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TABLE OF CONTENTS

BUSINESS FEATURES

Rating Spray Equipment

Everyone expects a spray rig to be durable and versatile, but most buyers look for special features when making their selection.....26

Industrial Weed Control

This auxiliary service is potentially quite profitable, but be forewarned that there is considerable risk of pesticide exposure.....42

Aerating Home Lawns

Many lawn care professionals have embraced aerating as an add-on service, but many others remain unconvinced of its worth.....45

TECHNICAL FEATURES

Confusing Patch Diseases of Turf

Disease symptoms are difficult to differentiate and the newly discovered disease complexes make the identification chore that much more difficult.....32

Quality Seed Makes Quality Turf

The production of quality turfseed involves much work in research, planting, and harvesting, but the final product is a quality lawn.....34

New Tall Fescues: Potential for Profit

Kentucky 31 tall fescue has been the industry standard for many years, but it has recently been dethroned by the new "fine-bladed" tall fescues.....38

DEPARTMENTS

Advertiser's Index.....	60	People.....	24
Calendar.....	6	PLCAA Update.....	24
Classifieds.....	60	Products.....	50
Inside Story.....	10	Questions and Answers.....	49
News in Brief.....	13	Views Across The Industry.....	6



COVER

How would you rate your spray rig? The operators we spoke with had some definite ideas about what they want in a spray rig.
(Cover photo by Barney Taxel)

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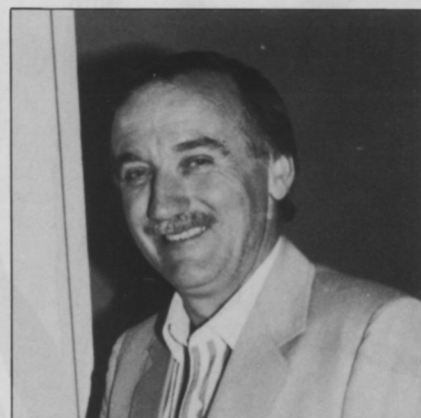
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"Yes, on a limited basis. We have an aerator but we haven't really pushed it. The customers around here are not very aware of the benefits of lawn aeration, although I think there's a definite need for it. There is an education process that needs to be done. The public can become more aware of the benefits of lawn aeration through people in the business, and by other means like newspaper and magazine gardening articles." — **Paul Begick, Begick Nursery, Bay City, Michigan**



"Yes, we do because core aeration is in high demand now. Most of this is due to our own people; when they go to visit a client they recommend it. We've also got pamphlets to educate our customers so that they have the information, and know exactly what we're doing. And there's a lot of people that are playing golf, so they know about core aeration. It's being recommended and they've seen it for themselves. They've made the connection." — **Guy Van Den Abeele, Nature Plus, Inc., Montreal, Canada**

CALENDAR

July 17-20

CLCA 1986 Family Summer Tri-Board Meeting, El Rancho Tropicana, Santa Rosa, California. Contact: Larry Rohlfs, California Landscape Contractors' Association, Inc., 2226 K Street, Sacramento, California 95816; 916/448-CLCA

July 28-30

Expo '86, Kentucky Fair and Exposition Center, Louisville, Kentucky. Contact: Cheryl A. Van Vliet, The Outdoor Power Equipment Institute, Inc., 1901 L Street NW, Suite 700, Washington, D.C. 20036; 202/296-3483.

July 29-31

National Fertilizer Solutions Association Mid-Year Dealer Conference "Round-Up," Hyatt Regency O'Hare, Chicago, Illinois. Contact: Bob Wanzel, National Fertilizer Solutions Association, 10777 Sunset Office Drive, Suite 10, St. Louis, Missouri 63127; 314/821-0340.

Aug. 6

Illinois Landscape Contractors Association 27th Annual Summer Field Day, Schroeder's Nursery, Inc., Grayslake, Illinois. Contact: Lucile Little, ILCA, 2200 South Main Street, Suite 301, Lombard, Illinois 60148; 312/932-8443.

Aug. 6

Maryland Turfgrass Field Day and Equipment Exhibition, UM Turf Research and Education Center, Silver Spring, Maryland. Contact: P.H. Dernoeden, Department of Agronomy, University of Maryland, College Park, Maryland 20742; 301/454-3717.

