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# LAWN CARE INDUSTRY

Serving lawn maintenance and chemical lawn care professionals



Editor Jerry Roche (left) and Dr. John Street, Jerry Faulring and Ron Kujawa.

## New advisors

# Faulring, Kujawa and Street are named to magazine staff

The distinguished and well-known trio of Jerry Faulring, Ron Kujawa and Dr. John Street has joined LAWN CARE INDUSTRY as the first group of industry advisors in the magazine's seven-year history.

Their job will be to provide stories and story ideas to the magazine's editorial staff, as a means of making LCI better able to serve its 12,000-plus readers. They will also provide the editorial staff with a monthly critique of the magazine's content, and suggest ways to improve its usefulness to the industry.

"With the industry growing by leaps and bounds, this is no time

for its leading magazine to become stagnant," says LCI editor Jerry Roche. "Group publisher Bob Earley, myself, and the rest of the staff feel that these three men will be of invaluable assistance."

"By better serving our readers—making the magazine more valuable and more readable—this group should keep LCI at the top of its field for a long, long time."

The three represent a cross-section of interests. Faulring is president of Hydro-Lawn of Gaithersburg, Md., a chemical lawn care company. Kujawa is president of KEI Enterprises, a Cudahy, Wisc. landscape management company. And Street is an

extension agronomist at The Ohio State University in Columbus, Ohio.

"I see this as an opportunity for an individual participant to have a voice in the leading trade publication for our industry," says Faulring. "And, in so doing, assist in molding and assuring that readers get articles of top concern and interest."

Kujawa admits to being thankful for the opportunity. "I think this will help new people coming into the industry," he says, "and it will help keep LCI a well-rounded publication with interests for all people."

Says Dr. Street: "I'm going to make a strong effort to provide the magazine with the most up-to-date information on agronomic subjects, and to make sure those subjects are covered in the proper manner."

Faulring, a New York native, is to page 29

## LMD event

# Contractors visit Denver

The Denver Marriott Hotel was inundated by 250 industry contractors Nov. 13-16, participants in the annual Associated Landscape Contractors of America (ALCA) Landscape Management Division conference.

Division chairman Ron Kujawa of KEI Enterprises, Cudahy, Wisc., was host to 3½ days of show-and-tell sessions, educational meetings and tours.

## Various topics

Subjects varied from "Management Trends for the Eighties" to "Computers and Your Business."

Other educational sessions featured panel discussions on organizing, scheduling and equipment utilization. There was also a day devoted to agronomic topics with speakers like Dr. Ray Freeborg of Purdue, Dr. Jack Butler of Colorado State and B.J. Johnson of Georgia.

The most notable announcement was made by the division chairman when he introduced a new marketing brochure.

"We're a long, long way off from doing everything we think you people want us to do for you," Kujawa said. "We need a mission statement for this organization, but we have finished the brochure."

## Objectives

Kujawa said the object of the brochure "is to educate the public and to educate potential clients. We see its use as being an insert to proposals, as a direct mailer, as a valuable tool for our organization when attending other association meetings like the National Board of Realtors."

ALCA Landscape Management personnel will gather again at the Phoenix, Ariz. Hyatt Regency when the parent organization plans to hold its annual meeting Feb. 7-11.

## Next month:

# You and your trucks







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## INDUSTRY NEWS

## NLI gets director

The National Lawncare Institute has named B.J. Lavoie its executive director.

Lavoie most recently was vice-president/marketing for a general insurance agency located in California. He has many years of experience in sales and marketing.

"Our focus is going to be on greater exposure, and we'll be starting our seminar program in 1984," Lavoie says. "The PLCAA meeting was our initial thrust for membership; by the end of this year, we hope to have 1,500 members."

"We feel our presence will

BJ  
Lavoie



have a mushroom effect."

The National Lawncare Institute has headquarters in Tulsa, Okla. Its mission is to provide the industry with specialized training programs.

## Bulkem gets first distributor

Bulkem Chemical Corp. of Normal, Ill., a distributor of bulk chemicals and bulk storage tanks, has struck an agreement with the Benham Chemical Co. of Detroit, Mich.

Effective immediately, Benham will be a distributor for Bulkem products in Michigan and northern Ohio.

"We are in the bulk business now," said Don Benham of Benham Chemical. "We are not competition with Bulkem because we are Bulkem."

"This expansion is to better service the greater Michigan market. We feel bulk chemicals—not only from a cost standpoint, but also from an ecological standpoint—are going to be the future of the industry."

President John Latting said that Bulkem had previously serviced companies grossing more than about \$500,000 per year.

"But all companies are now beginning to see the need for bulk

handling," Latting said. "This move is to help service our 'mini-bulk' customers, and we are now looking and talking to other people in key marketing areas for other distributorships."

Bulkem has also purchased the Professional Applicator's School from Professional Turf Specialties, and will provide it as a service to its customers.

## PLCAA organizes new committee

The Professional Lawn Care Association of America (PLCAA) has formed a new committee, aimed at helping make members aware of pending anti-pesticide legislation in their area. Its name is the "Public Issues Alert Committee," and it will be composed of members from each of the states who will filter all legislative matters through the PLCAA office for distribution to members.

PLCAA president Don Burton of Lawn Medic, Rochester, N.Y., made the announcement at the



Steve Juntgen (center) of Emerald Green, Ft. Wayne, Ind. accepts a check for \$1,000 from LAWN CARE INDUSTRY national sales manager Ron Kempner (left). The money was first prize in the magazine's "Long Green Sweepstakes," which was held at the Professional Lawn Care Association of America convention two months ago. At right is Gary Sloan of Cushman-Ryan/OMC Lincoln, the booth at which Juntgen submitted his winning entry.

annual business meeting as he handed the gavel to John Kenney of Turf Doctor, Framingham, Mass.

"We must know what's going on in the hinterlands and we must know sooner," Burton said.

Reviewing his year in office, Burton said: "We've done the best we can, and we think we've left the organization in better shape. It's been a very memorable year."

Burton cited the following further advancements during his administration: the hiring of a full-time executive director, increasing financial strength, increasing membership and definition and re-ordering of PLCAA priorities.

"I'm happy to reeport that our objectives for 1983 have been reached, or are well on the way," Burton said.

## Juntgen takes top LCI prize

Steve Juntgen of Emerald Green, Fort Wayne, Ind. won the top prize of \$1,000 cash in the second annual LAWN CARE INDUSTRY "Long Green Sweepstakes" at the Professional Lawn Care Association of America convention and trade show late last year.

Two other sweepstakes prizes were also awarded. William Carey Jr. of Lawn Masters, Hawthorne, NY, won the \$500 second prize and David W. Sek of Monroe Tree and Landscape, Rochester, NY, won the third-place prize of \$250.

Juntgen submitted his entry at the Cushman-Ryan/OMC Lincoln booth at the convention.

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## MEMOS

**MOBAY CHEMICAL** Corp. is planning on releasing a new product to the lawn care market sometime this year. Everything is on schedule for labelling a new systemic fungicide "at least two times more effective than Bayleton," according to Dr. John Proctor of Mobay's research department. Dr. Proctor made the observation during the New York State Turfgrass Conference in Rochester, N.Y., last month.

**SHIPMENTS** OF walk-behind power mowers, lawn tractors and riding mowers, riding garden tractors and rotary tillers decreased by 4.6 percent for the fiscal year (Sept. 1, 1982 through Aug. 31, 1983) from the previous year, according to a report by the Outdoor Power Equipment Institute. The F.O.B. factory shipment value for these products, however, increased 3.4 percent to \$1.702 billion. By category, the most significant growth was for lawn tractors and riding mowers, plus 5.7 percent.

**A NEW HOME** has been found for the Illinois Landscape Contractors Association. The new offices are at 2200 South Main Street, Suite 301, Lombard Office Park, Lombard, IL, 60148. New phone number is (312) 932-8443.

**HAPPY ANNIVERSARY** to the California Landscape and

Irrigation Council, which turns 10 years old Jan. 10. The organization is celebrating with a contract administration seminar and dinner meeting at the Westin South Coast Plaza Hotel in Costa Mesa, Cal. Succeeding Neville Laatsch of Valley Crest Landscape, San Diego, as president will be Roland Tittle of Habco Landscape & Irrigation, El Toro.

**THE CHEMLAWN CORP.** has sent a letter to its 1983 clients noting that prices for "Preferred Customers" will not increase in 1984. Preferred customers also saved seven percent by paying before the start of this year. The company also sent a savings certificate good for its carpet cleaning service along.

**AN ANNOUNCEMENT** OF record sales greeted attendees at the Ransomes Inc. marketing conference in Oconomowoc, Wisc. During the meeting, Ransomes also announced the addition of two new machines to its product line: a small rotary riding mower and a water-cooled gas unit.

**TWO GROUNDS MANAGERS** were recently certified by the Professional Grounds Management Society: Louis Von Ville of First Community Village, Columbus, Ohio; and Richard D. Williams of Husky Oil Company, Cody, Wyo. That brought the number of PGMS certified grounds managers nationally to four.



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Australian Prime Minister Bob Hawke examines a new quiet mower developed in his country as Robert Dunkerley, managing director of Victa Limited (developers of the mower), looks on.

## Quiet mower is developed abroad

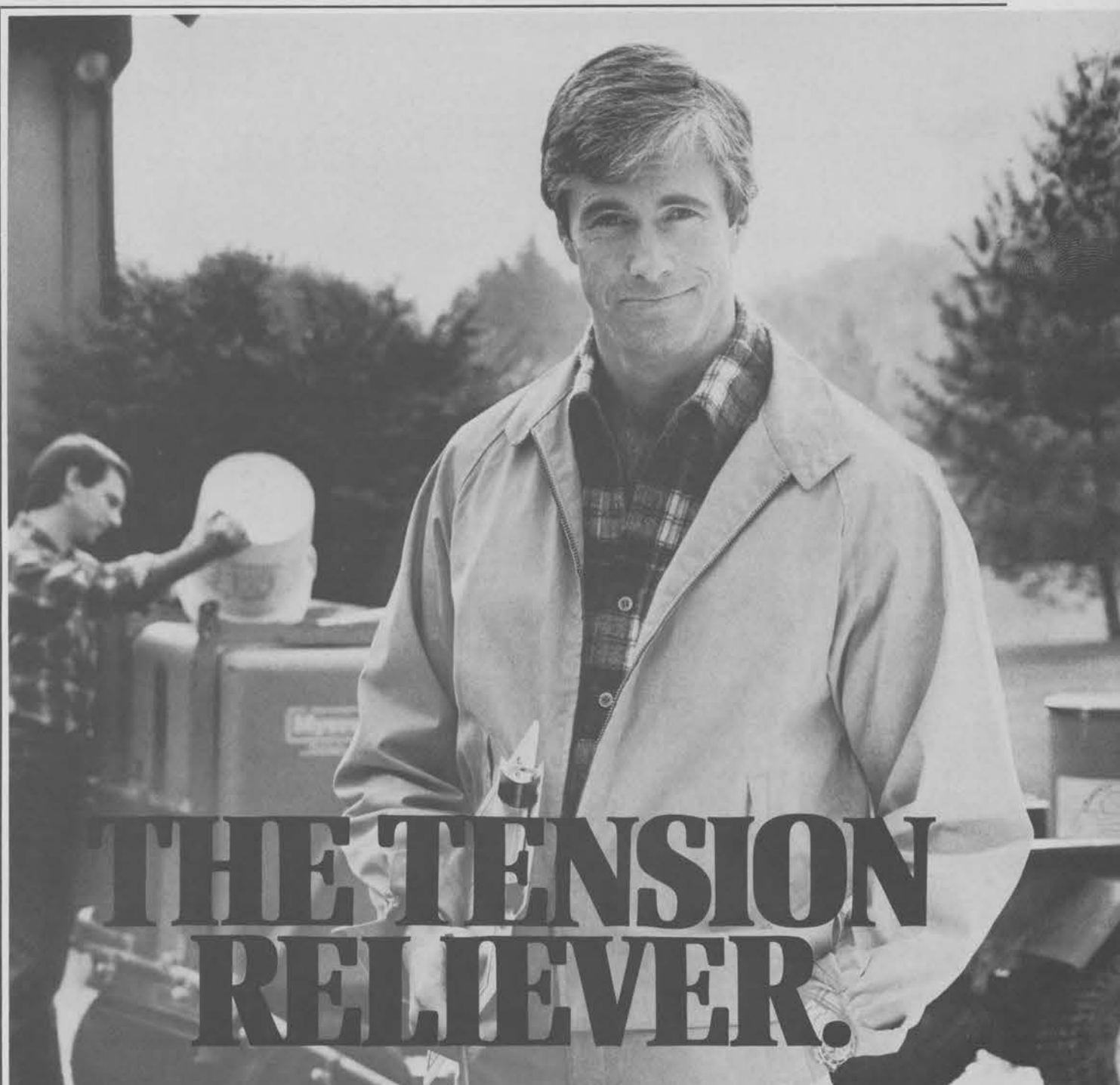
The Victa Limited Co. and the Australian Commonwealth Scientific and Industrial Research Organization have developed a new mower with lower blade speeds and a subsequent quieter-running engine.

Known as the Victa Vortex mower, the new machine features blades which only cut the grass, instead of cutting and flinging clippings into the catcher as do other machines. A high-velocity air stream flings clippings through a narrow chute into the catcher, so the blade speed can be reduced, thereby reducing noise levels. Tests with a noise recorder indicate that six of the new mowers operating simultaneously are quieter than a standard Victa mower.

Victa's managing director, Robert Dunkerly, said the Australian firm will export engines and mowers to 30 countries.

## Mass. could raise penalties

Pesticide applicators in the Commonwealth of Massachusetts may face fines as high as \$25,000 (compared to the current \$5,000 maximum) for violating orders of the



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# ALCA in Phoenix

The 1984 Associated Landscape Contractors of America's annual convention and trade exhibit will be held at the Hyatt Regency Hotel in Phoenix, Ariz. on Feb. 7-11.

The opening session will feature keynote speaker Somers H. White, a former Arizona state senator and president of a management consultant firm. The title of his speech will be "Negotiating for Money."

The theme of this year's ALCA convention is "Together: Cultivating Our Future," which emphasizes the commonality of

all green industry contractors. General interest sessions will focus on sales management, advertising techniques, personnel, and borrowing money. Specialty sessions will also be held.

A full social calendar is scheduled, beginning with a western welcome party.

For more information, write ALCA headquarters, 1750 Old Meadow Road, McLean, VA, 22102 or telephone (703) 821-8611.



Some of the "founding fathers" of the Professional Lawn Care Association of America were honored at the fourth annual convention and trade show in Indianapolis in November. Receiving special citations for their early involvement were (left to right): Bill Stinson, Dr. Paul Schnare, Gordon Ober, Doug Baker, Larry Brandt and Steve Derrick. All are former members of the organization's Board of Directors.

## Mass. could raise penalties

from page 3

Pesticide Board, if new legislation is approved.

Other penalties would be similarly raised if recent proposals made by the board are passed by the state assembly.

Board members say the higher fines would increase compliance and help cover costs of enforcing registration and application laws.

Ian Oppenheim, executive director of the New England Pest Control Association, predicts that increasing the fines will result in more pesticide applicators contesting pesticide board orders and individual enforcement actions because of the added costs. Oppenheim noted that, while some states license businesses and others license applicators, "Massachusetts wants to do both."

## Key manufacturer adds warehouse

The nation's largest independent distributor of agricultural products has expanded its operation with the addition of a new 20,000-square foot warehouse in Omaha, Neb.

"This will let us take advantage of our manufacturing facilities in Montana, Mississippi, Colorado and Nebraska," says Dennis Faith, general manager of Clean Crop, a division of United Agricultural Products. "This warehouse is the first of its kind to specifically serve the lawn care industry."

UAP has satellite warehouses in Kansas City, Mo.; Madison, Wisc.; Kearney, Neb.; Greeley, Col.; Bryan, Tex.; and Columbus, Ohio.

Though agricultural chemicals are UAP's largest market, the company is planning another warehouse to serve the specialty product market in Fresno, Cal.

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The Front Line is 1200 pounds of gutsy engineering.

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Underneath are 3 blades of machine-sharpened, hot-formed steel.

The floorboard is diamond-plate steel. And the 6-gallon fuel tank is made of terneplated steel.

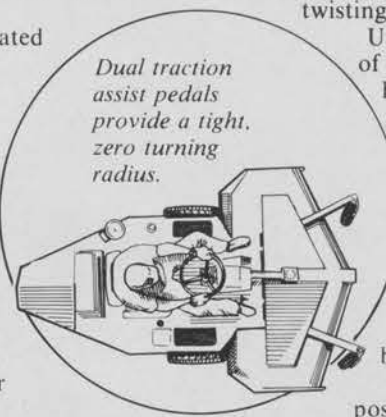
But the Front Line is not just built to last — it's also built for results.

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The Grass Grooming System is available only from your Cushman Front Line dealer. He's in business for the long haul, with a proven track record of service after the sale and a complete line of professional turf maintenance equipment.

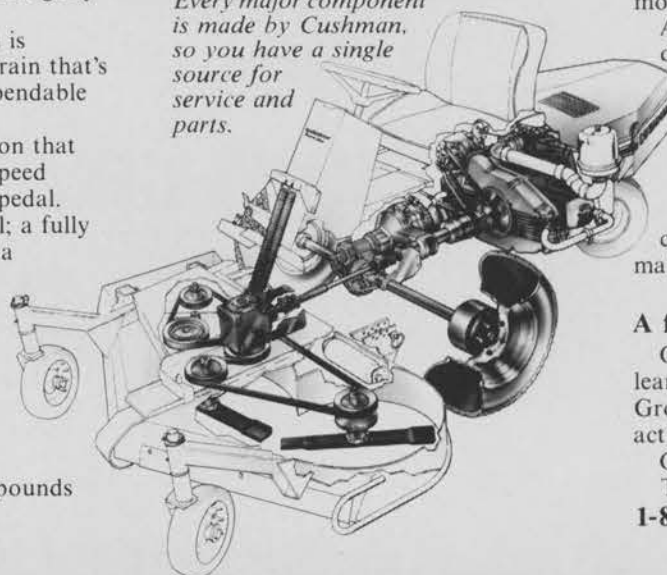
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## Notes from coast-to-coast



Some observations upon returning to the typewriter from conventions sponsored by the Professional Lawn Care Association of America, Associated Landscape Contractors of America Landscape Management Division and New York State Turfgrass Association:

● A panel of chemical company research representatives took some heat at the NYSTA meeting from the audience. Most com-

plaints dealt with excessively high prices. Those complaints, others and reaction of the chemical company representatives will appear in a future LCI article. Look for it.

