum of three major production costs — chemicals, labor, and all vehicle expenses (which would include depreciation, interest, fuel, oil, repair, maintenance, etc). "If we can get the sum of those three major cost areas down to about 60 percent," he says, "the business will make a very sizeable profit."

It's not a secret formula, nor a magical equation. But it does give you a goal to strive for. In the lawn and maintenance industry, the quest for delivering quality service without raising costs is never ending. — *Vivian Fotos Rose* ■

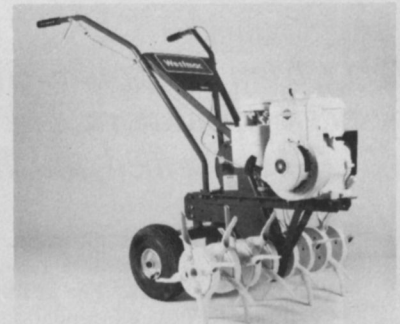
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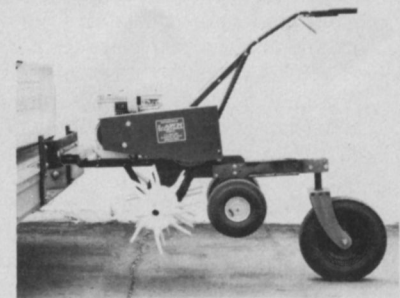


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VICTORY IN WAUCONDA

It has been a long time coming, but some are claiming a landmark legal victory for pesticide applicators. The case of 3PF versus the Village of Wauconda, Illinois has been settled and the judge has declared the town's ordinance invalid.

Lawn care applicators in the Wauconda, Illinois area have reason to celebrate. The Pesticide Public Policy Foundation (3PF) won its case against the Village of Wauconda in a judgement handed down on the afternoon of August 14,

declaring the Wauconda ordinance invalid. 3PF's Executive Director David Dietz was probably as elated by the decision as the lawn care operators he represents. "As you can well imagine, we are about ready to pop champagne corks!" exclaims Dietz.

Just in case you have been living in an information void for the past year or so, 3PF has been engaged in a court battle with the Village of Wauconda over the validity of the town's pesticide application Ordinance Number

(continued on page 55)

3PF ON CAPITOL HILL

When David Dietz is not battling regulatory brush fires in places like Wauconda, Illinois, he is using his influence as Executive Director of the Pesticide Public Policy Foundation (3PF) to sway legislators in Washington D.C. But don't confuse Dietz with the swarm of paid political lobbyists on Capitol Hill; he would rather consider himself an information disseminator. "We try to provide information and a perspective on the green industry and urban and suburban users to various folks," says Dietz.

Rather than actually lobbying against a piece of unfavorable legislation, Dietz will help 3PF members do their own lobbying. When a "bad bill" comes to Dietz's attention, he first analyzes it and then provides the affected pesticide users with information to use in their own lobbying efforts. Dietz does approach the United States Congress with something akin to lobbying.

"We go directly on the (congressional) record for the green industry and urban/suburban pesticide use interests," says Dietz. "We are on the record now in terms of FIFRA changes that have been proposed or are being circulated within the House Subcommittee on Operations Research in Foreign Agriculture."

Dietz says 3PF has also provided similar information to EPA and the Council on Environmental Quality.

Dietz has been involved in the FIFRA reauthorization process, first in opposition to factions interested in changing the current use of restricted use pesticides. "Right now, if you are under the direct supervision of a certified applicator, you are permitted to use restricted use pesticides," says Dietz. "The proposals floating around will change that and mandate that anyone using a restricted use pesticide would have to be a certified applicator."

The second point Dietz is addressing in the FIFRA proceedings is local government regulation of pesticides. He says FIFRA of 1972 made it clear that Congress did not intend local governments to enact their own pesticide use ordinances. "Our opinion is that very plain language in FIFRA is needed to provide that kind of exclusion," says Dietz.

Unity is important in any political effort and Dietz says much of 3PF's political clout on Capitol Hill comes from its association with a larger group called the "FIFRA Coalition" which is composed of 43 different organizations. The FIFRA Coalition backs 3PF on the two specific issues mentioned previously.