Aug. 7

Second Annual Meeting of the Indiana Coalition for Environmental Concern (ICEC, Inc.), Holiday Inn North, Indianapolis, Indiana. Contact: R.P. Freeborg, Executive Director, ICEC, 871 Shawnee Avenue, Lafayette, Indiana 47905; 317/494-4784.

Aug. 12

Turf and Ornamentals Field Day, Georgia Station, Griffin, Georgia. Contact: Dr. Gilbert Landry, Jr., Extension Agronomist-Turf, Extension Agronomy Department, University of Georgia, Athens, Georgia 30605; 404/542-5350.

Aug. 20

Turf Research Benefit Golf Tournament, Golf Club of Oklahoma, Broken Arrow, Oklahoma.

Contact: Michael P. Kenna, Extension Turf Specialist, Cooperative Extension Service, Oklahoma State University, 335 Agricultural Hall, Stillwater, Oklahoma 74078; 405/624-5404.

Sept. 20

Oklahoma Turf Research Field Day, Lincoln Plaza, Oklahoma City, Oklahoma. Contact: Michael P. Kenna, Extension Turf Specialist, Cooperative Extension Service, Oklahoma State University, 335 Agricultural Hall, Stillwater, Oklahoma 74078; 405/624-5404.

Nov. 2-6

Sixteenth Educational Conference of the National Institute on Park and Grounds Management, Louisville, Kentucky. Contact: National Institute, Box 1936, Appleton, Wisconsin 54913; 414/733-2301.

Dec. 8-11

Ohio Turfgrass Conference and Show, Ohio Center, Columbus, Ohio. Contact: Dr. John Street, Ohio State University, Agronomy Extension, 2021 Coffey Road, Columbus, Ohio 43210-1086; 614/422-2047. ■

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INSIDE STORY

This month our cover story deals with how some lawn care businessmen judge spray rigs. In "Rating Spray Equipment," we consulted several lawn care operators to find out what they look for in a good spray rig. As you might expect, we got all the standard responses: sound construction, durability, ease of operation, attractive appearance, etc. But we also got some unexpected input. One person made the switch from an auxiliary engine-driven pump to a PTO-driven pump and appreciated the peace and quiet provided by the PTO unit. Everyone we spoke with sounded as though they had pretty much settled into the type of spray rig they intended use for some time to come.

A second article on the roster this month concerns a service known as industrial weed control or vegetation management. As we discovered from the professionals who offer this service, there is money to be made in industrial weed control, but there is a price to pay and risks to take. Industrial weed control materials are considerably more expensive than typical lawn care chemicals, two



to three times more expensive. That means the fee for this service must reflect the increased material overhead. The fee must also be high enough to make the service worth the risk of exposure to non-target vegetation. Despite these drawbacks, some businessmen have

found industrial weed control so profitable that their businesses are built around the service.

Assistant Editor Vivian Rose brings us this month's third business feature. Home lawn aeration is something that many lawn care operators now perform, but there is a great deal of variation in their reliance on the service. Some operators have made aerating a major portion of their operation, while others just dabble at it.

This month our "News" department contains a considerable amount of information on the alarming increase in regulatory activity nationwide. Particularly disturbing is the national media's new-found interest in this controversy. As we continue to monitor this situation, it becomes increasingly obvious that lawn care businessmen must band together and shift from a defensive mode to an offensive mode in their battle against anti-pesticide factions.

Tim Weidner

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NEWS IN BRIEF

LANDSCAPE MAINTENANCE IN THE BIG APPLE

Angelo DelPriore has helped maintain Brooklyn landscapes since 1961. He started out as a landscape maintenance operator, but then expanded into the garden center business with the opening of G & D Nursery about 15 years ago. He currently does a booming wholesale business in landscape maintenance equipment sales to local maintenance operators. His business is still primarily landscape maintenance and he keeps three crews on the road during the growing season.

You might not think of Brooklyn as a landscaper's paradise, but DelPriore says landscape maintenance has become a booming business because Brooklyn homeowners are becoming more landscape conscious. "It is growing," says DelPriore. "25 years ago there wasn't much going on. I was working in construction. They are building better homes than they had then."