● Speaking of future articles, you might want to look for one soon concerning professional lawn care in Canada. Problems up there are unusual, according to Des Rice, Glen Howling and Del Stefanson, who run lawn care

businesses north of the border.

● Results of a focus group study conducted by Mobay Chemical Co. were revealed at the PLCAA meeting. Carol Scott of Barickman Advertising said that convenience was the most important factor in a homeowner deciding to use a professional lawn care company. She also noted that 31 percent of 502 respondents said that they use a lawn care service while 11 percent are "do-it-yourselfers."

Eighty-two percent of all people using pro lawn care are satisfied with insect control, the survey said; 10 percent are dissatisfied. In addition, the survey noted that 48 percent of all households using a lawn care service have an income of \$35,000 or more and that 68 percent have an annual income of more than \$25,000.

Seventy-seven percent of your customers are age 35 years or older, and 95 percent are 30 years or older.

● Funniest notion at the PLCAA meeting was presented by new president John Kenney. He said one step in dealing with cancellations was to refuse to allow it. "Sorry, we don't accept cancellations," Kenney said to tell your customers. Or, "It was a lifetime contract."

● Bob Felix said at the NYSTA meeting that the annual cost of running the Public Pesticide Policy Foundation will exceed \$500,000. To make a pledge to this very important group, simply dial 1-800-GET-PPPF.

● New ideas from the ALCA LMD meeting were subcontracting pesticide and fertilizer work, going to a 10-hour day (four days per week), using covered trailers or vans instead of open-bed trucks and "task routing," or using specialized crews for each phase of a certain job.

In an informal poll, approximately 20 percent of the attendees said they would consider subcontracting. Sixty percent said they would consider the 10-hour work day, 55 percent said they would consider covered trailers and 45 percent said they would consider task routing.

● The PLCAA membership continues to grow. At the 1982 convention, membership stood at 319; at the 1983 convention it was up to 460. Director Jim Brooks and Kenney have pledged an increase of 30 percent in 1984.

*Jerry Roche*



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## Turf basics

# Turfgrass culture in shade

It has been estimated that about one-fourth of the turf grown in the country is maintained under varying amounts of shade. However, a minimum of attention has been given to turfgrass culture in the shade.

According to Dr. Thomas R. Turner, extension turf specialist at the University of Maryland, turf experts well understand the



It usually helps to take special care of turf in shaded areas

problems caused by shade, but have much less information available on how to offset these problems.

Despite this lack of information, there are some guidelines the lawn care businessman can follow which will aid in longevity of turfgrass under shade conditions.

The principal turf growing

problems caused by shade include:

- reduced light intensity;
- changes in quality of light;
- competition by trees and shrubs for water and nutrients; and
- increased humidity due to less air movement.

The most obvious effect of shade is the reduction in the

amount of light reaching the turfgrass canopy, Dr. Turner says. Photosynthesis—and thus food production and food reserve buildup—is reduced. Root, rhizome and/or stolon growth will be restricted, along with poorer development of the turfgrass plant's vascular system and cuticle.

As a result, turf grown in the shade generally exhibits lower tolerance to heat drought, cold, disease and wear stress.

## Other factors

Reduced quality of light is less obvious, but has the same effect. As light passes through the tree or shrub canopy, wavelengths of light utilized in photosynthesis may be selectively filtered out, further reducing photosynthesis.

Further reduction in the vigor of the turf may be caused by competition with trees and shrubs for limited water and nutrients. Many trees and shrubs will have substantial root growth in the turfgrass root zone. Management practices and selection of ornamentals should thus be aimed at minimizing this competition.

Finally, disease problems are often more severe in the shade due to higher humidity, prolonged periods of dew on the turf and more succulent leaf tissue. Of particular importance are powdery mildew and melting out. Due to a combination of all these factors mentioned, turf grown in the shade often shows a steady decline in density over a period of a few years.

Several measures can be taken to counteract the problems associated with shade, Dr. Turner says. Often they are minor modifications of normal turfgrass management practices, while others involve plant selection and management of ornamentals.

## Grass selection

Several species and varieties of turfgrass have been shown to perform superior to others in shady conditions.

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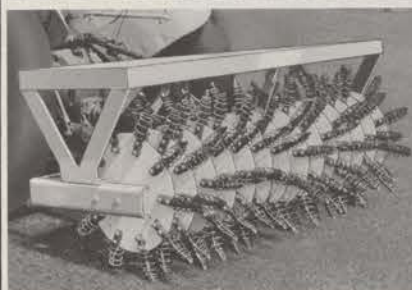
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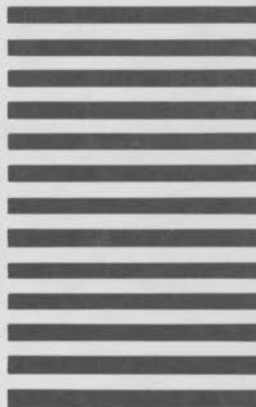
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areas are creeping red fescue and roughstalk bluegrass, also known as *Poa trivialis*. Creeping red fescue will perform best in well-drained to dry sites, where *Poa trivialis* performs best on wetter, less well-drained sites. *Poa trivialis* will not persist on drier sites.

Another species which does reasonably well in shade is tall fescue, although it may not persist as well as red fescue in heavier shade.

Kentucky bluegrass generally does not persist in shade. However, some varieties, such as Glade and A-34, have been developed with improved tolerance to shady conditions.

Of the warm-season grasses, bermudagrass exhibits poor tolerance to shade, but zoysia exhibits fair adaptability to light and moderate (but not heavy) shade.

When establishing the cool-season grasses, it is best to seed in the fall. As most leaves will have fallen, the seedlings will be able to grow throughout late fall and early spring with reduced competition for light.

### Mowing

Due to the reduced light reaching the turfgrass canopy, mowing practices in the shade are even more crucial than in sunny areas. Mowing height should ideally be ½-inch to one inch higher than normal. The increased leaf area resulting from higher mowing will help offset the reduced levels of photosynthesis resulting from the lower light levels in shady areas, Dr. Turner says.

Mowing must also be done on a regular schedule, never removing more than one-third of the leaf area at one time. Less frequent mowing will cause further reduction of carbohydrate reserves.

Also, it is especially important that excessive leaves and clippings from mowing be removed to prevent further reduction of light to the turfgrass canopy. Leaves can be removed by blowing or mechanically grinding through a rotary mower or similar device; if they are allowed to accumulate, the grass can be smothered or some diseases may be encouraged.

### Fertilization

Less nitrogen than normal should be applied to turf growing in the shade. Greater amounts will encourage diseases and result in a further reduction in stress tolerance.

To discourage and reduce competition between ornamentals and turfgrass roots for nutrients, deep root fertilization of ornamentals is encouraged, Dr. Turner says. For maximum tolerance to diseases and environmental stress, maintain the soil pH, phosphorus and potassium levels as recommended by soil tests.

### Irrigation

Irrigation practices should be similar to those used in open, sunny areas. Irrigate infrequently but deeply when you must water. Light, frequent irrigation will encourage more shallow turfgrass

rooting as well as accentuate the disease problems associated with turf in the shade.

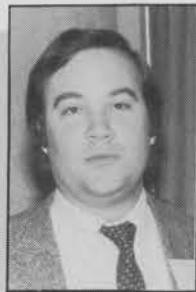
### Ornamentals

When possible, select trees and shrubs which are deep-rooted and have relatively open canopies. Shallow-rooted ornamentals with dense canopies will normally result in failure of turfgrass stands unless proper management practices are very carefully followed.

Some tree species which are considered undesirable include willow, poplar, ash and some of the maples. Species which generally cause fewer problems include oaks, sycamores and most of the lems.

Whether desirable or undesirable ornamentals are present, several measures can be taken which

Dr. Thomas Turner



will aid turfgrass survival.


Selective pruning of branches—particularly low branches—will aid in light penetration and air movement. Ideally, the lowest branches of trees should be six feet or more above the soil surface.

Pruning of shallow roots will help reduce competition for

nutrients and water. Any unnecessary trees and shrubs should be removed and new plantings should be made carefully, using recommended species and sufficient spacing between plants.

### Final steps

As a final step, if sound management practices and using recommended species and varieties are not successful in maintaining quality turf, you must decide between removal of ornamentals or planting a groundcover such as periwinkle or paschysandra, Dr. Turner says.

If all the above cultural recommendations are followed, your homeowner's lawn—despite existing shaded areas—can't help but show improvement. 

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## Record-breaker

# PLCAA convention proves industry is on the rebound

Is the lawn care industry rebounding from the recent recession?

You bet it is, if the crowd at the most recent Professional Lawn Care Association of America (PLCAA) convention and trade show is any indication. A record-breaking 1,300 gathered in Indi-

anapolis Nov. 8-10, 1983 to attend educational sessions, listen to keynote speaker Jack Van Fossen of the ChemLawn Corp., and to buy and sell on the exhibit floor.

"A lot of people thought there was a slowdown the last few years, but if there was one, we didn't recognize it," said Allen

Haws of Mobay Chemical Corp., Kansas City, Mo., one of the 450 exhibitors. "I really think it's a good buying/selling climate, and we at Mobay feel real good."

Dan Hines of the Lawn Pro Division of the Somilat Corp., Mapleton, Minn. echoed the comments of many prospective



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John Kenney of Turf Doctor, Framingham, Mass. (right) accepts the gavel from outgoing president Don Burton of Lawn Medic, Rochester, N.Y. during the annual business meeting of the Professional Lawn Care Association of America in Indianapolis last November. Kenney becomes the fourth president in the young association's history, following Jerry Faulring, Marty Erbaugh and Burton.

buyers: "We're always looking to buy, if the price is right."

While Hines was looking closely at renovation equipment, after a long dry spell in Minnesota last season, David Hofacre of Spray-A-Lawn, Orrville, Ohio, was looking for other equipment. "This year, I'd have to say maybe some new technology," Hofacre admitted. "Aerators should top the list."

Jim Marria, meanwhile, was looking "at anything and everything. We came here with a large list: fertilizers, pesticides, trucks, mechanical products and equipment." Marria is a member of the PLCAA Board of Directors who represents Perma-Green Lawn Co., Boise, Ida.

Though many of the exhibitors were peddling their wares, many others were manufacturers who deal through distributors.

"We're here to answer questions and get feedback from the people who use our product," said Vince Geiger of Dow Chemical, Midland, Mich. "It's a goodwill-type effort, thanking people for using our product."

The crux of Van Fossen's keynote speech pointed at governmental regulation, a high-interest subject at the fourth annual convention.

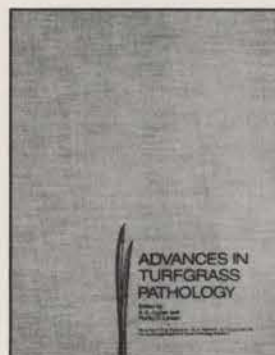
"I'm not nearly as concerned about the national Environmental Protection Agency as I am about local and state legislation," Van Fossen said. "That's the greatest danger to this industry."

"Over the next five years, all of you will be forced to become involved in local, state and national regulation."

"This is no longer an unregulated business. But my concern is

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The trade show floor was busier than it's ever been at the fourth annual PLCAA convention two months ago. More than 800 convention-goers swarmed the floor, which was manned by 106 companies and an additional 400 exhibitor personnel.

more for those who are not here...and don't give a damn about the industry.

"The lawn care industry is not just an interested bystander in government regulation any more. This is no longer an unregulated business."

During the PLCAA's annual business meeting, the president's gavel passed from Don Burton of Lawn Medic, Rochester, N.Y. to John Kenney of Turf Doctor, Framingham, Mass.

"Now, it's my turn to do something," Kenney said, complimenting his predecessors. "There's a terrible storm coming: I see it, I taste it and you'll feel it," he continued, referring to governmental legislation against pesticide use.

"This storm is going to take us all and put us in the dumpster if we don't do something. We (members of the PLCAA) have to be the magnet to attract people into our fold. You ain't seen nothing yet: we have got to get together and this (the PLCAA) has to be the vehicle to do it."

Kenney and Executive Director Jim Brooks said that they hope to increase membership 30 percent this year.

#### Changes

Bill Fischer moved up to vice-president this year while Marria was voted secretary-treasurer.

Continuing one more year as directors are Paul Bizon, Des Rice, Fischer, Kenney and Burton. Continuing two more years are Marria, Charlie McGinty, Jim Sackett, Dr. James Wilkinson and Dr. Robert Miller.

New members of the board are Paul Davarede of Evergreen Lawns, St. Charles, Mo.; Al Rumbo of LST Industries, Hillsdale, N.J.; Tony Giordano of Lawn Doctor, Matawan, N.J. and Max Graham of Graham Lawn Care Equipment, Douglasville, Ga. Bob Scobee of The Andersons replaced Ron Giffen of Lakeshore Equipment and Supply as associate director.

Plaques were presented to Giffen and other board members whose terms expired—Marty Erbaugh, John Latting, Rick White



Old pals Marty Erbaugh of Lawnmark Associates (left) and Bob Earley of HBJ Publications were reunited at the PLCAA convention last November in Indianapolis. Erbaugh was the organization's second president and Earley has been Industry Liaison since the PLCAA's inception.



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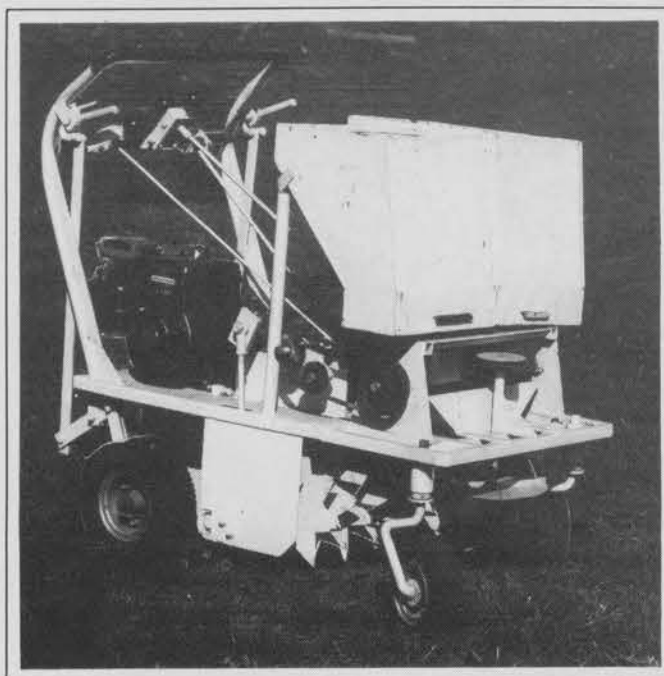


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Visitors to the PLCAA convention and trade show got a chance to not only hear speakers like Ian Oppenheim of Rational Approach to Pesticides, Inc. (left photo above), but they also had a chance to visit one of more than 150 exhibitor booths, like The Andersons (right photo above). Oppenheim was one of several speakers attacking the problem of governmental regulations and their effect on the lawn care industry. The convention, which moves to Tampa, Fla. this year after a two-year stint in Indianapolis, was the biggest ever: approximately 1,300 people were involved, including more than 400 sales personnel on the trade show floor.

and Ronnie Zwiebel—as the business meeting drew to a close.

Official attendance was 839, up 148 from the 1982 mark. More than 400 exhibitors from 106 companies also attended.

Next year's convention will be held in Tampa, Fla. There will be a tour of the Caribbean after the convention, and anyone interested in the convention and/or tour should contact the PLCAA office in Marietta, Ga. 

## PLCAA

# Policy to be altered


A change in organizational policy will eventually be implemented, according to former Professional Lawn Care Association of America president Marty Erbaugh.

The change deals with self-regulation.

"It's the position of this board that we should investigate and get involved with self-regulation," Erbaugh said during the organization's annual business meeting in Indianapolis recently.

"We have authorized an expenditure of funds with legal counsel.

"It's do-able, but we're a ways from doing it. We're making an orderly path toward an individual method whereby we can solve problems internally before they become a public issue."

In past years, the PLCAA had adhered to a strict "hands-off" policy regarding complaints by one member against another. 

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## New PLCAA boss

## Meet Jim Brooks —if you haven't yet



Jim Brooks

He reads gourmet and scientific magazines between bursts of poetry and fiction writing. His collection of United Nations stamps is almost complete, but the American section still needs work.

Though he was an academician 10 years ago, Jim Brooks is no reclusive professor. But the executive director of the Professional Lawn Care Association of America does boast widely varying interests.

To unwind from the pressures of running PLCAA's day-to-day operations, he indulges in stamp

collecting, tennis, and writing. His favorite magazines, "after, of course, LAWN CARE INDUSTRY," are The Smithsonian and Bon Appetit.

Representing PLCAA, Harcourt Brace Jovanovich and the Golf Course Superintendent's Association of America during the past 10 years has meant extensive travel. Of all the greasy spoons and elegant restaurants he's patronized on the road, Brooks says his favorite eating spot is the Chez Carey in Orange County, Cal.

PLCAA's new executive director originally set out to conquer the academic world. After graduating from the University of Kansas in 1962, Brooks taught high school and college courses until 1974.

He studied political science as an undergraduate, and met the future Mrs. Brooks in a political geography course.

"Our fraternity and sorority happened to be on the same side of campus, so that helped, too," Brooks recalls. He and Marilyn celebrated their 20th anniversary, and the couple has two sons, Brian (10) and Steve (14).