Even if you have some political clout on your side, you still have to make your message to Congress more important than the opposition's message. "You try to do it by making your message very concise, common sense, and reasonable," says Dietz. "You hope they hear from their constituents to know their is local as well as national interest in the issue you are supporting."

Once your cause has unity, clout, and an effective message, you have a steady flow of funds to keep the ball rolling. Dietz says first of all, you have to have the funds to put constituents in physical contact with the legislators. Second, you have to have funds to put together research and intelligence gathering to assimilate a powerful message. Third, funding is crucial in terms of communicating the progress of the battle to 3PF members.

To put the funding situation into perspective, in terms of what the pesticide user groups are up against, it is interesting to note that the Sierra Club has \$18 million in backing and the National Defenders of Wildlife have an annual budget of \$43 million. 3PF muddles through with a meager annual budget of \$150,000. "In that respect," sighs Dietz, "we are what you would call the disadvantaged minority."

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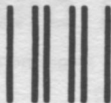
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VICTORY IN WAUCONDA

(continued from page 52)

1984-0-31, passed July 3, 1984. The ordinance required applicators to register and obtain a \$25 per year permit from the village, prohibited pesticide application in winds greater than 10 miles per hour, and required warning signs to be posted for 72 hours after an application.

3PF's case was pled by the legal team of William Richmond, Gerald Angst, and James Warchall, attorneys with the prestigious Chicago law firm of Sidley and Austin. "We attacked the ordinance on several grounds, including that it was preempted by FIFRA and also that it was invalid under state law," says James Warchall. He says the judge's decision was consistent with a couple previous decisions which held local ordinances regulating pesticides invalid under state law.

But Warchall is disappointed that

The lawsuit cost 3PF and its members \$30,000 to \$35,000 in court costs and legal fees. But that expense may not be too unreasonable considering the high-powered legal team 3PF chose.

the judge's ruling did not reach the more important questions from the industry's point of view. Namely, whether or not such pesticide ordinances are invalid under federal law, in which case they would be invalid nationwide. But he concedes that this is certainly a step toward such a ruling.

The fact that the court which ruled on the case was a Federal District Court — the United States District Court for the Northern District of Illinois — should carry some precedential weight in similar cases in the future. But Warchall is not so sure. "The federal courts are sometimes thought to have precedential value, but I'm not sure it makes a real big difference," says Warchall.

Dietz is a little more optimistic about the message conveyed by the decision. He feels it will at least stop other local governments in Illinois from attempting to regulate pesticide applications, even though the decision is only legally binding within the district court's territory in Illinois. "The message is pretty clear to local governments in Illinois that they are not authorized to enact local regulations," says Dietz.

He is also sure it will set a "pretty good" precedent for the rest of the nation as well. "This is the first time a federal court has looked at this issue," notes Dietz. "To have the judgement on our side, even though it is based on a state law, there is good language in the decision that talks in terms of uniformity and the need for a good federal/state regulatory framework. I think the logic of the decision will have good application in other areas of the country." Dietz argues that because state court judgements in Massachusetts, New Hampshire, and New York have held similarly, that is additional reason

to believe in the broader precedential value of the Wauconda decision.

Although 3PF's lawsuit carried five separate counts, the case was actually won on only one of those counts. Judge Ilana Diamond Rovner ruled in favor of 3PF members because she felt the Wauconda ordinance was preempted by two existing Illinois state laws that control pesticides and pesticide applications. Two of the five counts were not even ruled on. "She never did reach the issue of preemption under FIFRA, nor did she reach the issue of preemption under the Commerce Clause — a constitutional question we had raised,"

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noted Dietz.

Still, Dietz finds the bottom line satisfying. "The key language to us in her conclusion was that she found the Illinois laws indicated a legislative desire for uniformity of pesticide regulation between Illinois and the federal government. And that the legislature in Illinois intended that only the state regulate pesticides within Illinois."

In her "Memorandum Opinion and Order" Judge Rovner wrote that the Village of Wauconda's motion to dismiss 3PF's suit is granted in part and denied in part. The motion was granted because she threw out some counts, such as the request for damages for which she could not find legal precedent. Therefore, she ruled that "the Foundation (3PF) has standing to sue only for prospective relief; it lacks standing to sue for a declaration that its members are entitled to damages."