DelPriore's Brooklyn colleague, Robert Carbone of Robert Carbone Landscape, agrees with DelPriore's assessment. "People don't realize how much green industry is in the cities," says Carbone. "Gardeners are becoming more sophisticated too and can do a nicer neater job."

The competition is also becoming stiffer. DelPriore estimates that over 100 landscape maintenance operators are plying their trade in Brooklyn alone. "There are quite a few part-time people, like firemen and cops," says DelPriore. "We can't compete with them. They pay no sales tax, no insurance, and no overhead. They even dump free."

Carbone's father started a landscape maintenance business 60 years ago and Carbone himself has been in the business for 35 years. Both Carbone and DelPriore complain that quality personnel is their biggest problem. "Help is difficult for me to find," says Carbone. "I like to do things myself. There are always calls I am turning away."

"I could have 10 trucks on the road, but I can't get the right help," says DelPriore. "We have a problem getting good help because we can't pay them the right wage. If they get \$10 to \$12 an hour we can't compete with that."

DelPriore says today's employees tend to become tomorrow's competition. "They work with me two or three years and now they are my competitors," says



Robert Carbone (left) and Angelo DelPriore at G & D Nursery.

DelPriore. "I wish them well. There is plenty of work. You don't need too much money to go into business today. A guy buys a station wagon or a van, a mower, borrows \$2,000, and he is in business."

LAWN MAINTENANCE INSURANCE BLUES

Greg Coulter's Grounds Management Service in Houston, Texas recorded 1985 gross revenues of nearly \$20 million and employs about 150 personnel, but he describes his insurance situation as "horrendous." His insurance premium costs have skyrocketed.

"The premium has gone from \$1,300 a year to \$25,000 a year," says Coulter. "The automobile insurance has gone up about 50 percent. Workman's comp and

general liability has gone up about the same amount. Medical insurance and benefit programs have gone up 30 percent." He also notes that the turnaround for getting paid on claims has become very slow. "They are refusing a lot of things that three or four years ago they paid without hesitation," says Coulter.

Coulter says he was dropped by one insurance company and picked up by another because of the leverage his insurance agent had with the second company. He says his insurance company told him his premium was raised because his company uses lawn chemicals. However, Coulter says lawn chemical applications are actually a very small segment of his operation.

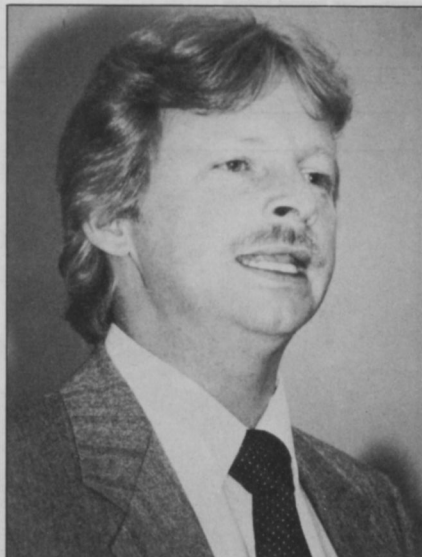
Coulter's peer, John Medors, President of Medors Grounds Maintenance, Danville, Virginia, has also experienced insurance problems. "We don't have the

coverage that we had in certain areas," says Medors. "We are not covered as broadly as we were last year at this time." He is glad his business is not involved with lawn spray applications. "We had thought seriously about going into that end of the business two winters ago, but I am glad now that we didn't."

CBS NEWS BURNS LAWN CARE INDUSTRY

The lawn care industry was the subject of one of the most scathing media reports to date in a segment on the CBS 'Evening News' with Dan Rather. The May 22 broadcast lasted only a few minutes, but in those few minutes, lawn care pesticides were linked to the death of birds and one human on golf courses. CBS correspondent Bob Faw described lawn care as a war against weeds and bugs that sometimes claims other victims.