## Exposure

While teaching at the University of Kansas, Brooks also coordinated student trips abroad. He says his most embarrassing moment occurred while exposing his students to the wonders of the world.

At the end of a student trip to Greece, Brooks discovered that his fly was broken as he boarded the return flight. His baggage had already been checked, "and I was a long way from Kansas City," Brooks recalls. "I read a lot of magazines on my lap" during that long flight home.

Should he someday reach the pinnacle of fame and MGM decides to film "The Jim Brooks Story," the executive director says he would choose Burt Reynolds for the title role. And, although he says he likes being himself, Brooks adds if he could be anyone else, a famous writer like James Michener would suit him fine.

But he's not all highbrow: Jim's favorite drink is a cold beer, with drambuie on the rocks a distant second choice.

## Not enough time

What's the best part of being in charge of the day-to-day operations of the PLCAA? "Being at a primary decision-making level...having a large involvement in many areas of an industry that I've become very fond of over the past 10 years," he says. His only complaint sounds familiar to most businessmen: "There's not enough time to do everything I feel should be done."

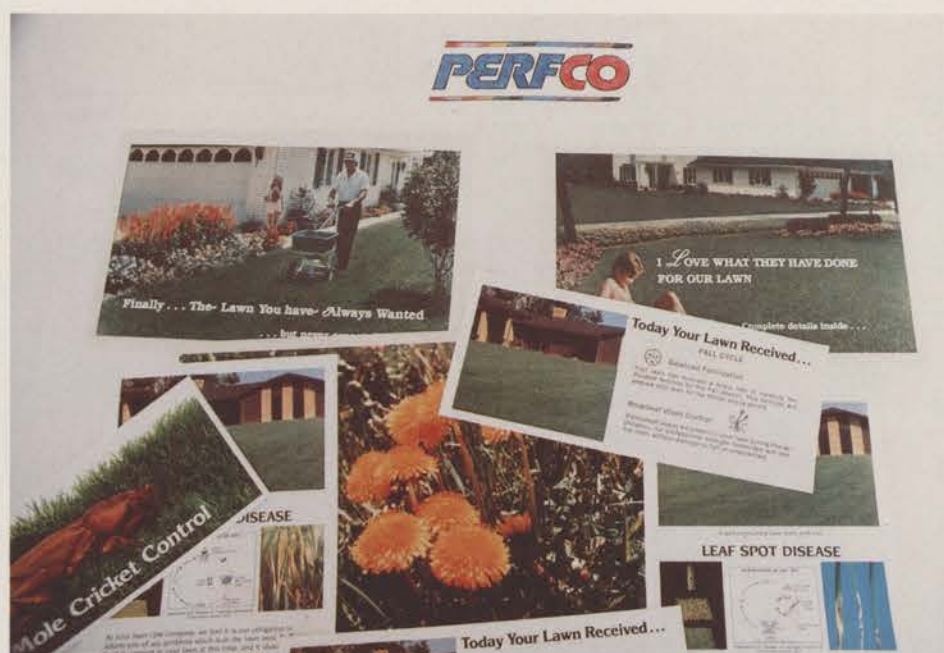
Seven months into his job, Brooks believes his main accomplishment has been to increase the PLCAA's visibility both in the industry and among allied professions.

He notes his involvement in pro-pesticide coalitions and the American Association of Pest Control Officers. "We're working to ensure that lawn care representatives will serve on state advisory boards" that review legislation regarding chemical use in the various states, the new director concludes.

—Kevin Cooney

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And since Dacthal is not water soluble, it won't leach or run off during wet weather as some preemergent herbicides do.

### The only way to control spurge.

Dacthal W-75 delivers more effective spurge control than any other herbicide.

Here's why.

Spurge plants produce from 600-3500 seeds per plant. Once they've emerged, they're almost impossible to control with a postemergence.

Spurge has to be controlled *before* it emerges. And the only preemergence labeled for the job is Dacthal.



### Dacthal does it all.

A Dacthal application in spring, before annual weed and seed germination, provides excellent control of crabgrass. Make a second Dacthal application 60 days later for full season spurge control.

And remember, Dacthal is also effective against 21 other annual grasses and broadleaf weeds including foxtail and purslane. What's more, it can be applied to more than 120 ornamental flowers and shrubs with no risk to ornamental root growth.

This season, stop both crabgrass and spurge with the one preemergence herbicide you know you can count on. Dacthal W-75. It's back and ready to go to work.

Always follow label directions carefully when using turf chemicals.



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## Fertilizers, Part II

## Natural organics in N fertilization

By Dr. John Street,  
Ohio State University

**ED. NOTE:** This is the second of a two-part series on popular lawn fertilizers. In the first part, Dr. Street covered ureaform-type fertilizers. He continues the discussion this month by starting with natural organics.

The nitrogen in natural organic sources is contained in complex organic (carbon) compounds that are not readily soluble in water. The materials are predominantly by-products of the plant and animal processing, industry or waste products. Dried manures, seed meals, process tankage, bone meal and cocoa shell meal are examples of natural organics, but these materials have only received very limited use for turf fertilization.

The natural organic source used most readily for turf fertilization today is activated sewage sludge, sold under the trade name of Milorganite.

It is made from sewage freed from grit and coarse solids by aerating in tanks with microorganisms. The resultant organic matter is then filtered, dried, ground and screened. The material is steam sterilized to kill weed seeds and harmful organisms. In addition to nitrogen, Milorganite also contains significant amounts of phosphorus, potassium and many micronutrients. The commercially available product has an approximate 6-2-0 analysis and a WIN value of 5.5.

Nitrogen release from natural organics is dependent on microbial activity for breakdown of the complex organic compounds. Initial plant response and residual response is considered intermediate between quickly-available nitrogen sources and Nitroform.

### IBDU

IBDU (isobutylidene diurea) is formed by reacting isobutyraldehyde and urea in acid solution. The resultant product contains 31% nitrogen and 90% is water insoluble (WIN). The WIN portion of IBDU has a uniform composition, whereas UF-type fertilizers consist of various chain length methylene ureas and free urea.

The finished reaction product is screened into two sizes, 0.5-1.0 millimeter fine and 0.7-2.5 millimeter coarse.

IBDU has a low solubility in water. The conversion of IBDU to plant-available nitrogen is dependent on dissolution of IBDU molecules from the granule. This is considered the rate-limiting step in breakdown of IBDU.

Following dissolution from the particle, the IBDU molecule is hydrolyzed (split) to urea and aldehyde. Urea is then converted

#### SALT INDEXES OF VARIOUS NITROGEN FERTILIZER SOURCES\*

Fertilizer	Salt Index Value
Urea	75
Ammonium Nitrate	105
Sodium Nitrate	100
Potassium Nitrate	74
Ammonium Sulfate	69
Nitroform	10
IBDU	5
Methylene Urea	4

\*Concentration of ions in soil solution based on sodium nitrate at 100°

#### Foliar burn rating for various nitrogen fertilizers on Kentucky bluegrass

FERTILIZER	BURN RATING <sup>1</sup>
Urea, liquid	5.5
Foliar	5.4
UF & Urea	4.3
Formolene	1.5
UF	1.0
Fluf	1.0
Urea, granular	1.0

1. Burn ratings were made on a scale of 1 through 9 with one representing no burn and nine representing severe burn.
2. Fertilizer was applied at one pound of actual nitrogen per 1,000 square feet in July. The midday temperature was approximately 88-90° F.

to ammonium (NH<sub>4</sub>) by enzymatic hydrolysis.

The nitrogen-release rate is predominantly affected by soil moisture and particle size. Higher soil moisture and smaller particle size result in a more rapid release rate. Nitrogen release from IBDU is somewhat depressed at alkaline pH values, especially those near pH 8.

Nitrogen release is independent of microbial activity. Thus, IBDU will release nitrogen much more readily than Nitroform and natural organics during cool weather. Nitrogen release is increased to some degree by higher soil temperatures.

Fall-applied IBDU provides an excellent turf quality response during the late fall and early spring. It has proven to be an excellent nitrogen source for use in late-season fertilization programs. Initial turf response from IBDU applications is usually slow due to low solubility and too high WIN content. Once a threshold concentration of soil nitrogen is reached, turf response is usually excellent.

Commercial formulations are available (e.g. Par Ex 24-4-12) that provide a certain percentage of free urea to enhance early turf green-up. With liquid applications, initial turf response from IBDU is more rapid due to partial breakdown of granules during agitation and pumping.

The addition of one-half pound of nitrogen per 1,000 square feet as IBDU was found to be a lower

limit for extending the residual response of quickly-available sources in liquid programs. Two applications (spring and fall) of granular IBDU have given good results on both bentgrass and Kentucky bluegrass during the growing season at nitrogen rates of two to three pounds per 1,000 square feet.

### Sulfur-coated urea

Sulfur-coated urea (SCU) is formed in a continuous-flow process by spraying preheated urea pellets with molten sulfur. A sealant coat of polyethylene oil or microcrystalline wax is then applied. Finally, a conditioner, consisting of diatomaceous earth or vermiculite, is added to reduce the stickiness of the sealant. Pinholes and cracks do develop in the sulfur coating of certain particles as they cool.

The purpose of the sealant is to plug these defects, strengthen the sulfur shell and decrease the initial rate of urea release. Nitrogen content of commercially-available products is in the range of 32 to 37%.

These products usually contain a nitrogen-sulfur ratio of approximately two to one. Release of urea from SCU granules occurs through defects in the coating such as pinholes and cracks and through openings as the sealant and sulfur coat deteriorate. A certain percentage of granules contain major defects (i.e. pinholes and cracks) which are not covered by sealant coating.

The granules empty rapidly when placed in water. This nitrogen fraction acts as quickly-available or water-soluble nitrogen. The seven-day dissolution rate in water is commonly used to characterize the initial release rate (quickly-available fraction) of different SCU formulations. Under laboratory conditions, 50 grams of SCU is immersed in 250 milliliters of water at 38°C and the amount of urea which enters the solution after seven days is measured.

This amount, expressed as a percentage of the total urea content, characterizes each SCU product. For example, SCU-30 is a product from which 30% of the urea is released under the seven-day dissolution test.

A seven-day dissolution rate of

20-3-5 has proven to be acceptable for initial turf response when applied at rates of greater than one pound of nitrogen per 1,000 square feet.

Three general solubility classes of SCU are described within a product:

CLASS I: granules with holes or cracks thorough the coating.

CLASS II: granules with holes or cracks in the coating which are plugged with sealant.

CLASS III: granules which have no holes through the sulfur coating.

Class I granules act like quickly available nitrogen and release urea as soon as they contact moisture. Class II granules begin to release nitrogen as soon as the sealant is broken down or removed. Class III granules being to release nitrogen as soon as the sulfur coating is penetrated.

Temperature, soil moisture, and microbial activity are all considered to play a role in the release of nitrogen from Class II and III granules.

The release of nitrogen from individual granules of SCU is rapid once water gains access into the sulfur shell. Thus, slow availability of nitrogen from SCU results from many granules that release nitrogen at different times. Nitrogen is not released from all granules uniformly.

"Controlled-release soluble urea nitrogen" (CRSUN) is a term used on certain SCU fertilizer labels. The CRSUN value simply refers to the total percentage of nitrogen as SCU in the product.

Another term, "controlled-release nitrogen" (CRN) refers to the amount of percentage of Class II and Class III nitrogen in the product. The CRN value excludes the Class I or water-soluble (seven-day dissolution) nitrogen fraction.

Nitrogen fertilizers available for turfgrass fertilization vary considerably in their chemical and physical properties.

Fertilizer use should be based on the properties of the nitrogen source and on factors that affect release and availability of nitrogen from the source.

Quickly-available nitrogen sources release nitrogen rapidly

to page 28

Dr. John  
Street



Dr. John Street is an extension agronomist at The Ohio State University, Columbus, Ohio. The Pennsylvania native received his bachelor's degree from California (Pa.) State College and his master's in agronomy from Ohio State.





# AMERICA'S NUMBER ONE WEAPON IN THE WAR AGAINST CRABGRASS.

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In fact, in a survey of 75 of the largest companies, Betasan is used by four out of five.

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Betasan is easy to apply and available in liquid and granular formulations.

Betasan is safe and effective on established bluegrass, fescue, bentgrass, Bermuda grass, annual and perennial rye, Zoysia, bahia, centipede and St. Augustine.

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## INSIDE THE INDUSTRY

# Customers:

## Use kid gloves, but avoid a 'snow job'

Allen Duey doesn't have any magic solutions to customer complaints. But the president of Jay-Lan, Inc., Sioux City, Iowa, does have some suggestions on how to pacify irate customers.

He sums up the situation neatly: "Educate and persuade customers to believe in you... (but) if the customer owes you and won't pay, sue!"

Above all, proprietors must be sure of their facts when they sit down with a dissatisfied consumer.

"Don't let the customer snow

you," Duey advises. "Record the history of the lawn and do it right the first time."

Carol Scott of the Barickman Co. says a survey conducted by her firm for the Monsanto Co. reveals several basic, but important, factors that owners should keep in mind for ensuring customer satisfaction: careful scheduling, prompt service, reliability, courtesy and concern.

### Suggestions

But Duey also has several suggestions for those times when you

encounter the less-than-perfect customer, or when one of your employees turns out to be fallible.

First, since Monsanto's consumer research indicates that women make slightly more than half the decisions regarding lawn care services, Duey advises his colleagues to always keep the feminine perspective in mind.

"I believe the housewife is the key person, and we have to satisfy her—even if it's through the husband," he says.

Although most complainers want to speak to the owner or

manager, it's more effective to have a male employee speak to a female customer and a female employee discuss problems with male complainers, Duey notes.

When reviewing complaints with consumers, keep a positive attitude, but never make light of customers' problems, Duey says.

One key to preventing problems with customers is making sure that your workers are giving out the proper information. "Overzealous employees can cost you customers," Duey warns. He advises owners to have their staff members repeat the information they are given before starting their routes so any misunderstandings can be corrected before it reaches a client.

### High costs

When it comes to satisfying disgruntled clients, John Kenney, president of Turf Doctor, Framingham, Mass., reminds his colleagues about how much it costs to obtain new customers. "If we can put some money into saving customers, our limit of expenditures for saving them should equal that of getting a new customer," he says.

Kenney's firm keeps a list of reasons why his customers cancel their contracts, and he says the problems break down into more than 80 specific categories. Those specifics can be grouped into seven general categories:

- problems with personnel,
- problems with results,
- procedural matters,
- reduced level of service,
- objections to materials and/or equipment,
- financial matters, and
- customer moving.

When tackling customer complaints, Duey advises you to remember how clients feel about their homes: "The homeowner is as possessive with his lawn and trees as he is with his kids."

### Communication

Communication is of utmost importance in dealing with customers.

First, the lawn care businessman must make sure that the customer's expectations of the services to be performed are realistic. Then, when a problem arises, the real pro will treat the customer in the proper manner.

"Communicate with the customer," Duey advises. "Don't make light of any complaints, but stay positive."

So treating those lawns as if they were your own will go a long way toward ensuring happy, continuing customers.

## Field men must stay in touch

Your crews are making their rounds, keeping close to schedule on a typical workday. Suddenly, Mr. Jones flags them down and points out a problem with his lawn—the one you've been treating for three seasons now.

How well does your staff handle unexpected problems or questions? Do customers know your employees personally? Do lawn care businessmen encourage their crews to discuss their work with customers, or do you ask your clients to call the office?

### In favor of contact

Judging by a LAWN CARE INDUSTRY straw poll, most owners favor some contact between their technicians and customers.

"Our field personnel do have contact, but only when they are personally approached by customers," says Joe Bagley, maintenance supervisor for Rood Landscape, Jupiter Fla. "Our spray and pruning crews always leave a hanger, but as far as personal contact, we don't make it a rule."

Bagley says that many of his clients are wealthy industrialists with winter homes in Jupiter who don't like to be bothered unless necessary. "That's the way they want it," he notes.

"We don't have any problems (with customer contact)," says Ron Kujawa of Kujawa Enterprises, Cudahy, Wisc. "We don't have any clones...we're professional enough to give customers plenty of advance notice and handle their concerns on the spot."



Walter Chapman of Chapman Excel-Lawn, Springfield, Ill., believes the situation is dependent on the individual employee.

"We kind of play that by ear," Chapman says. "Some of them have more of a knack (for dealing with consumers) than others."

Chapman notes that with the prevalent pay scales in the industry, college-educated people—who could be expected to handle customer relations well—don't often end up running mowers or sprayers. But he adds that education alone doesn't indicate good sales ability.

"You just have to have that sales personality," Chapman concludes. "We just judge it by individuals."

Another approach is taken by The Weed Man Ltd., Mississauga, Ont., Canada.

### 'Referrals'

"If they (customers) have a question, we try to solve it on the lawn," says owner Des Rice. Questions and concerns are referred to The Weed Man's technical staff at the office only if the technician can't resolve the prob-

lem on the spot, he says.

Robert Parmley of Tempo 21, Wheeling, Ill., encourages his technicians to get to know the clients. "When you're on a lawn only four or five times a year, it's important to have contact," Parmley believes.

After 9 a.m., Tempo 21 employees are required to ring doorbells and leave door hangers if customers aren't home.

David Biddle of Biddle Lawn Care, Savoy, Ill., agrees with Parmley: after 8 a.m., his crews knock on doors.

"We think it's important—not only may you surprise somebody...but it's only courtesy, I think," Biddle says.

But there can be a drawback with that policy, of which Parmley is well aware. Too much knocking on doors—especially when homeowners are good talkers—tends to take its toll on the technician's working day.

"Of course, talking with the customer slows you down," Parmley admits. "You have to know when to talk about lawns and when not to talk about the Chicago Cubs."



## Rules for handling the gripes

Here are the 15 rules for dealing with customers, as presented by Lawrence Kokkelenberg at the 1982 PLCAA conference:

1) The conversation's first three minutes are critical, and can make or break your meeting. You must quickly establish that you are going to be helpful.