Another count dismissed by Rovner invoked the Equal Protection Clause which is designed to protect one party from burdensome requirements which are not applied to other similar parties. 3PF pointed out that the ordinance imposes no requirements on other groups of pesticide users, such as non-commercial applicators, homeowners, landlords and tenants of non-public buildings, owners of golf courses and cemeteries, and farmers. However,

Rovner held that it was essential to the purpose of the ordinance to single out commercial pesticide applicators.

How do local lawn care businessmen view the outcome of the case? Richard Gretz of Spring-Green Lawn Care, Naperville, Illinois, is very pleased with the victory, but he is quick to add that everything will be business as usual. "The lawn care industry, for the most part, has maintained a policy of always being willing to work with groups or local governments whenever they have felt a concern," says Gretz. He says the industry has always been willing to notify citizens of nearby lawn applications if they have requested such notification. "All this does is amplify and substantiate what we have felt all along — that the state law should preempt local regulation," says Gretz.

As one of the affected lawn care applicators, Gretz has followed the lawsuit since it was first filed on September 12, 1984. In January of this year, Gretz says both sides submitted "rather lengthy" briefs pleading the merits of their positions. Then in February a counter brief was filed by both sides which was designed to counter the other side's argument. In April, both sides filed a second counter brief and at that time the judge said she would rule on the case by June 21, according to Gretz. Unfortunately, the ruling date had to

be set back six to seven weeks when the judge became ill. Even with delays, Gretz says the ruling was relatively swift considering that 3PF's attorneys believed a decision might not be reached until sometime next year.

The victory was sweet, but it certainly wasn't cheap. Gretz estimates that the lawsuit cost 3PF and its members \$30,000 to \$35,000 in court costs and legal fees. But that expense may not be too unreasonable considering the high-powered legal team 3PF chose for representation. "Sidley and Austin is the second largest law firm in the world, but that is not why they were selected," says Gretz. "They were selected because they have category experience in federal court with EPA and environmental issues."

The Wauconda ordeal has been an educational experience for Gretz. "In working with this over the past couple of years, I always thought if an ordinance is illegal, it's illegal. But it turns out that if no one disputes it, it stands." Lawn care businessmen all over the country have been getting the same rude awakening, but perhaps the Wauconda decision will discourage other communities from enacting similar "illegal" ordinances. — *Tim Weidner* ■

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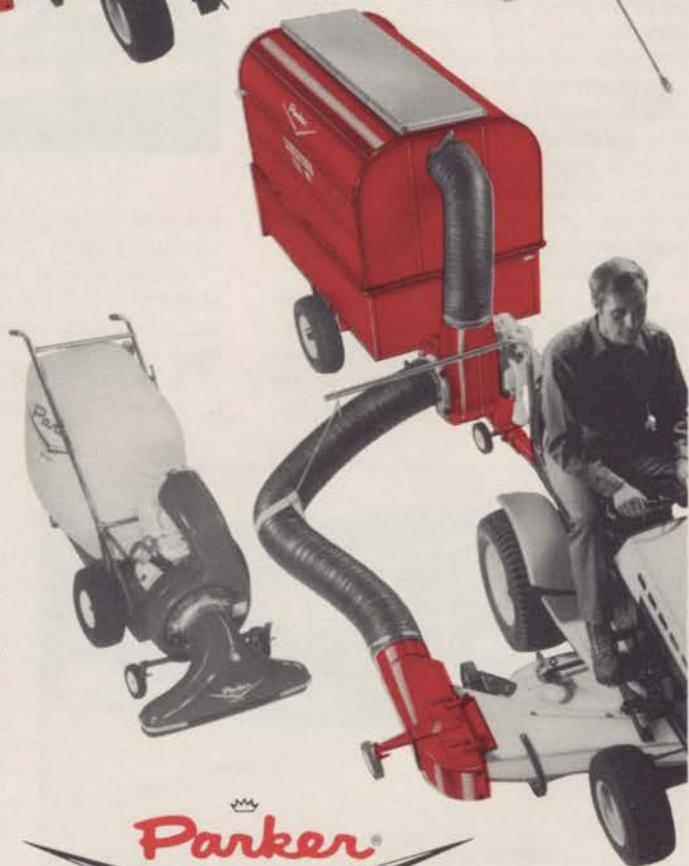
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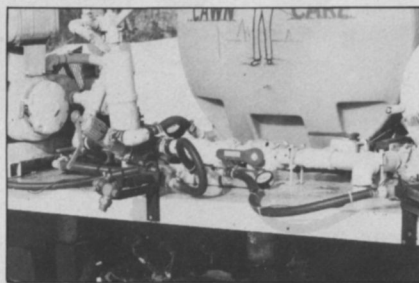
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"We used it with a spray truck with three roadside nozzles on the back," says Jensen. "We covered a path 24 feet wide and each nozzle was individually controlled by solenoids." Jensen says he used both the flake and liquid GSL materials on a large commercial account that he had only plowed and sanded in past winters. "This particular customer probably spent in the neighborhood of \$10,000 with us last winter on seven snows," says Jensen.