A homeowner named Sherri Rosenfeld was interviewed and she claimed that because of a treatment made to her lawn, her lungs now constantly ache, she tires easily, and she is often irritable. "I was poisoned by a lawn chemical and it zap-



David Dietz

ped my whole system and nothing has been the same since," said Rosenfeld in the interview. A gardener named Bruce Haney was also interviewed and correspondent Faw characterized Haney as a destitute individual living alone in a cheap motel, suffering from chronic pain, unable to work, digest food, or even

sleep, all due to his 13-year exposure to lawn chemicals as a gardener. "I used too many chemicals for too long and it just caught up to me," said Haney.

Faw then suggested that Haney and Rosenfeld do not represent isolated cases of lawn pesticide injury, that "possibly thousands" of people could be experiencing similar disorders. But more gripping than reports of human discomfort was the case of Navy Pilot George Prior. CBS alleged that Prior, age 30, died 16 days after he had played on a golf course which had been treated with daconil.

"His skin came off in sheets until he lost about 80 percent of his skin," said Liza Prior, the pilot's widow. "After that, then one by one his organs began to fail, his kidneys, his liver." Faw reported that an autopsy conducted by Navy pathologists concluded that daconil had permeated Prior's clothing and killed him.

Two lawn care industry personalities who were featured briefly in the telecast were not too pleased with the treatment they were given by CBS. Donald Burton, President of Lawn Medic, Inc., Bergen, New York, says he was somewhat distressed, but not surprised. "They need

(continued on page 16)

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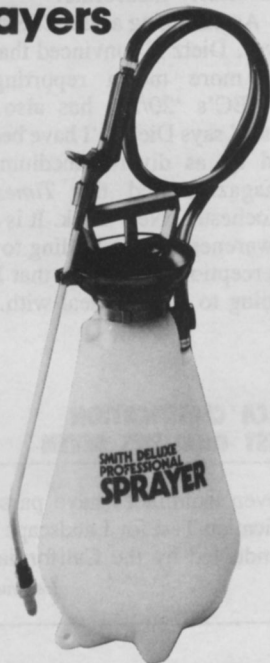
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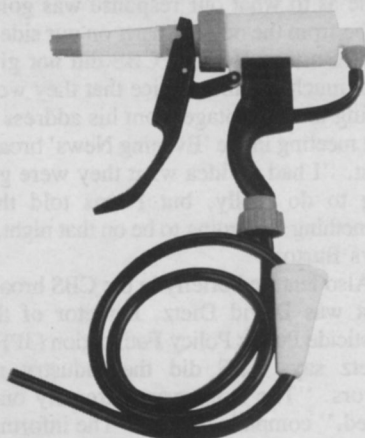
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NEWS

(continued from page 14)

something with a little controversy," says Burton. He felt the graphic portrayal of the Navy pilot's death was in bad taste. "We don't think they searched that out in enough depth."

Burton complains that the general tone of the broadcast was alarmist and that the lawn care industry was given very little equal time to voice its side of the story. "It is too bad that we couldn't have had at least another 20 to 30 seconds. They took only one sentence out of a three-minute prepared statement I had at the hearing."

The hearing Burton refers to occurred on May 1 in Buffalo, New York, sponsored by the pesticide activist group, the Erie County Energy and Environment Committee. Burton and four other lawn care industry spokesmen addressed the hearing in an attempt to quell a growing fear of lawn chemicals in the Buffalo area. Representing the industry at the podium were: Dr. Roger Funk, Vice President, Technical and Human Resources, Davey Tree Expert Company, Kent, Ohio; Dr. Wendell Moleson, consultant for Dow Chemical Company; Dr. Roger Yeary,

Director of Employee Health, ChemLawn Corporation; and Richard Stedman, President of Wright Lawn and Tree Care, Clarence Center, New York.

"The statement I made introduced our position in the aggregate and also set the tone as to what our response was going to be from the other experts on our side," says Burton. He says CBS did not give him much advance notice that they were going to use footage from his address to the meeting in the 'Evening News' broadcast. "I had no idea what they were going to do really, but I was told that something was going to be on that night," says Burton.