2) Never point to a customer's errors. It tends to put them on the defensive and will make it difficult to establish rapport.

3) Try to avoid the word "you," which could put the customer on the defensive.

4) Use the customer's name in conversation: first name for informal effect, last name if you don't know them well.

5) Draw the customer out: engage them in conversation to find out the real problem. Many times they will not level with you if they are angry.

6) Use nurturing words like "I can appreciate your concern."

7) Always try to be calm. Don't let your anxiety show. (This is difficult, but will come with experience and confidence.)

8) Use gentle gestures. Never point your finger (an aggressive gesture). Avoid the defensive gesture of folding your arms.

9) Be reassuring. Let the customer to know that you are going to be helpful in trying to resolve his problem.


10) Use a gentle tone of voice for a calming effect on the customer, even though he may be upset. Remember how doctors and ministers handle their "bed-side manners."

11) Give information only when they are ready to handle it. Settle the customer down first.

12) Use eye contact, but be careful. If you are not totally honest or unsure about what you are telling the customer, this technique can backfire.

13) Proper dress and appearance are critical in establishing your credentials as an expert. We tend to get less angry at well-dressed people, while better-groomed representatives tend to be more believable.

14) Vocabulary is very important in establishing your credibility. Use concise and effective words to deliver the message, and be confident about your information.

15) Use common sense. Assume you are dealing with people who possess a good bit themselves, and they will respect you more. 

## Maintaining those 'assets'

Is your building your top asset? How about your equipment?

No, according to Marty Erbaugh of Lawnmark Associates, Peninsula, Ohio: your No.1 assets are your customers.

"Unfortunately, these assets are not on our balance sheets," Erbaugh has said. "But they need maintenance like any other."

Customer "maintenance" is affected through competent prod-


uct delivery and follow-up service delivery.

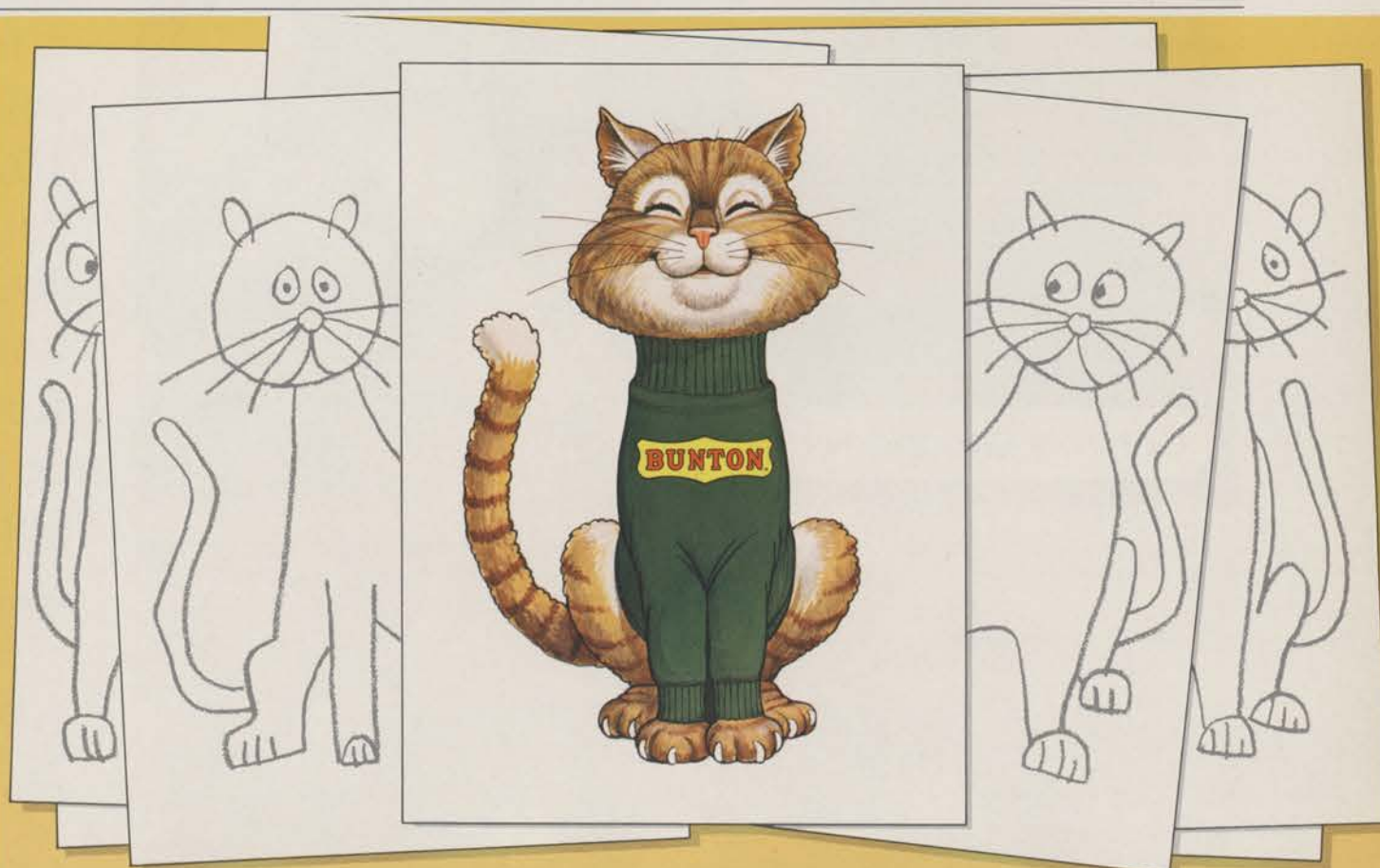
"Oftentimes, this is the area where we either solidify our customer base or subject it to erosion," Erbaugh has noted.

"Understanding what a prospective new customer's objectives are, outlining for them what they can reasonably expect—given the existing condition of their lawn—will help create the

proper relationship. Then to follow up with technically competent product and service delivery is really the only manner in which brand loyalty can occur.

"The way we sell, service and follow up defines our livelihood."

"The real importance...is continued dedication (or re-dedication) to the needs of our customers, which—if met—translate into growth." 



## OFTEN COPIED. NEVER MATCHED.

Suddenly, it seems everyone knows exactly what you need in a commercial mower. Amazingly enough, they all look just like a Bunton. Too bad they don't perform like one.

The Bunton commercial mower has proven itself with a thirty-year track record. That's why it's been copied. Here's why it hasn't been matched:

- **Quality of cut.** If you own a Bunton and any other brand, you already know which one produces the better cut, more consistently and with less downtime. That's why Bunton is preferred by lawn service professionals everywhere.
- **Choice of type, size and power.** You don't have to "make do" with a mower that's not quite right for your situation, or wait until next year when they say they'll introduce the size and type you need. We have it now. Have had it for years. And with Bunton you don't have to take the engine that "comes with the mower." We match one of nine commercial engines to your size and application.
- **Low maintenance.** You're in the business of cutting grass, not debugging "new" products for old line manufacturers catching up with the times, or new companies



hoping to break into the business. Bunton's designs were proven years ago. The others may look the same on the surface, but none have copied the quality that provides the dependability and low maintenance of a Bunton.

- **A past that assures a future.** We sell more commercial mowers in the 24 inch to 61 inch range than all our competitors combined. We intend to keep it that way by making sure our customers are as satisfied in the future as they have been in the past. That assures you of a reliable source for original equipment, parts and service, long after the others are gone.

Overall, it costs less to own a Bunton than a cheap imitation, because... Bunton builds 'em better. For complete information on the largest selection of the industry's most popular commercial mowers, please write or call for our new full line catalog and the name of the Bunton dealer in your area.

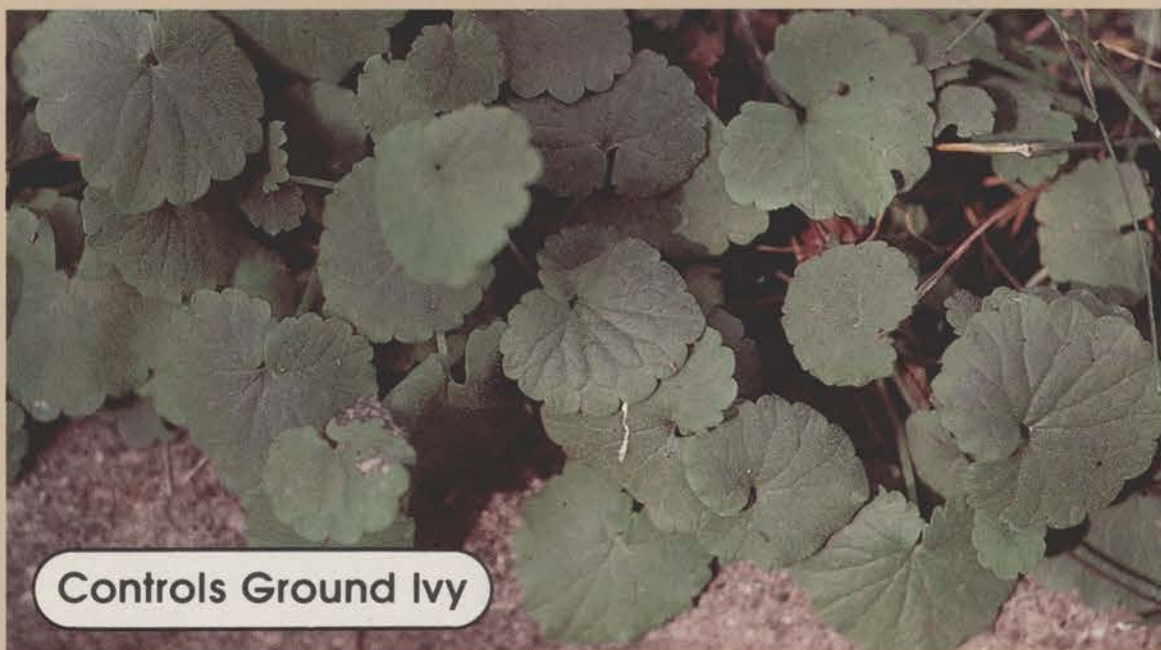
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Controls Oxalis



Controls Spurge

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- Controls Spurge, Oxalis, Ground Ivy, and other hard-to-control weeds.
- Rapid, visible effect in early-season or late-season cool weather.
- Minimum hazard to nearby flowers and ornamentals.

When turf professionals talk — PBI/Gordon listens.

Lawn Care Applicators told us that a major problem they have is achieving rapid, visible response from the treatment of broadleaf weeds in cool weather ... especially on those lawns which are first on the schedule at the start of the year and thus are sprayed very early in the season, before the weeds are growing vigorously.

Of course, they get total control with regular Trimec in cool weather; but, because Trimec is so thorough, it takes a little time for it to translocate throughout the



# to Test the Turf Ester



One gallon covers up to four acres.



**Beware of substitutes!**

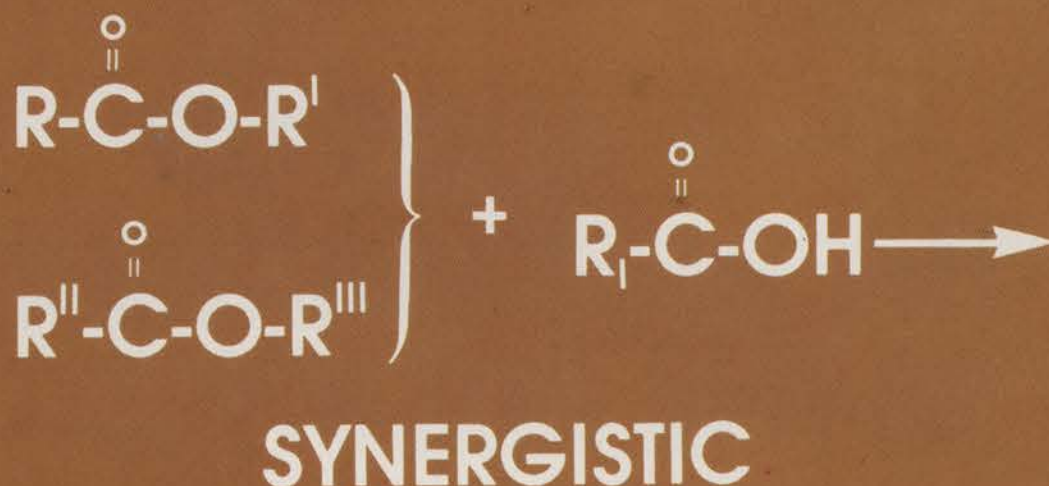
root system and result in total kill.

It's difficult to explain this time lag to some homeowners. They want to see those dandelions curl up right now, regardless of the temperature.

Trimec Turf Ester answers the problem. It produces very quick response. The customer likes that, and it keeps him off the telephone complaining that nothing has happened to his weeds.

Groundskeepers told us they wanted to control super-tough weeds like Spurge, Oxalis and Ground Ivy with one application.

Trimec Turf Ester will do the job. Even on Spurge that has hardened off in hot weather. The ester penetrates right through the tough, hardened-off cuticle and gets into the circulatory system of the plant, resulting in positive kill.



*How we put Trimec Turf Ester together is, of course, a trade secret; but the chemical explanation above will immediately give you an indication of its remarkable power. You'll note that it is a unique combination of different*

*esters with the ability to form a complex with dicamba, resulting in the most efficient broadleaf herbicide we have yet developed. Aren't you just itching to try it? Pick up your phone now and request your sample.*

## Read what a turf pro has to say

Consider the experience of a prominent golf course superintendent in Southern California.

He had Spurge and Oxalis in his Bermuda lawn. He applied Trimec Turf Ester in 107-degree weather. It discolored the Bermuda for a brief time, but it came right back — minus the Spurge and Oxalis.

Furthermore, he sprayed within 12 inches of a strawberry bed without doing any damage whatsoever.

Obviously, we don't recommend spraying Trimec Turf Ester in 107-degree weather; we don't recommend it for warm-weather grasses; and we certainly don't recommend spraying that close to a strawberry bed — but it does give you an indication that Trimec Turf Ester is indeed a remarkable

product. Actually, it's more than that ... it's the most significant breakthrough in weed control since the introduction of Trimec itself.

## Accept a free sample

We are eager for every turf professional to test Trimec Turf Ester. Simply write us a letter or call us toll-free requesting a sample, and we will send you enough Trimec Turf Ester to cover 10,000 square feet.

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# MEETING DATES

**North Carolina Turfgrass Conference**, Jan. 3-5, Pinehurst Hotel, Pinehurst, NC. Contact: W.B. Gilbert, 1119 Williams Hall, N.C. State University, Raleigh, NC, 27650. (919) 737-2657.

**Maryland Turfgrass '84**, Jan. 9-11, Baltimore Convention Center, Baltimore, MD. Contact: Cheryl Gaultney, Box 223, White Marsh, MD, 21162. (301) 335-3700.

**Southeast Pennsylvania Turf School and Trade Show**, Jan. 10-11, Westover Inn and Golf Club, Jeffersonville, PA. Contact: Keith Zanzinger, Chester County Cooperative Extension Service, 235 W. Market St., West Chester, PA, 19380. (215) 696-3500.

**Tennessee Turfgrass Conference**, Jan. 10-11, Music City Rodeway Inn, Nashville, TN. Contact: Brenda Goins, Tennessee Turf Association, 25 Coach House, 523 Harding Place, Nashville, TN, 37211. (615) 832-6493.

**Nebraska Turfgrass Conference and Trade Show**, Jan. 10-12, Holiday Inn,

Omaha, NE. Contact: Dr. Robert Shearman, Dept. of Horticulture, 377 Plant Science, University of Nebraska, Lincoln, NE, 68583. (402) 472-2550.

**New Hampshire Turfgrass Conference**, Jan. 12-13, Sheraton-Wayfarer Motor Inn, Bedford, NH. Contact: Dr. John M. Roberts, Dept. of Plant Science, Nesmith Hall, University of New Hampshire, Durham, NH, 03824. (603) 862-1200.

**Rocky Mountain Turfgrass Conference**, Jan. 12-13, Lory Student Center, Colorado State University, Ft. Collins, CO. Contact: Dr. Jackie Butler, Dept. of Horticulture, Colorado State University, Ft. Collins, CO, 80523. (303) 491-7070.

**Mid-America Horticultural Trade Show**, Jan. 13-15, Hyatt Regency, Chicago, IL. Contact: Mid-Am, 4300-L Lincoln Ave., Rolling Meadows, IL, 60008. (312) 359-8160.

**Michigan Turfgrass Conference**, Jan. 17-18, Long's Convention Center, Lansing, MI. Contact: Dr. Paul Rieke, Dept. of Crop and

Soil Sciences, Michigan State University, East Lansing, MI, 48824. (517) 355-0266.

**Virginia Turfgrass Conference and Trade Show**, Jan. 18-20, Williamsburg Hilton National Conference Center, Williamsburg, VA. Contact: J.R. Hall III, Virginia Turfgrass Council, P.O. Box 527, Richmond, VA, 23204. (804) 644-0912.

**Tropical Plant Industry Exhibition**, Jan. 19-21, Coconut Grove Exhibition Center, Miami, FL. Contact: Ray Oblesby, TPIE, P.O. Box 16796, Temple Terrace, FL, 33687. (813) 988-7198.

**Nurseryman's Personnel Workshop**, Jan. 23-25, Hyatt Regency, Nashville, TN. Contact: American Association of Nurserymen, 1250 I St., NW, Suite 500, Washington, DC, 20005. (202) 789-2900.

**Professional Turf and Landscape Conference**, Jan. 25, Tappan Zee Towne House, Nyack, NY. Contact: Dan Antonecchia, 21 Jackson Avenue, Scarsdale, NY, 10583. (914) 723-1677.

**Northern California Professional Turf and Landscape Exposition**, Jan. 25-26, Oakland Convention Center, Oakland, CA. Contact: Northern California Turfgrass Council, P.O. Box 268, Lafayette, CA, 94549.