Jensen's customer, Tom Haas, with J.R. Stewart Construction Company, Independence, Missouri, liked the way the liquid Freezgard performed on his office park driveways and parking lots,



(above) The spray truck with roadside nozzle set-up in operation. (below) A close-up of the roadside nozzle system.



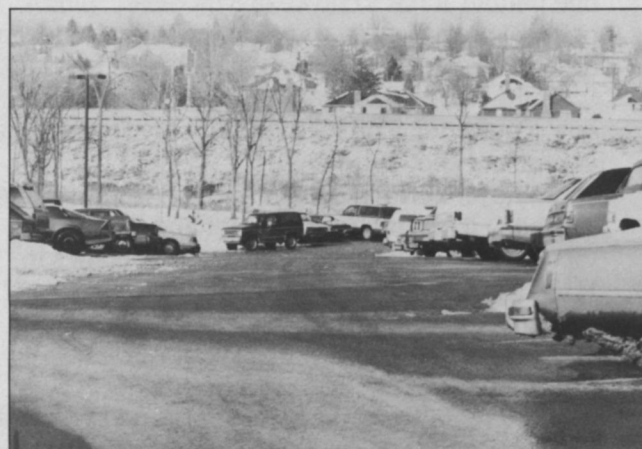
but was not impressed with the flake version, Icegard. "In fact," says Haas, "I think it just laid there. But he (Jensen) used the liquid (Freezgard) the last couple snows we had and it really did well."

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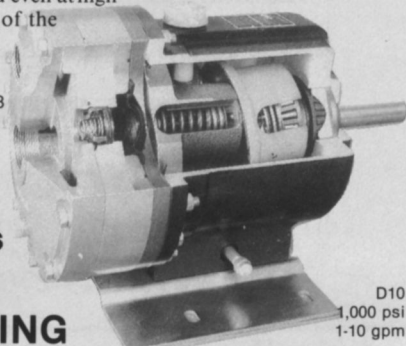
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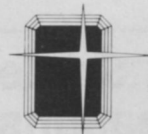


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PLCAA Conference Preview: Pre-convention coverage of the Sixth Annual PLCAA Conference and Trade Show. Features will preview educational sessions, speakers and conference exhibitions, as well as some local points of interest convention goers may want to visit.

Groundwater Contamination: The issue of groundwater contamination is a legitimate concern which has generally been linked to industrial pollution. However, there is now some question as to whether the lawn servicing industry is contributing to this problem. This feature will investigate such a possibility.

How Safe are Lawn Care Chemicals: The lawn care industry has a good safety record, but are lawn care chemicals really "safe?"

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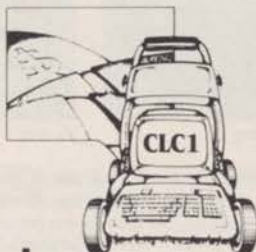
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(continued from page 61)

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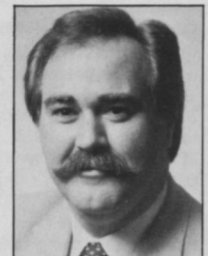
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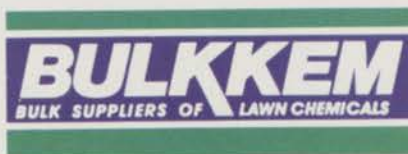
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