Also featured briefly in the CBS broadcast was David Dietz, Director of the Pesticide Public Policy Foundation (3PF). Dietz says CBS did the industry no favors. "The story was extremely one-sided," complains Dietz. "The information contained within that story was less than accurate. When you have a three minute segment and the professional's side gets 20 seconds total for its point of view, you have a built-in bias." Dietz has information which leads him to believe that CBS erred in its reporting on the results of the Navy pilot's autopsy.

"There is no evidence, from what I'm

told from a fellow who has looked at the autopsy report, that daconil was the cause of death in that particular incident," says Dietz. "Prior worked in top secret Navy efforts and his cause of death is in litigation at the moment. For CBS to say that the guy walked on a golf course and died seven days later from exposure to a product that was used on that golf course is absolutely inaccurate."

As damaging as the CBS news segment was, Dietz is convinced that it is typical of more media reporting to come. "ABC's '20/20' has also interviewed me," says Dietz. "I have been interviewed by as diverse mediums as *People* magazine and the *Times Union* in Rochester, New York. It is a heightened awareness that is leading to some public perception difficulties that I feel we are going to have to deal with."

CLCA CERTIFICATION TEST QUALIFIES SEVEN

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(continued on page 18)

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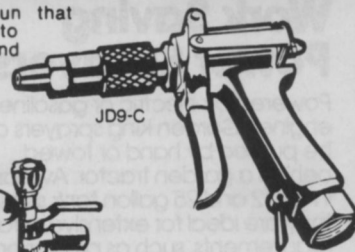
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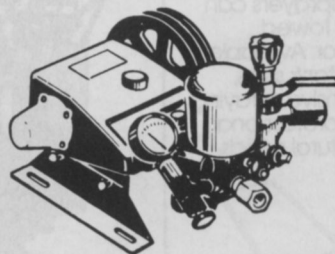
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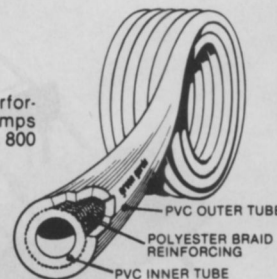


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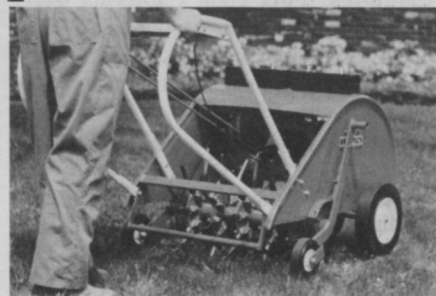
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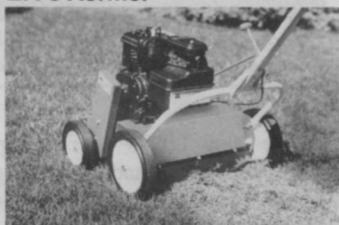
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EA-3 Aerifier



JR-4 Aerifier



VCD-14 Verti-Cut



TM-60 Aerifier



TB-60 Aerifier



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NEWS

(continued from page 16)

Contractors Association (CLCA) on April 5-6 at Orange Coast College, Costa Mesa, California. Fifty eight California landscape technicians have now achieved a passing score on the landscape proficiency test since it was first administered in 1984.

CLCA sponsors the test to identify landscape workers who can meet every competency standard in the industry, according to Kenneth Gerlack, Chairman of CLCA's Certification Committee. The April exam took two days to complete and consisted of 15 hours of timed, hands-on work on 30 problems in eight major skill areas. The eight skill areas include plan reading, irrigation installation, plant installation, concrete installation, grading, drainage, brick on sand construction, sand box construction, and seed and sod installation.

Test takers had to earn a passing score on each of the 30 problems in order to earn CLT status. Several CLT candidates failed one or more problems and must retake them in order to become certified. The entire test, however, need not be retaken.



CLT candidate rakes soil mix to level irregularities during the seed and sod portion of CLCA's Certification Test for Landscape Technicians.