**Nurserymen's Personnel Workshop**, Jan. 31-Feb. 2, Columbia Inn, Columbia, MD. Contact: American Association of Nurserymen, 1250 I St., NW, Suite 500, Washington, DC, 20005. (202) 789-2900.

**Landscape/Garden Center Management Clinic**, Feb. 5-8, Galt House Hotel, Louisville, KY. Contact: NLA/GCA Management Clinic, 1250 I St., NW, Suite 500, Washington, DC, 20005. (202) 789-2900.

**Associated Landscape Contractors of America Convention and Trade Show**, Feb. 8-12, Hyatt Regency, Phoenix, AZ. Contact: Gail Morgan, ALCA, 1750 Old Meadow Rd., McLean, VA, 22101. (703) 821-8611.

**Professional Turf and Landscape Conference**, Feb. 16, Civic Center, Hartford, CT. Contact: Anthony D. Penkrat, Connecticut Grounds Keepers Association, 23 Atwater St., West Haven, CT, 06516. (203) 934-3103.

**Northeast Pennsylvania Turf and Grounds Maintenance School**, Feb. 21-22, Luzerne County Community College, Nanticoke, PA. Contact: William Kleiner, County Extension Office, Scranton, PA, 18503.

**Professional Turf and Plant Conference**, Feb. 27, Colonie Hill, Hauppauge, Long Island, NY. Contact: William Alexander, NSLGA, 59 Orinico Dr., Brightwaters, NY, 11718. (516) 665-2250.

**Iowa Turfgrass Conference**, Feb. 27-29, Marriott Hotel, Des Moines, IA. Contact: Dr. Norman Hummel, 105 Horticultural Bldg., Ames, IA, 50011. (515) 294-1870.

**Western Pennsylvania Turf Show**, Feb. 28-March 1, Expo Mart, Monroeville, PA. Contact: Christine King, 412 Blanchard St., Bellefonte, PA, 16823. (814) 355-8010.

**Massachusetts Turfgrass Conference**, Feb. 28-March 1, Civic Center, Springfield, MA. Contact: Dr. Joseph Troll, Dept. of Plant and Soil Sciences, Stockbridge Hall, University of Massachusetts, Amherst, MA, 01003. (413) 545-2353.

**Wisconsin Green Industry Conference**, March 1-2, Marriott Hotel, Brookfield, WI. Contact: Erik Madisen Jr., Wisconsin Green Industry Conference, Box 1936, Appleton, WI, 54913. (414) 733-2301.

**Florida Turf Update and Field Day**, May 17, University of Florida, Gainesville, FL. Contact: Dr. Charles H. Peacock, 1523 HS/PP Bldg., University of Florida, Gainesville, FL, 32611. (904) 392-1832.

## Back to work


## Strike over for crews at Briggs

A three-month strike by members of Local 232 of the Allied Industrial Workers of America was ended recently, thus allowing the Briggs & Stratton Corp. to get back to work producing small engines for the lawn care market.

"We sincerely appreciate the understanding and support of our customers throughout the strike," said Frederick P. Stratton, Jr., president and chief executive officer of the company. "We are moving quickly to resume full production."

The strike began on Aug. 1, 1983.

"Now that the strike is over," Stratton said, "all of our employees must turn their attention to the tasks of improving efficiency and maintaining our strong competitive position."

The company plans to invest at least \$240 million in its Milwaukee facilities over the next 10 years, matching the amount it has invested in the last decade. 

# 2+5 ADDS UP TO THE BEST WARRANTY IN THE BUSINESS.\*

Two years on our Industrial/Commercial engines.

Five years on the Magnetron® Ignition on our Industrial/Commercial engines.

No one comes close to giving you what you get with the new Briggs & Stratton 2+5 I/C engine warranty. Compare this to the 90-day warranty offered by some other engine manufacturers.

Why do we give you such a good warranty? Because we give you such good I/C engines. They're tough, reliable and long lasting, built on

our wealth of experience on worksites around the world.

Our I/C engines come with heavy-duty cast-iron bores. Dual element air cleaners. Cobalite valves and seats. And they all have Magnetron® Ignition, the exclusive Briggs & Stratton electronic system that's so dependable it carries a five-year warranty, when used on I/C engines.

The Briggs & Stratton 2+5 I/C engine warranty. It's simply the best you can get. But the best part is you'll probably never need it.

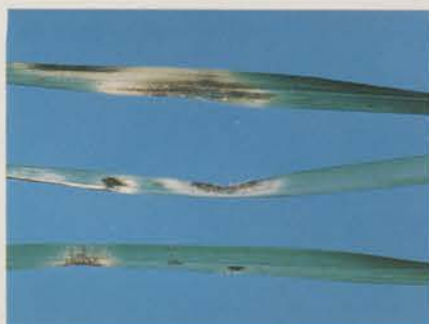
\*Limited warranty. For two years on the I/C engines and five years on the Magnetron® Ignition on the I/C engine. Briggs & Stratton, as an exclusive remedy, will cover all parts and labor costs if failure is caused by defective parts or workmanship.



The power in power equipment.



# HOW TO SELL LAWN DISEASE CONTROL, AND DELIVER IT.



HELMINTHOSPORIUM LEAF SPOT



SCLEROTINIA DOLLAR SPOT



RHIZOCTONIA BROWN PATCH



FUSARIUM PATCH

## Turn disease problems into profits with **CHIPCO® 26019 fungicide.**

Selling disease control is a great way to boost profits and attract new customers.

And CHIPCO® 26019 is the ideal product to help you do both.

### The selling proposition: a beautiful, disease-free lawn.

Everything you do for a customer is designed to create a beautiful lawn. Turf diseases look bad...and that can make *you* look bad. A programmed approach that includes an effective, long-lasting fungicide like CHIPCO 26019 keeps your customers satisfied.

## CHIPCO 26019 is the only fungicide you need.

It can be used safely on all lawn grasses nationwide to control the major turf diseases like leaf spot, dollar spot, fusarium and brown patch. Highly effective and long-lasting, CHIPCO 26019 fungicide fits into your treatment schedule and reduces callbacks.

In short, when you've got CHIPCO 26019 on the shelf, you're ready for *business*.

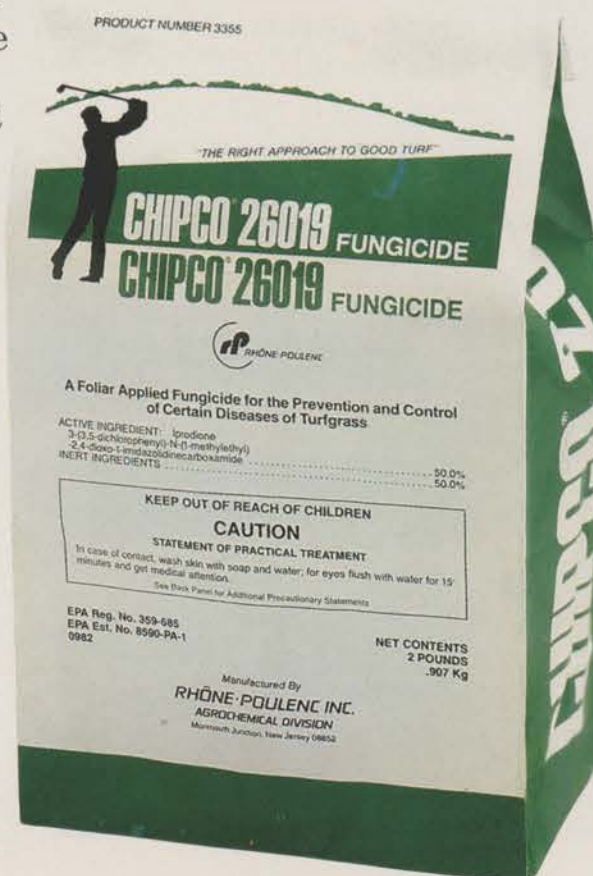
## Send for FREE booklet on how to sell disease control.

We've put together a booklet that details lots of effective techniques and tools for selling disease control to your customers...and delivering it with effective, long-lasting CHIPCO 26019 fungicide.

Turf Fungicide®  
**CHIPCO®  
26019**

**EVERYTHING'S UNDER CONTROL.**

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CHIPCO Fungicide Lawn Care Center  
P.O. Box 125 Black Horse Lane  
Monmouth Junction, NJ 08852



Please send FREE *How to Sell Lawn Disease Control* booklet to:

NAME \_\_\_\_\_

TITLE \_\_\_\_\_

COMPANY \_\_\_\_\_

ADDRESS \_\_\_\_\_

CITY \_\_\_\_\_ STATE \_\_\_\_\_ ZIP \_\_\_\_\_

Circle No. 132 on Reader Inquiry Card



# PRODUCTS



## Chemical spreader is more resistant

A broadcast spreader for professional applications of seed, fertilizer and pest control products on lawns is being made more resistant to damage with parts of new Delrin super tough acetal resin.

LESCO Products has replaced conventional acetal with the tough Du Pont plastic for two gears, a bracket, a bearing and the impeller. Those parts thus have increased resistance to breakage

while retaining the smooth surface, strength and resistance to corrosion, moisture and wear that originally led to the selection of acetal.

"We believe our spreader is now practically immune to rough handling," says LESCO product manager Paul Morgan.

The spreader is now designed for tough day-to-day use: the frame is epoxy-coated steel, the hopper polyethylene. Other features are pneumatic tires and ball bearings and grease fittings that permit lubrication to keep out abrasive chemicals and dirt.

Circle No. 200 on Reader Service Card

## Balan® saves more money & more lawns.

Compare Balan® with any other preemergence herbicide, and you'll find there's not a more economical way to effectively control undesirable, troublesome weedgrasses like crabgrass, goosegrass, foxtail and others.

Balan or benefin is available in many formulations. Whether you choose a sprayable or a granular, you know you will get the same results—excellent weedgrass control at an economical price.

Effective turfgrass management doesn't have to be expensive. With Balan at work, both weedgrasses and your expenses tend to stop growing.

**Balan**

Balan® —  
(benefin, Elanco  
Products Company)

Elanco Products Company, a Division of Eli Lilly and Company, Dept. E-455, Indianapolis, IN 46285, U.S.A.

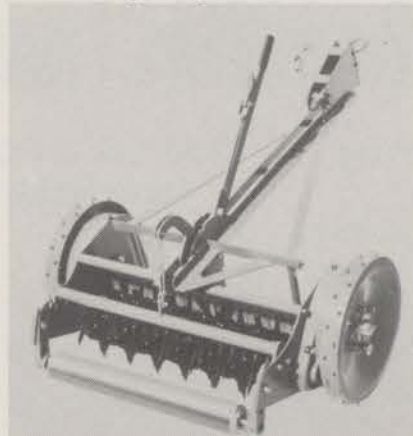


Circle No. 112 on Reader Inquiry Card

## Gang mower is extremely useful

Bunton Co. has introduced a new vertical gang mower designed to perform a variety of functions.

Among the uses for this new entry are mat and thatch removal and soil aeration to help prevent turf disease and provide a healthier grass plant.



The three ground-driven reels have 18 tines per unit, arranged in five radial directions, with an 83-inch overall cutting width. Depth of soil penetration can be adjusted from ground-level to 3/4-inch.

Circle No. 201 on Reader Service Card

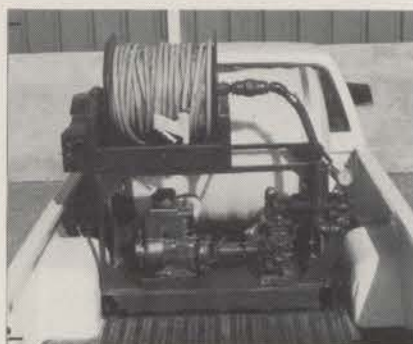
## Spray unit is self-contained

Professional Turf Equipment recently released a new self-contained spray unit for intermediate range pickup trucks.

The spray truck unit comes complete with electric hose reel, electric start engine and 100-gallon capacity. This unit can be used for tree and shrub or lawn applications.

One model is also available with split tanks.

Circle No. 202 on Reader Service Card



## Pressure washers come in two sizes

High pressure performance for all types of cleaning is now available in Broyhill's improved pressure washers.

Units are mounted on a two-wheel upright frame. Each comes with Hypo Triplex Plunger Pump Series 88 and electric motor or gasoline engine. Spray guns and 30 feet of hose are available for all models.

These washers are available in 1300 psi or 1500 psi sizes. One has

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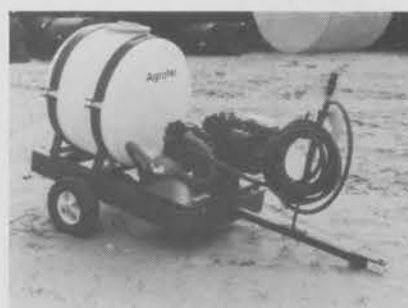


over the normal piston or roller pumps because of its reliability and ease of operation and repair. It can pump and spray virtually any type of pesticide or fertilizer liquid.

Several models are available, mounted on either trailers, skids or three-point hitch frames.

The new gear-driven pump will deliver 6 gpm at 275 psi. The unit is powered by a gasoline motor.

Standard equipment includes 25 feet of high pressure hose and a handgun with adjustable patterns for easy and precise application. Options include a two-wheel



dolly that converts trailers to a four-wheel handcart, a spray boom and polyethylene tanks from 25 to 55 gallons capacity, plus a variety of accessories.

Circle No. 205 on Reader Service Card

## Attachment saves time and money

Commercial landscape maintenance professionals can save valuable time with a new, innovative and low-cost Roto-Disc.

This sturdy attachment for gasoline-powered line trimmers reduces time spent maintaining areas in two ways. First, it allows areas to be covered quickly and thoroughly; second, it allows the spinning disc to go beneath the ground, uplifting weeds at their roots.

to page 26

3.7 gpm at 3 hp and 1300 psi at 1740 rpm; another 3.7 gpm at 5 hp with 1300 psi at 3600 rpm. The larger series are 2.9 gpm at 3 hp with 1500 psi at 1740 rpm; and 2.9 gpm at 5 hp with 1500 psi at 3600 rpm.

Soap injection systems are available for all with two-gallon container and holder, 3000 psi glycerin gauge and 500-2100 psi unloader valve.

Circle No. 203 on Reader Service Card

## Hose reels made for lawn operations

For ease in handling and storage of hoses used by the lawn care industry, Aero-Motive Manufacturing Co. offers its broad line of hose reels.

These reels are rated for up to 1,000 psi with hose capacities up to 1½ inches inside diameter and



lengths up to 1,000 feet. Standard options are available for higher pressures and special seals and fluid path materials.

Drums and frames are welded steel, coated for corrosion resistance. All are permanently lubricated and feature low friction bearings and drum locks.

Other options are: different inlet locations, rim wind, direct wind, hand crank, geared hand crank, 12 VDC motor drive and hydraulic motor drives.

Circle No. 204 on Reader Service Card

## Diaphragm pump has endless list of uses

Agrotec, Inc., a manufacturer of spraying equipment and accessories, has introduced a new diaphragm piston pump on Agrotec Estate Sprayers.

The pump has an advantage

## BOOKSTORE

Instructional and technical material designed to aid you in your work.

- |   |   |
|---|---|
| 625 - ADVANCES IN TURFGRASS ENTOMOLOGY \$24.95                                    | 645 - MANAGEMENT OF TURFGRASS DISEASES \$24.95                          |
| 010 - ADVANCES IN TURFGRASS PATHOLOGY \$27.95                                     | 575 - MODE OF ACTION OF HERBICIDES \$54.95                              |
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| 345 - COST DATA FOR LANDSCAPE CONSTRUCTION 1984 \$27.50                           | 790 - RECREATION PLANNING AND DESIGN \$39.50                            |
| 410 - DISEASES & PESTS OF ORNAMENTAL PLANTS \$29.95                               | 380 - RESIDENTIAL LANDSCAPING I \$22.50                                 |
| 660 - DISEASES OF SHADE TREES \$23.50   | 720 - SHRUB IDENTIFICATION \$8.00                                       |
| 610 - DISEASES OF TURFGRASSES \$30.00   | 750 - TREE IDENTIFICATION \$9.95  |
| 800 - THE GOLF COURSE \$35.00   | 760 - TREE MAINTENANCE \$35.00  |
| 350 - HANDBOOK OF LANDSCAPE ARCHITECTURAL CONSTRUCTION \$48.50                    | 640 - TURF IRRIGATION MANUAL \$22.95                                    |
| 675 - HILLER'S MANUAL OF TREES & SHRUBS \$20.50                                   | 615 - TURF MANAGEMENT FOR GOLF COURSES \$45.00                          |
| 510 - HORTUS THIRD \$125.00   | 620 - TURF MANAGEMENT HANDBOOK \$18.00                                  |
| 690 - INSECTS THAT FEED ON TREES & SHRUBS \$47.50                                 | 110, 120 - TURF MANAGERS' HANDBOOK \$28.95 hardcover, \$23.95 paperback |
| 635 - IRRIGATION PRINCIPLES AND PRACTICES \$39.95                                 | 650 - TURFGRASS MANAGEMENT \$21.95                                      |
| 395 - LANDSCAPE ARCHITECTURE \$34.95  | 630 - TURFGRASS: SCIENCE & CULTURE \$27.95                              |
| 300 - LANDSCAPE DESIGN: A PRACTICAL APPROACH \$19.95                              | 655 - TURFGRASS: SCIENCE & CULTURE LABORATORY MANUAL \$12.95            |
| 370 - LANDSCAPE OPERATIONS: MANAGEMENT, METHODS & MATERIALS \$20.95               | 565 - WEEDS \$37.50   |
|   | 570 - WESTCOTT'S PLANT DISEASE HANDBOOK \$36.50                         |
|   | 405 - WOODY ORNAMENTALS \$27.00   |

## CLOSEOUTS

### ORDER THESE TITLES AT SPECIAL REDUCED PRICES!

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LCI 1/84





The Roto-Disc process also turns the soil over, aerating; and it can be used as a soil/fertilizer mixer.  
Circle No. 206 on Reader Service Card

### Roll-on spreader makes tasks easier

A new liquid spreader has been announced by Streater Specialties that makes green, weed-free lawns an easy task.

The new Guard-N-Grow roll-on liquid spreader will spread liquid fertilizers, herbicides or insecticides without worry about wind drift. Lawn care technicians can work close to flower beds, trees and evergreens without possibility of damage.

Guard-N-Grow can easily be



operated either by hand or by towing it behind a riding mower or tractor.  
Circle No. 207 on Reader Service Card

FOR INFORMATION CONTACT:

**J & L ADIKES, INC.**

Jamaica, N.Y. 11423

**NORTHROP KING CO.**

Minneapolis, MN. 55413

**VAUGHAN SEED CO.**

Brund Brook, N.J. 08805

Downers Grove, IL. 60515

**JACKLIN SEED CO.**

Post Falls, ID. 83854

**ROTHWELL SEEDS, LTD.**

Lindsay, Ont., CAN K9V 4L9

**\$ FOR \$**  
**POUND FOR POUND**  
**NOTHING EQUALS**

**Adelphi\***  
KENTUCKY BLUEGRASS

THE GREENER KENTUCKY BLUEGRASS™



\*U.S. Plant Pat. No. 3150

Circle No. 101 on Reader Inquiry Card

### Mid-mount mower made for tough jobs

A new heavy-duty mid-mount mower built for professional lawn care is now available from the Kubota Tractor Corp.

The RC60-27 mower, with a 60-inch cutting width, is specifically for use with both two-wheel and four-wheel drive models of Kubota's L235 rated at 19.6 PTO hp and L275 rated at 23 PTO hp tractors.

It is powered by a drive shaft between the front PTO system



and the mower gear box. To improve cutting on uneven terrain, a pantograph linkage supports the mower at four points, offering better suspension and deck flotation.

Gauge wheels adjust cutting height from 1½ inches to 4 inches in half-inch increments. The mower also has three adjustable anti-scalp rollers.

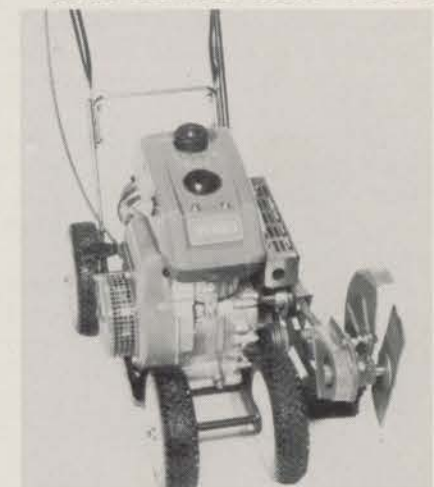
Circle No. 208 on Reader Service Card

### Two gas-powered edgers expand line

The Toro Co. announces an expansion of product lines with the addition of two gasoline-powered edgers: a 2 hp and a 3½ hp unit.

The engines are equipped with a four-cycle, long-life engine with low-noise muffler, flywheel magneto ignition and oversized fuel tank.

Both models have Toro's



unique, exclusive pre-set depth control. On the 3½ hp model, the blade tilts from 20° to 45°, based on actual commercial cutter research. This same 3½ hp model also has an exclusive drop wheel design for high curb edging and most efficient performance in its class.

Circle No. 209 on Reader Service Card



## New mower saves time on big jobs

Gravely International recently announced an addition to its professional line of Pro Series out-front mowers, the Pro Master 60, designed for operating efficiency and saving time on big jobs.

The Pro Master 60 is equipped with a 60-inch mower and a 17 or 19 hp Kohler engine. It offers a unique hinged frame that transfers weight to the drive wheels for stability on hills, and allows the mower to follow ground contours and ride over obstructions.

The three-wheel design permits a zero inside turning radius;



additional features are all-gear direct drive, instant forward and reverse, 5.1-gallon tank and maintenance-free battery.

Circle No. 210 on Reader Service Card

## Covers protect tires and equipment

Griffolyn Division of Reef Industries is now offering custom-fitted equipment and tire covers.

Each rugged cover is made from a five-ply nylon reinforced plastic sheeting material to weather all extremes and provide long-range outdoor protection—especially during the winter months. Degradation caused by constant freeze/thaw cycles is eliminated by using these covers.

They are made to your exact specifications in just 10 working days.

Circle No. 211 on Reader Service Card

## Hedge trimmer for professionals debuts

Engineered especially for the professional landscaper, the Model 2400 hedge trimmer from The Green Machine incorporates a host of advancements in design for cleaner, faster cutting and shaping of hedges, vines and ornamentals.

Powered by a 1.2-hp two-cycle engine that produces 6500 rpm, the Model 2400 slices through branches up to one inch in diameter, and it can cut at any angle.

Blades are 30 inches long. Cutting speed is 34 cycles per second, one of the fastest available.

Circle No. 212 on Reader Inquiry Card



## Biggest crowd

Some of the largest crowd in the history of the Professional Lawn Care Association of America convention listen to keynote speaker Jack Van Fossen last November. More than 800 lawn care businessmen turned out for the convention in Indianapolis.

# Sometimes, your problems just get bigger. Luckily, so do our solutions.



If you have a need for a big utility tractor to handle tougher than normal jobs, we have two suggestions: the new John Deere 1450 and 1650 Diesel Tractors. These tractors are made for jobs that few other tractors in their price range can match.

Both have tough direct-injection 4-cylinder diesel engines—50 PTO hp in the 1450 and 60 PTO hp in the 1650 (55 and 67 engine horsepower).

On each tractor you'll find a collar-shift transmission with 9 forward and 2 reverse speeds. Planetary final drives. And a rear-axle mechanical differential lock.

Hydraulic wet-disk brakes are also standard, with a separate parking brake for added convenience and safety.

The operator's station is well designed, too. You'll find a large, roomy platform. A comfortable suspension seat. Plus a quiet engine to make work more pleasant.

And both the 1450 and 1650 are available with optional mechanical front-wheel drive, factory-installed. Along with John Deere's reputation for quality and dependable dealer service.

For the name of the nearest dealer, or a free folder on the John Deere 1450 and 1650 Utility Tractors, call 800-447-9126 toll free (800-322-6796 in Illinois) or write John Deere, Dept. 67, Moline, Illinois 61265.

New John Deere 1450 and 1650 Tractors. Proof that bigger sometimes really is better.



**Nothing Runs Like a Deere®**

Circle No. 110 on Reader Inquiry Card







### New officers

Shown above are new officers of the Alabama Turfgrass Association. Left to right: associate director Jerry Fuller of Montgomery; president-elect William Dodd of Mobile; associate director Joe Williams of Lawn Master in Pensacola; president Ronnie Zwiebel of Green Care Lawn Service in Birmingham; associate director Steve Wood of Montgomery; secretary-treasurer Dr. Ray Dickens of Auburn University; and associate director M.C. Nixon of Midway.

## Nitrogen and the soil

from page 16


to the plant and best agronomic responses occur at low to moderate nitrogen application rates. Risk is always involved in the use of quickly-available nitrogen sources during warm, dry weather. New technology has produced UF-type nitrogen sources with high water solubility but low burn potential.

Many of the slowly-available nitrogen sources that have a high WIN content, like Nitroform, can be applied at higher rates and less frequently than quickly-available sources. In fact, nitrogen sources that have a high WIN content usu-

ally provide best overall turf quality at higher rates per application than are traditionally used for quickly-available sources.

### Conclusions

Generally, at least two applications per year are considered necessary for maintaining an acceptable level of turf quality. Many commercial formulations consist of both quickly-available and slowly-available sources. These fertilizer products attempt to include the advantages of both types.

It is important to understand the differences in nitrogen sources and fertilizer products before making decisions on product, application timing, and application rates. 

## NEWS

### Monsanto adds to its facilities

The Monsanto Co. is planning a multi-million-dollar research and development facility for its existing operation in west St. Louis County, Missouri.

According to Monsanto officials, the addition includes a two-story building that will house process-development laboratories for Monsanto's plant growth regulator, human health care and animal nutrition products.

The reported \$150 million project is scheduled for completion by March, 1985.

### OMC-Lincoln names dealer

OMC-Lincoln has appointed Toro Pacific Distributing as a new dealer for Cushman and Ryan products in southern California.

OMC-Lincoln has also sold its operation in Cerritos to Toro Pacific.

Under the new arrangements, Toro Pacific will handle the company's personnel and burden carriers and turf products in Cerritos, City of Industry and San Diego. The Cerritos location will handle Cushman industrial industrial and commercial lines; City of Industry will handle all product lines; and San Diego will handle only turf-related products.

### Drexel announces label alteration

Drexel Chemical Company, Memphis, Tenn., has announced a change in the label for its Atrazine 4L herbicide, which has been approved by the Environmental Protection Agency.

Atrazine 4L now contains use instructions for weed control in St. Augustine, centipede and bermuda grasses.



### "My Business Has the Competitive Edge with Grasshopper."

Ralph Starr

Starr Lawn & Garden, Inc., Dallas, Texas

... "I needed a machine that could get in and out of corners without having to stop and back up. Grasshopper's compact size, out front deck, and zero-turning radius keep me going even in the tight spots."

... "I purchased Grasshopper because it is quick and it saves man hours. I'm able to mow the same acreage with up to 3 less men."

... "I really appreciate my Grasshopper dealer. He really cares and it shows in the reliable service he provides."

... "I think it's a great machine... Grasshopper is the type of machine I need for my work and it's the best available."

OPTIONAL ATTACHMENTS  
Vacuum Grasscatcher  
Snowthrower  
Dozer Blade  
Sweeper

Your Business Should Have the Competitive Edge Too!  
See Your Local Grasshopper Dealer Today and Ask for Your Free Demonstration.



THE GRASSHOPPER COMPANY

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### COUNT ON NITRO-26 PLUS

1 Week  
2 Weeks  
3 Weeks  
4 Weeks  
5 Weeks  
6 Weeks  
7 Weeks  
8 Weeks  
9 Weeks  
10 Weeks

A Liquid Nitrogen  
fertilizer solution.

A Combination of controlled release  
nitrogen (slow release)  
and free nitrogen for quick green up.

NITRO-26 PLUS

C.P. Chemical Co. Inc., 39 Westmoreland Avenue  
White Plains, N.Y. 10606 (914) 428-2517

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look what  
**LEBANON**  
is doing  
to solve your soil-  
deficiency problems!

#### Greens & Bent Grass Tees

18-4-10 90% Org. 20-0-10 50% Org. 18-3-12 70% Org.

#### General Purpose Fertilizer

Country Club 18-5-9 50% Org.	Country Club 20-20-20 Soluble	Greenskeeper 16-8-8
Country Club 12-4-8 50% Org.	Country Club 33-0-16 Soluble	Greenskeeper 10-6-4 25% Org.
Country Club 13-25-12	LebPro 27-3-5 S.C.U.	Country Club 28-7-14 Soluble
Greenskeeper 20-4-10 40% Org.	Country Club 29-3-5 25% Org.	LebPro 32-4-8 S.C.U.
Greenskeeper 10-6-4 50% Org.	Country Club 8-4-24 30% Org.	LebPro 28-6-12 S.C.U.
Greenskeeper 20-8-8 50% Org.	Ready to formulate most any analysis you determine will meet your turf needs.	

what can lebanon do for you?

SEE PAGE 6

Circle No. 125 on Reader Inquiry Card



## Hiring for profit

If you are in the market for workers, it might pay to hire someone from one of the categories the federal government recognizes as hard-to-employ.

By doing so, the employer earns a tax credit off gross income: 50 percent of first-year wages up to \$6,000 per worker and 25 percent of second-year wages up to \$6,000.

Here are groups defined by the Targeted Job Tax Credit:

- recipients of Federal Supplemental Security Income cash assistance
- recipients of state and local general assistance payments for at least 30 days
- handicapped persons referred by state vocational rehabilitation or VA programs

- youth (18-24) from economically disadvantaged families
- economically disadvantaged Vietnam-era veterans
- youth (16-19) from economically disadvantaged families who participate in a qualified cooperative education program, augmenting vocational education classroom study with a job
- economically disadvantaged felons, hired no later than five years after release from prison or date of conviction, whichever is more recent
- recipients of Aid to Families with Dependent Children who are eligible on the hiring date and have received it for 90 days immediately prior to being hired, and participants in the Work Incentive Program
- economically disadvantaged summer youth employees 16 or 17 years of age on the hiring date who have not worked for the employer previously.

## Three added to magazine

from page 1

generally known as the "George Washington" of the Professional Lawn Care Association of America (PLCAA), having served as its president for the first 2½ years of its existence.

Faulring, who recently became the father of his fourth child, has a bachelor's degree in agronomy from Purdue University and has spent 14 years in the turfgrass industry. He founded Hydro-Lawn, one of the nation's largest lawn care companies, in 1973 following 3½ years as a sod producer with Summit Hall Turf Farms.

Kujawa, a Wisconsin native, graduated from Marquette University with a degree in marketing. Next month, he will step down as chairman of the Landscape Management Division of the Associated Landscape Contractors of America (ALCA), of which he has been a member since 1972. Kujawa, married and the father of four, founded KEI Enterprises 13 years ago.

Dr. Street is a native of Pennsylvania. His doctorate in agronomy is from Ohio State, and he has 15 years in the turfgrass industry under his belt. Dr. Street is a member of the Ohio Turfgrass Foundation, the American Society of Agronomists, the Soil Science Society of America and the Crop Science Society of America. Before taking his current position, the father of four spent four years as an extension specialist at the University of Illinois.

All have been involved extensively with LAWN CARE INDUSTRY in the past. Faulring wrote a two-part series on pesticides in 1983, and was the subject of a feature story last month. Dr. Street began a story about nitrogen fertilizers last month which continues this month. And Kujawa was subject of a August, 1983 in-depth interview.

Besides serving in their advisory capacities, each will write two columns per year for the magazine, beginning with an observation by Kujawa next month.

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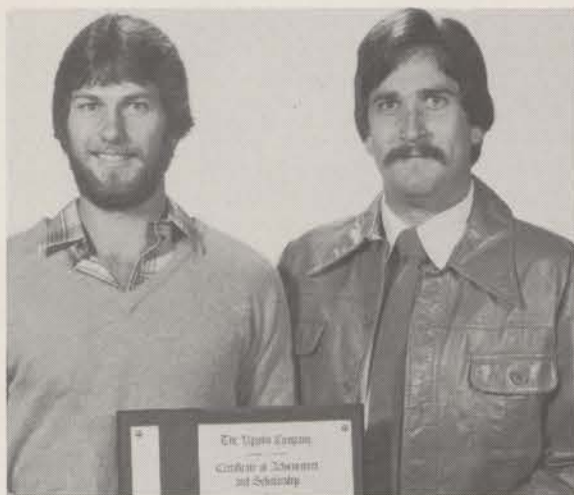
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# NEWSMAKERS



Paul Colleran (left photo, left) accepts his scholarship award from Randy King of TUCO. Russell Vandehey (above) was another TUCO scholarship winner.

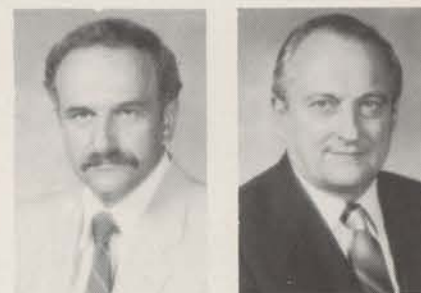
William J. Davids has been promoted to vice-president of operations for Clarence Davids and Sons Inc. landscape maintenance. His new duties include corporation management, major purchasing and involvement in selling maintenance accounts. In addition, the organization has promoted **Todd M. Meyer** to maintenance production manager, responsible for supervising employees at the individual sites and being liaison between company and site managers.

Two horticulture students at Oregon State University have

received turf management scholarships: **Russell Vandehey**, a junior in turf management, received the Bruce Faddis Memorial Award and **Paul Colleran**, a turf management senior, won a \$500 TUCO scholarship.

**Leland (Lee) Emery Mitchell** was elected to the Board of Directors of the American Association of Nurserymen. Mitchell will represent AAN's Region VI, which is composed of states and territories in the Pacific area. Mitchell has been a Utah Association of Nurserymen board member for 15 years.

**Helmut M. Adam**, former vice-president of finance and operations, has been appointed president of Ransomes, Inc. **Rowland R. Lehman** has been promoted from vice president of marketing to executive vice-president. Both are members of the company's Board of Directors.



Adam

Lehman

**Roger E. Yount II** has been named account supervisor for Barker Campbell & Farley, a Virginia Beach, Va. advertising agency. He will work with **Bob Stiffler**, senior vice-president and director of the agency's agricultural/horticultural division. Yount is a graduate of Ohio State University.

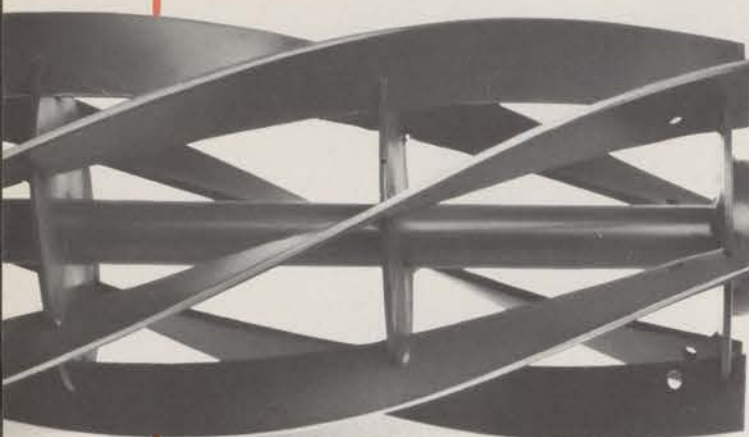
Mott Corp., originator of the safety flail mowing system, has named **H. Allan Bloomingburg** territory manager for the Carolinas, Tennessee and Kentucky. He held a similar position with Wheel Horse Sales. Mott also promoted **Joseph Berdych** to manager of distributor sales. Berdych has been with the company since 1957.