The new CLTs are: Doug Heims, Comprehensive Landscape Design, Costa Mesa; Victor B. Matloff, Flowerdale Nursery, Santa Ana; Ronald William Nichols, Creative Environments, Somis; Francisco Perez, Boulder Creek Land-

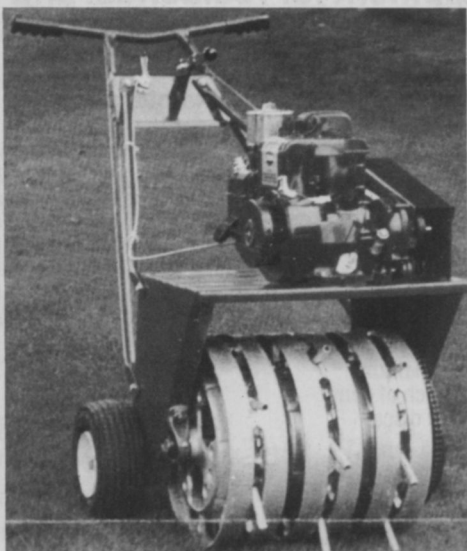
scape, Fresno; Mark Speer, South Coast Landscaping, Los Alamitos; John C. Swanson, Blue Sky Landscaping, Panorama City; and John E. Valusek, Sheridan Landscaping, Sun Valley.

(continued on page 20)

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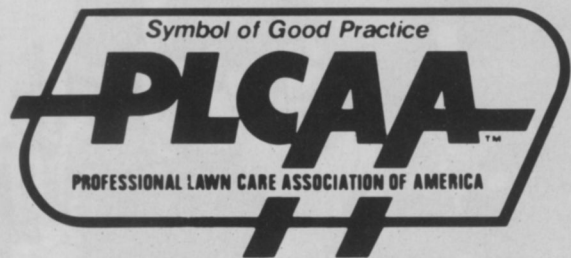
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How else can you stay in touch with news you need to know? PLCAA members receive Turf Talks, our bimonthly newsletter, full of member news and management tips. PLCAA's Legal Update bulletin, written by General Legal Counsel Richard I. Lehr, is targeted to the green industry. And PLCAA's Environmental Update bulletin keeps members in touch with legislative issues — issues that could threaten your business.

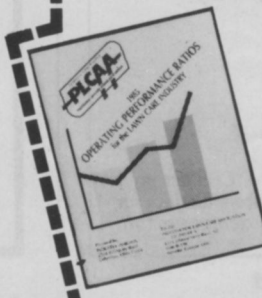
What else do you get for your low PLCAA dues? Access and price breaks on local seminars, audio/visual training programs, sales aids, networking, and much more.

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P.S.—Don't forget to mark your calendar—**PLCAA/Baltimore '86**, our big 7th Annual Conference and Show, takes place Nov. 17-20, at the Baltimore Convention Center.

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NEWS

(continued from page 18)

CUSHMAN APPOINTS PORTLAND DEALER

Farwest Turf Equipment, Portland, Oregon, has been appointed a dealer for Cushman vehicles and equipment, manufactured by OMC Lincoln. Farwest Turf will handle the Cushman® line of

industrial and commercial gas and electric vehicles, Cushman turf vehicles and attachments, and the Cushman Front Line® mower. The company will represent the Cushman line throughout Oregon and five counties in southern Washington. Ken O'Neil is President of Farwest Turf Equipment. David Jacobsen is Vice President and Sales Manager. Other partners in the firm are Jerry Cundari and Peter Jacobsen.



Employees of Farwest Turf Equipment, Portland, Oregon.

WESTERN NEW YORK UNDER REGULATORY ATTACK

As we reported in the last issue, a volatile situation exists in western New York state which has put the lawn care industry on the defensive. A handful of very vocal citizens have created a regulatory sensation which has attracted the attention of local media. Media coverage has in turn caught the attention of the Erie County legislature and area citizens in general. At the core of the controversy is the western New York activist group HELP (Help Eliminate Lawn Pesticides).

Articles describing the perceived dangers associated with lawn chemicals have appeared in the *Buffalo News* in recent months. The New York Department of Environmental Conservation has contributed to the public's general alarm by considering a ban on diazinon following alleged waterfowl kills from diazinon on New York golf courses and sod farms. To combat this regulatory situation, 16 lawn care companies have formed the Western New York Lawn Care Association (WNYLCA) and have begun to search for a common ground acceptable to the Erie County legislature. However, for the lawn care operators, considerable ground



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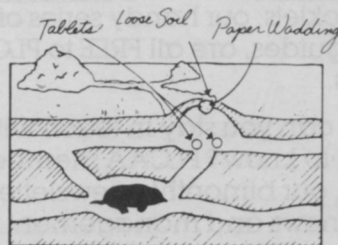
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has already been lost.