**Jeff Wright** has been named regional sales manager for Tanaka Kogyo, a manufacturer of outdoor power equipment. Wright, who will be based in Atlanta, was formerly with Flymo, Inc.

**Robert F. Lederer**, executive vice-president of the American Association of Nurserymen, was recently honored for his "commitment to the highest standards of excellence in the field of commercial horticulture" by the American Horticultural Society.

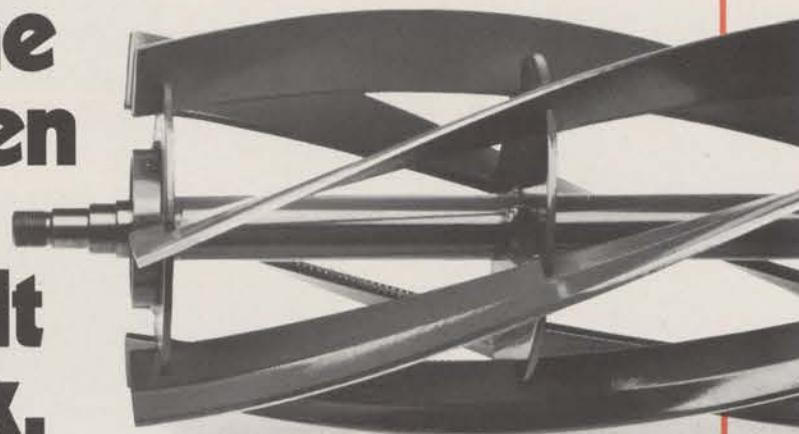
**David L. Garelick** has been appointed vice-president of sales and marketing for Acme Burgess, Inc., Grayslake, Ill. He has been with Acme Burgess, a manufacturer of lawn and home care products, since 1974.

With the appointment of **Jacques T. de Lannoy** as vice-president of marketing and sales, the



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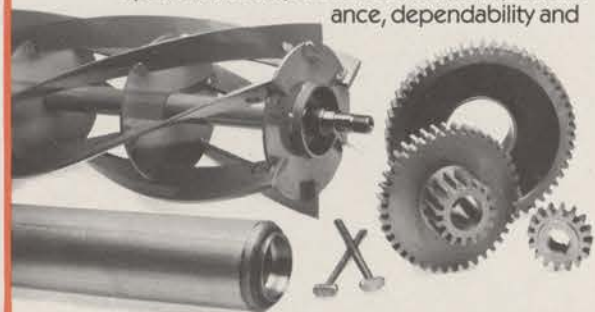
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## TOOLS, TIPS, TECHNIQUES

Wheel Products Division of the Amerace Corp. will reorganize its marketing sales force. Added to the sales staff were **Jeffrey L. Hays** (west coast) and **Michael F. Donio** (south central).

**Ron George** was recently named district sales manager for Beaird-Poulan/Weed Eater's eastern region. He had been with the McCullough Corp. for 10 years.

National Fertilizer Solutions Association executive vice-president and CEO **David K. Murray** has announced his resignation, effective Jan. 2. He will become executive vice-president and co-owner of Dove Communications in Peoria, Ill. He has held his NFSA positions since 1979.

**Marlin Lloyd**, president of



**Murray** **Odash**  
Kaye Corp., Mankato, Minn., has appointed **Jerry Odash** sales manager for the Commercial Turf Division. Odash was formerly sales manager for Highway Sales, Addison, Ill. Kaye Corp. is a distributor of outdoor power equipment.

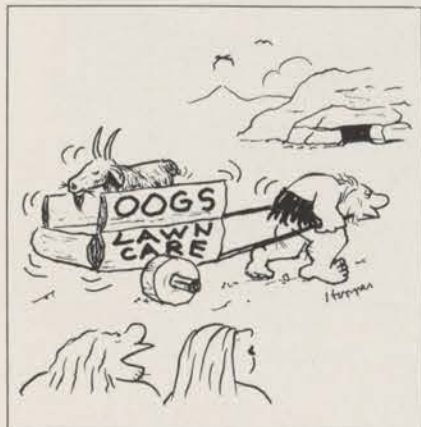
**Mark Betker** has been named vice-president and general manager of BlueBird International, Englewood, Col. Betker was previously vice-president of operations at the Markon Mfg. Co., Denver. He has an MBA degree from Regis College, Denver.

**Michael J. Fritz** is the new editor of "Fertilizer Progress" magazine, a publication of the Fertilizer Institute.

The Toro Co. has a new marketing manager: **Robert J. Little**, who will be responsible for management of the company's gas trimmer, gas edger and generator product lines.

**Lawrence S. Norton** has been hired by the National Agricultural Chemicals Association as secretary-treasurer, succeeding **Dennis Hayley**, who is retiring after a 47-year career in agri-chemicals.

### LAWN FUNNIES



"He calls it lawn care, but it'll never catch on."

### Using city hydrants

Many lawn care and maintenance businesses are taking advantage of city fire hydrants to fill their spray trucks with water.

According to Ralph Dupler of North Haven Gardens, Dallas, Texas, many cities will rent water meters to companies wishing to use city hydrants. Dupler made the point during the annual Associated Landscape Contractors of America (ALCA) Landscape Management Division national conference late last year.

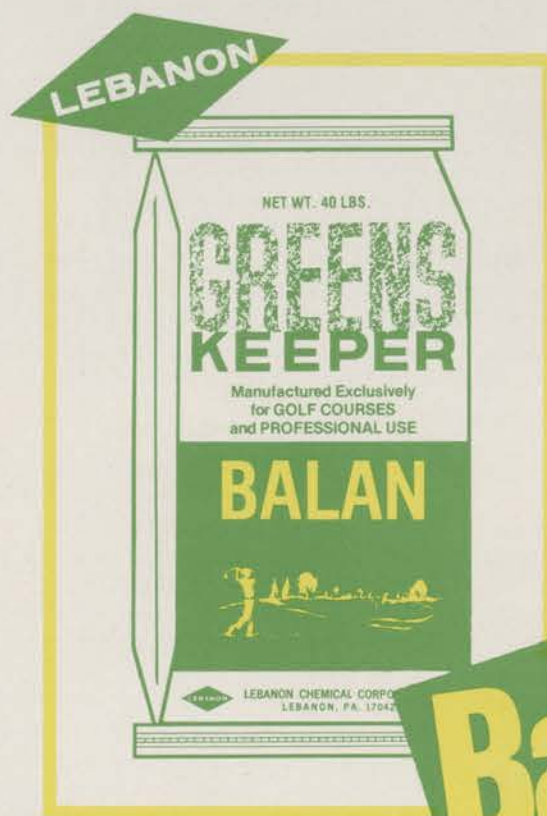
You can check with your local city water department to get meters installed on the trucks, and you can count on paying the same

rate as incurred by residential customers (not much at all).

There are a couple key points to watch out for, though.

One is that many cities and/or states require backflow preventers for use with chemical systems, to assure that residential drinking water does not get contaminated.

Another hazard is extracting water from hydrants in locations where you lack the proper permission and metering system. Warns Tracy Morland of Maintain, Inc., Dallas, Texas: "You don't want to get caught taking water where you're not metered. Fire marshals like to pretend they're real deputies sometimes."



Greenskeeper BALAN®  
Crabgrass Control

For long lasting control of crabgrass and most annual weeds, Lebanon Chemical now introduces its complete line of **Balan®** Crabgrass Control Products. Each one gives you the quality, dependability and effectiveness Lebanon is known for, while helping you eliminate one of turf's toughest problems.

Specifically designed for excellent spreadability is Lebanon's **Greenskeeper Balan Crabgrass Control**. This selective pre-emergence herbicide is impregnated on a 12-24 mesh attaclay to guarantee a wider, more even distribution of particles on your lawn and turf.

And since Balan is proven to be more effective when used with fertilizer, Lebanon also offers this crabicide in combination with their quality **Country Club 18-5-9** and **29-3-5** homogenous fertilizers for turf. These granular products save you both precious time and money by fertilizing turf and controlling crabgrass and poa annua simultaneously.

At Lebanon, we realize not everyone's crabgrass problems are alike, so we also bring you:

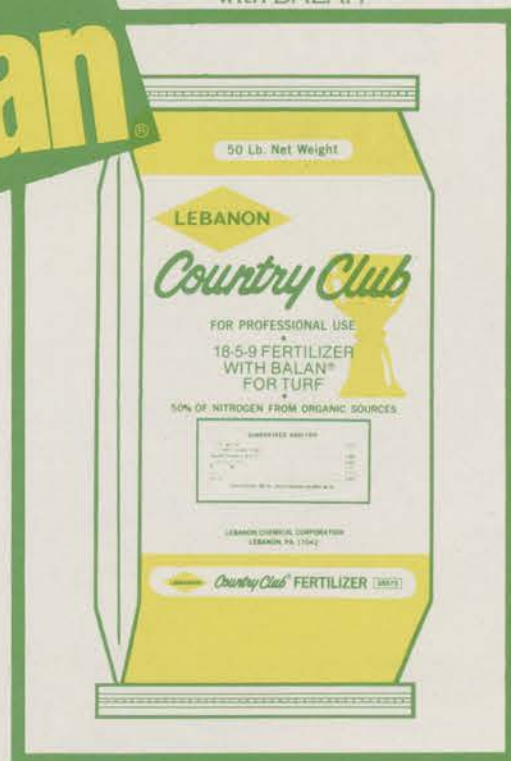
Greenskeeper "Balan" 10% Dryflow  
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\* Balan is a registered trademark of Elanco Products Co.

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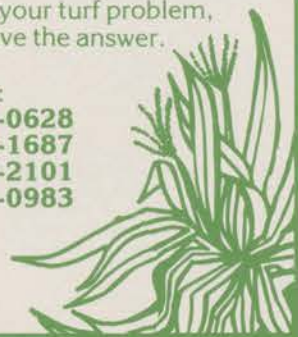
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# Lawn Medic franchise in 'hotbed of diseases'

Springfield, Ill. may not be a hotbed for many things. But, according to Jack Robertson, it is a "hotbed of lawn disease problems."

As owner of the Springfield franchise of Lawn Medic, Inc. (a national lawn care company based in Rochester, N.Y.), Robertson says that lawn diseases are the biggest problems he has to deal with each year.

"We're in a continental zone here, where we get high humidity and high summer temperatures, so diseases really seem to flourish," says the 27-year-old, who bought the franchise five years ago after working for the firm for two years.

"Lawns here develop more disease and we have a longer disease season, whereas when you get farther north, toward Chicago, you get a cooler climate and the disease season is shorter."

Heavy rainfalls in April cause outbreaks of leaf spot, while *Fusarium* blight generally flourishes after excessive moisture in July. Dollar spot season generally runs between the late spring and through the summer, so that "we



Jack Robertson with some of Lawn Medic's lawn care equipment.

always have a disease problem to worry about," says Robertson.

"The pathogens are everywhere, of course," he adds. "But our job is preventing them from

taking hold, or controlling them when they do. It's just a matter of using the right cultural practices, the right fungicides and planting disease-resistant grass varieties."

## Seasonal services

With four seasonal employees and one fulltime supervisor, Lawn Medic of Springfield serves 1,500 customers in a 25-mile radius of Springfield.

About 85 percent of its customers subscribe to the basic or "Pro-Care" service, which provides quarterly fertilizer applications and treatments for broadleaf weeds crabgrass and insects. The remainder of the Springfield franchise's homeowner customers subscribe to the "Putter's Green"

service, which features six applications throughout the growing season.

"Through our Putter's Green program, we're on the customer's lawn an average of once a month and are able to provide intensive lawn care service," states Robertson. "We're out there twice in the spring, twice in the summer and twice in the fall, basically applying the same treatments as the Pro-Care service, only more of them. We also do seeding and apply fungicides with this program."

As part of the Putter's Green service, Lawn Medic crews overseed bare spots and seed new lawns, planting a combination of

to page 36

## Introducing... The 91/55 Twin hydrostatic industrial lawnmower HECKENDORN

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☐ Mowing/maintenance lawn care company

#### B. SUPPLIER:

- ☐ Chemical dealer and/or distributor  
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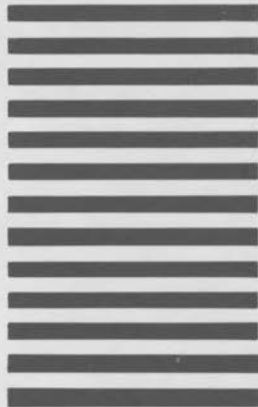
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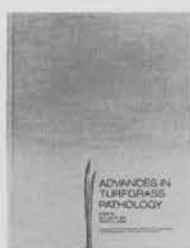
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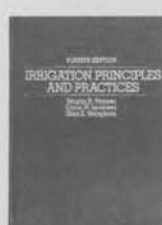
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For more information, call Deering, Ron Wilson, Bob Minick or Carla Christian in New Carlisle, Ohio: (513) 845-3897.

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## Lawn Medic in hotbed of diseases

from page 32

Baron bluegrass, Derby perennial rye, Yorktown ryegrass, and various fine-leaved fescues.

"We can't just rely on one species or variety, because then you really limit yourself as far as disease-resistance goes," says Robertson, who has a degree in agronomy from Western Illinois University. "With different turf species and varieties, you will only get minimal damage even if one of the strains becomes susceptible to one of the diseases."

### Cultural disease control

Proper cultural practices can make all the difference in preventing lawn disease outbreaks, according to Robertson. He stresses the importance of this aspect of lawn care to his customers, providing brochures and giving recommendations on watering and mowing for optimum results.

Morning watering is particularly important in his area, he says—because if the customer waters at night, he provides a cooler, wet, dark environment, allowing diseases to reproduce even faster. In addition, Robertson advises customers to keep lawns mowed to a length of 2½ to 3 inches so the blades will dry out faster and receive more oxygen than turf left to grow longer.

"Thatch removal is another significant factor in disease prevention," he adds. "Not only does a heavy thatch layer hold more moisture so the lawn can't dry out as quickly, but it creates a breeding ground for pathogens. We recommend a thatch layer of no more than ½-inch, and we also suggest that our customers remove all clippings after they mow."

Until recently, Robertson relied more on cultural practices than chemical fungicides for disease prevention and control. He says that most of the products on the market control only one or two diseases and require frequent applications for any results at all.

However, when Chipco 26019 fungicide came on the market four years ago, he experimented and found that it would control a wide variety of diseases, with a residual effect lasting as long as three to four weeks.

"Chipco 26019 has the longest residual control of any product we've ever used," states Robertson.

### Preventive treatments

As a part of the Putter's Green service, customers routinely receive Chipco 26019 as a preventive treatment during the first summer application.

"We find that the lawns we treat preventively have fewer disease symptoms later in the year than the lawns that were untreated," says Robertson. "But we also have many customers on the Pro-Care service who will get one or two treatments on an optional



cost basis. The majority of our lawns have some disease throughout the growing season, but not all of our customers choose to treat the symptoms."

### Customer satisfaction

Besides fungus problems, Robertson says that white grubs are another big problem in central Illinois lawns. In fact, the problem was so widespread last year that a routine insecticide application was added to the Pro-Care program at no additional charge to the customer.

"Customer satisfaction is the most important part of this business. Before you've obtained that, you can't even think about trying to make a profit. You're not going to stay in business long without satisfied customers."

Robertson has increased his business a minimum of 20 percent per year in the midst of the recession. He started with a base of 175 customers in 1978 and, through his new business efforts and the purchase of the local Lawn Doctor franchise in 1981, has expanded the operation to include its present 1,500 customers.

"They're not all satisfied all of the time," he says, "but we have very few complaints for the number of customers we serve. We figure if we can keep most of them happy, we're doing well." ■

### Wauconda

## Pesticide users get their way

Professional pesticide applicators in Wauconda, Ill. received some concessions from that city's trustees late last year.

"About 75 percent of what we wanted happened," said Tom Panattoni of True Green, Carol Stream, Ill. Panattoni said that prenotification of pesticide application was overturned, along with some of the "scary" terminology in post-application signs, which had been required due to an earlier judgment by the city trustees.

Under current city law, lawn care companies need only erect a sign stating that their company applied chemicals, the date of application and a warning to keep children and pets off lawns.

Panattoni, in a telephone call to LAWN CARE INDUSTRY's editorial offices, noted that there was some opposition to a November, 1983 article.

"I don't think we let the situation get out of hand," Panattoni said, quoting the article. "This town had an ordinance since 1964 that was basically the same thing (as the new law), but they never really enforced it. We simply didn't know about the situation."

"Since this thing started, though, all of us in Chicago—even though we're competitors—have done a lot as a group, and with money out of our own pocket." ■

## MONEYWISE

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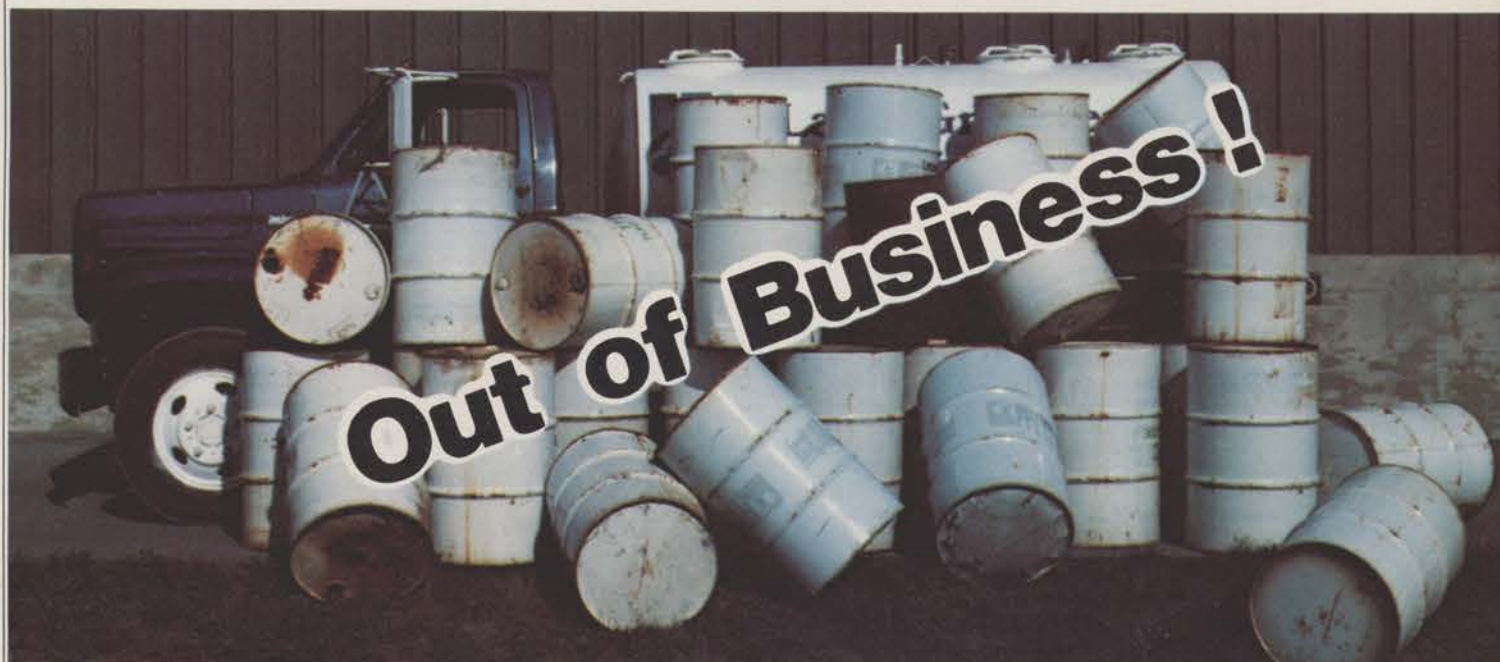
Your customers may be giving you definite danger signals which should indicate awareness in your credit department, according to the North Carolina Landscape Contractors Association.

A wise lawn care businessman is always on the look-out for such signals. Here are some of them, which were listed by the NCLCA in its spring newsletter:

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## Seed facts

## Update on perennial ryegrass

By Dr. C. Reed Funk  
and Dr. R.H. Hurley

The improved turf-type perennial ryegrass (*Lolium perenne*) of today are a great improvement over the ryegrasses available just a few years ago.

Compared with common perennial ryegrass, they have finer leaves and greater density. They are much more attractive, more persistent, more resistant to many diseases, more shade tolerant, lower growing, easier to mow, and have much better turf forming properties.

They are more tolerant of close mowing, cold winters and warm summers. They are also quick to germinate, easy to establish, highly wear tolerant, and will grow on a wide range of soils.

Available turf-type ryegrasses include: Palmer, Prelude, Yorktown II, Manhattan, Pennfine, Birdie, Citation, Omega, Derby, Diplomat, Regal, Fiesta, Dasher, Blazer, Loretta, Pennant, Delray, Premier, Barry, and Elka. All\*Star, Gator and Manhattan II will also be available in quantity following the 1983 harvest.

### Showing promise

Experimental varieties presently under development show promise of continued improvements in mowability, disease and insect resistance, stress tolerance, attractiveness, ease of maintenance and turf performance.

The rapid, easy establishment of the turf-type ryegrasses has been a prime factor in their popularity with both homeowners and turf professionals. With favorable conditions, germination can be expected within five days.

A mowable turf can be produced within three weeks with favorable fertility, moisture and temperature. They can provide a quick temporary turf in heavily shaded areas. Their excellent seedling vigor, tillering ability and wear tolerance make them very useful on areas that receive heavy use—especially during cool weather.

The ryegrasses are most vigorous during the cool, moist periods of spring and fall and are most wear tolerant during these seasons. They have a tough leaf and a low crown. However, areas receiving excessive wear should be overseeded regularly.

Like other turfgrasses, the turf-type ryegrasses show their best wear tolerance under conditions where they are best adapted. Wear tolerance is reduced by disease, shade, insect injury, poor management, or unfavorable environmental conditions.

### Mowing traits

All ryegrasses may be difficult to mow neatly at certain seasons.

Rutgers trials				
Performance of perennial varieties seeded September 1979 in turf trials at Adelphia, New Jersey.				
Entry	Turf performance score			9 = best
	1979 1980 avg.	1981 avg.	1982 avg.	1979-1982 avg.
1. Palmer	7.3	7.2	7.4	7.3
2. Prelude	7.1	7.2	7.2	7.2
3. Gator	6.8	7.3	7.1	7.1
4. Yorktown II	6.4	6.5	7.1	6.7
5. Belle	6.4	6.4	6.8	6.5
6. Blazer	6.6	6.8	6.8	6.7
7. Fiesta	6.5	6.3	6.6	6.5
8. Premier	6.8	7.0	6.6	6.8
9. Dasher	5.9	6.0	6.5	6.1
10. Diplomat	5.9	6.3	6.5	6.2
11. Barry	5.9	6.2	6.5	6.2
12. Regal	5.8	6.3	6.3	6.1
13. Delray	5.3	6.6	6.2	6.0
14. Pennant	6.2	6.2	6.2	6.2
15. Elka	6.3	6.7	6.2	6.4
16. Derby	5.5	5.3	6.1	5.6
17. Omega	5.8	5.7	6.1	5.9
18. Yorktown	5.4	5.8	6.1	5.8
19. Goalie	5.5	5.5	6.0	5.7
20. Citation	5.6	5.5	5.8	5.6
21. Loretta	5.9	6.2	5.5	5.9
22. Pennfine	5.6	5.2	5.5	5.4
23. Lp20	4.8	5.3	5.4	5.2
24. Jackpot	5.3	5.5	5.4	5.4
25. Manhattan	5.1	5.8	5.3	5.4
26. Caravelle	5.0	6.1	5.0	5.4
27. Rex	4.6	4.4	4.9	4.6
28. Servo	3.6	3.3	3.6	3.5
29. Cropper	2.4	2.2	2.7	2.4
30. Linn	2.3	1.9	1.9	2.0
LSD = .05	0.5	0.6	0.6	

Turf mowed at 3/4-inch from March 1980 through May 1981, and at two inches since May 1981. Test was irrigated during 1980, but not irrigated during 1981 and 1982.

The improved turf-types generally mow well during the cool, moist seasons of early spring and fall, but with greater difficulty during their reproductive period in late spring and during periods of heat and drought.

Frequent cutting with a sharp, well-adjusted mower is very important in the maintenance of an attractive ryegrass turf. Infrequent mowing reduces turf quality and lowers turf density.

Improvement in mowing quality is a prime objective of turfgrass breeders.

The improved turf-type varieties all show very substantial improvements in mowing quality when compared with common perennial ryegrass and varieties such as Linn, Game and Cropper. When conditions are favorable, the better turf-type ryegrasses can be mowed cleanly with little difficulty.

Elka, Loretta and Gator normally show the best mowability during cool weather. The more heat tolerant varieties such as Palmer, Prelude, Premier, Manhattan II, Citation and Gator show less loss of mowing quality during hot weather and rank highest during the summer months.

Early maturing varieties including Regal, Citation, Derby, Pennfine and Pennant produce an

abundance of stemmy reproductive tillers during late spring and often become difficult to mow at this season. The later maturing varieties such as Palmer, Elka, Loretta, Gator, Manhattan II, Yorktown II, and Blazer, are less likely to have an excessively stemmy turf during their reproductive stage.

### Summer performance

Many turf-type ryegrasses—including Palmer, Prelude, Yorktown II, Gator, Premier, All\*Star, Pennant, Citation, Manhattan II, Pennfine, Omega, Fiesta, Dasher, Blazer, Delray, Derby and Regal—show substantial improvements in heat tolerance and summer performance.

Increased resistance to the *Rhizoctonia* brown patch disease is an extremely important factor in improved summer performance in warm, humid climates. The newer turf-type varieties developed from germplasm collected from old turfs of the mid-Atlantic region of the United States have shown significantly improved resistance to this disease.

### Winter performance

Most of the improved turf-type ryegrasses are substantially more winter-hardy than common

perennial ryegrass.

Yorktown II, Manhattan and Omega showed the best winter-hardiness in Vermont tests. Delray has done well in the upper Midwest.

Nevertheless, additional improvements in winter-hardiness are needed for the more severe climates. Winter kill is often observed in wet, depressed areas where ice sheets are present for prolonged periods.

Improved resistance to winter diseases, including snow molds and a winter leaf spot, is also an objective of ryegrass breeders. Palmer, Prelude, Yorktown II, Manhattan II, Blazer, Omega, Gator and Premier show improved resistance to the winter leaf spot disease.

### Endophytes

Recent studies in New Zealand have demonstrated a positive association between resistance to the Argentine stem weevil and the presence of endophytic fungus present within the tissues of some perennial ryegrass plants. Scientists at the New Jersey Agricultural Experiment Station have demonstrated that resistance to the sod webworms attacking New Jersey turf trials was positively associated with the presence of this *Lolium* endophyte.

Of 17 ryegrasses studied, the nine entries containing the endophyte showed high resistance to sod webworms, whereas the eight ryegrasses not containing the endophyte were severely damaged.

Resistance of ryegrasses to billbugs also appeared to be associated with the presence of the *Lolium* endophyte. This discovery of endophyte-enhanced resistance to a number of important insect pests should encourage the development and maintenance of varieties possessing this novel and broad-based system of pest resistance.

The insect resistance observed in the varieties GT-11, Pennant and All\*Star appears to be associated with their high levels of the *Lolium* endophyte.



Dr. C. Reed Funk is professor in plant genetics at Rutgers University and one of the leaders in turfseed research. Dr. Rich Hurley is vice-president and director of research at Lofts Seed Co.



Enhanced insect resistance will require important modifications in present methods of breeding for pest resistance and in seed production and seed storage practices. This is due to the observations that the endophyte is transmitted primarily by seed and vegetative propagation. Also, in the absence of cold storage, the *Lolium* endophyte will gradually lose its viability and effectiveness as seed is stored for prolonged periods.

### Rust resistance

Crown rust frequently causes discoloration of turf during late summer and early fall. This is most likely to occur if growth is slowed by low fertility or moisture stress.


Palmer, Prelude, Elka, Gator, Loretta, Premier, Fiesta, Delray and Pennant showed the best resistance in recent New Jersey trials.

Dr. William A. Meyer has recently made a very significant breakthrough by developing varieties with good resistance to the stem rust disease. Manhattan II, Cowboy and a number of new experimental varieties show good resistance to this disease.

### Future outlook

The past 15 years have witnessed the origin and early development of the new turf-type perennial ryegrasses. The first certified seed field of Manhattan was harvested in 1968. All other improved turf-type ryegrasses mentioned were released after 1970.

Considerable effort is now being devoted to the further genetic improvement of ryegrasses in both North America and Europe. A number of exciting new germplasm sources are being discovered in old turfs and in hybridization and recurrent selection programs.

The next 15 years—considering vast improvements in research facilities and techniques—could bring as many new advances in ryegrass improvement as the past 15 years has. 

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125 Lebanon Chemical	28
133 Ruffin	38B
141 Moyer & Son Inc. (Regional)	25
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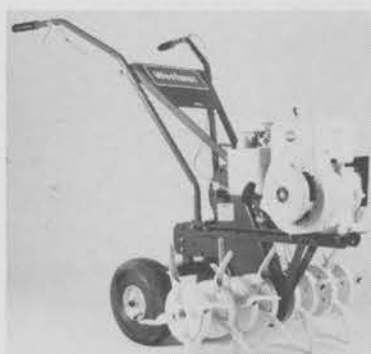
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Toro works hard to give you the kind of riding rotary mower you want most.

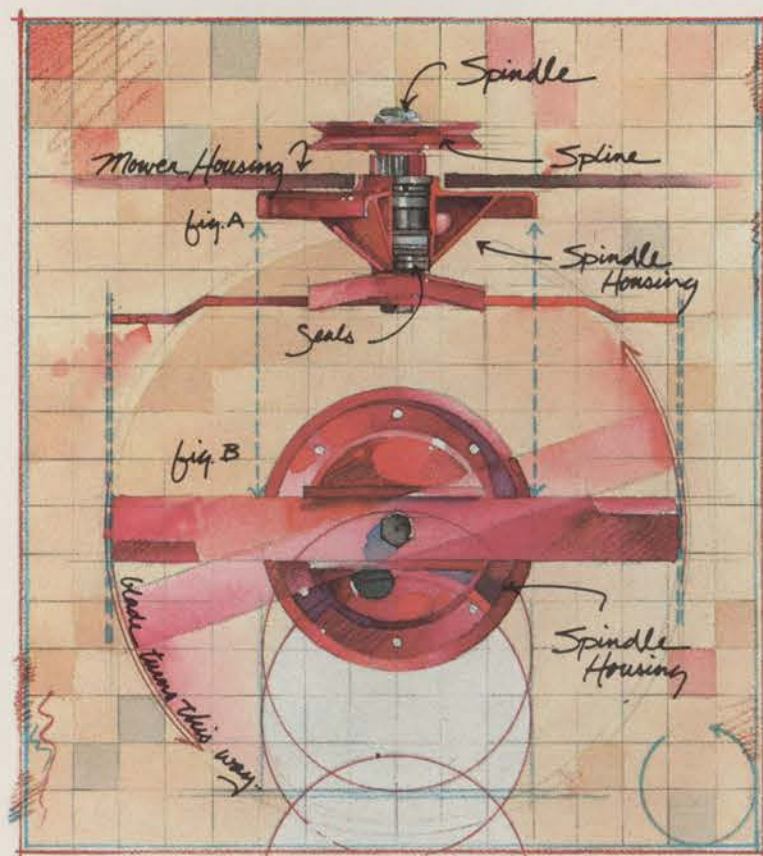
A mower that keeps you cutting. Gets the job done.

In fact, we get down to the tiniest details to produce a totally durable mower.

For example, we designed an unspindly spindle to turn the blades of our Groundsmaster 72® and Groundsmaster 52® mowers.

First, we made its housing a rugged cone shape, not cylindrical like other makes. To tolerate greater stress and bombardment by rocks and other debris.

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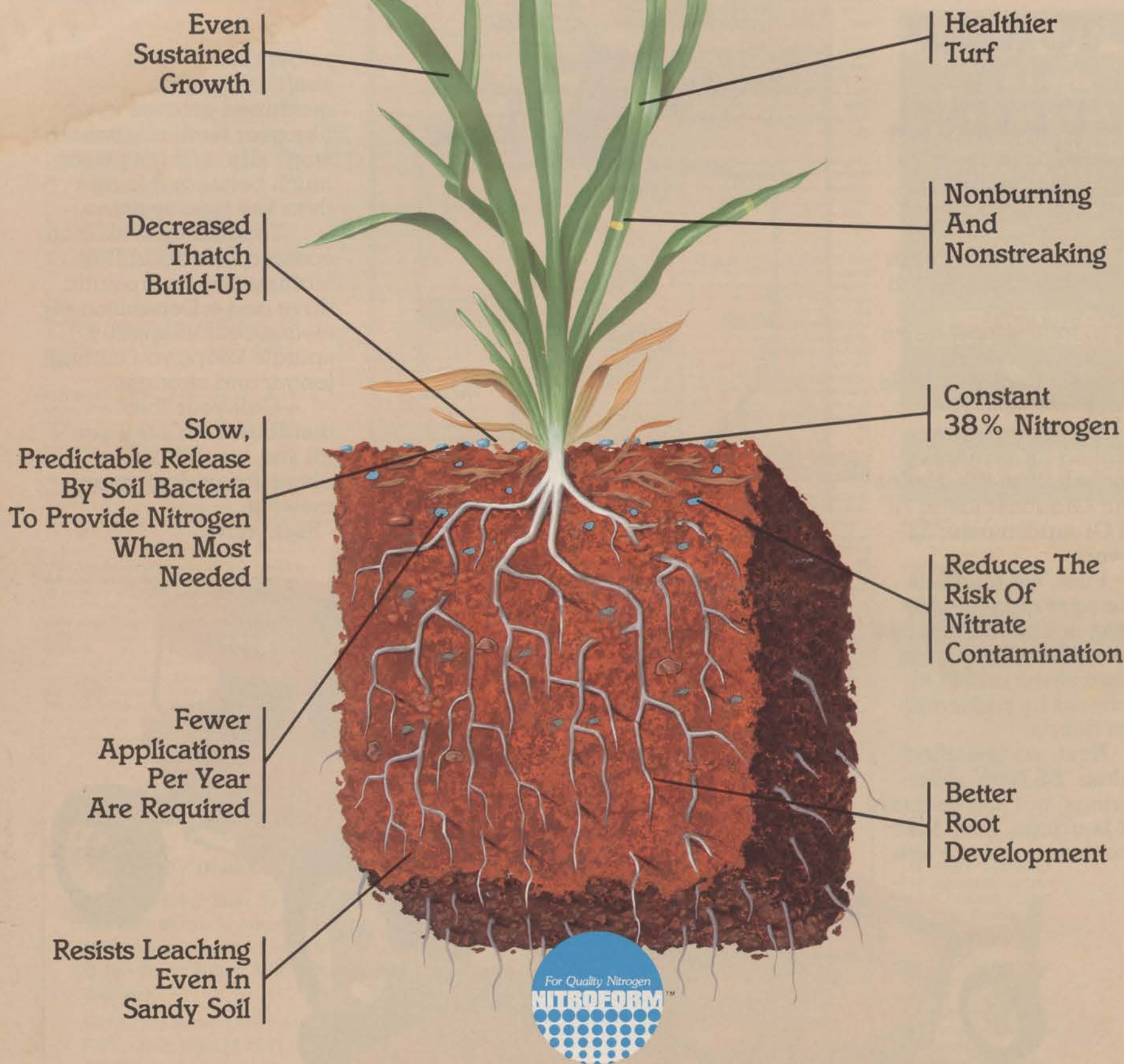
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