Jim Foot, Branch Manager of Davey Lawnscape Service, Buffalo, New York, says he has lost 700 to 800 accounts because of the issue. "The industry in western New York has lost about 10 percent (of its total customer base), that is a very fair statement," says Foot. However, media coverage has eased away from the issue a bit and customer loss rates have also improved since the whole fiasco started after a public hearing in Amherst, New York on April 16. But Foot fears that anticipated coverage in *People* magazine and ABC's "20/20" television news magazine may stir things up again.

Foot says lawn care operators in areas that have thus far been spared the effects of the pesticide controversy should not be complacent. "There was absolutely no word that anything was going to heat up," says Foot. "A lot of states and municipalities are looking at western New York to set some kind of precedent." The county legislature and its anti-pesticide constituents, in such groups as HELP, have more or less told the WNYLCA that they had better agree to some kind of compromise to the controversy by 1987, according to Foot. "We have a dialogue with these groups that are hacking us up, so we are going to see a working relationship with them to develop something," says Foot. "Ultimately, they want us to quit using pesticides."

To clarify their position and let lawn care operators know what direction they intend to take, Erie County legislators Leonard R. Lenihan, William A. Pauly, Mary Lou Rath, and Charles M. Swanick have drafted a resolution. The resolution is titled "Recommendations Pertaining to the Regulation and Application of Pesticides." Within the text of the resolution, the authors recognize that prior New York state court decisions have given the state authority to preempt local ordinances. Therefore, they are careful to note that their resolution is a list of recommendations to state government officials and not a draft of a proposed ordinance.

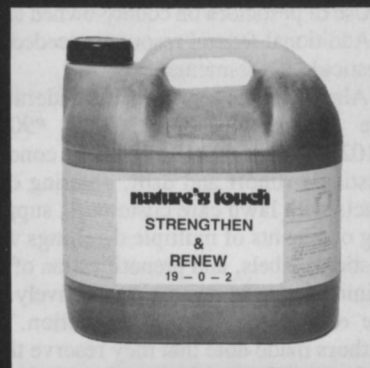
The recommendations are listed by topic and each topic is followed by background information and suggestions for implementation from the county legislators. The topics for consideration are as follows:

- On-site supervision of non-certified lawn spray applicators.
- Strengthen training for persons becoming certified applicators.
- Improved enforcement of DEC (Department of Environmental Conservation) regulations.
- Establishment of a toll-free state hotline.
- More resources for state pesticide

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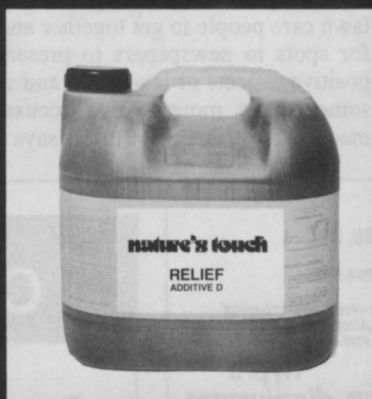
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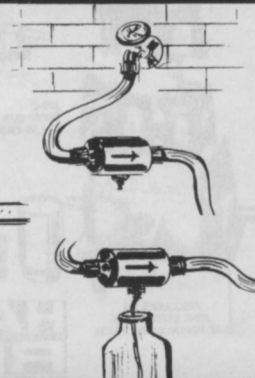
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testing.

- Other funding sources for testing the effects of pesticides.
- Banning the use of diazinon.
- Institution of complaint handling procedures.
- Use of pesticides on county-owned land.
- Additional federal resources needed for pesticide assessments.

Also listed as topics for consideration are Assembly Bills #10272, #9046, #10271, and #11183, which concern pesticide runoff and drift, entering contracts with lawn care customers, supplying occupants of multiple dwellings with pesticide labels, and prenotification of adjoining property owners, respectively. At the end of the 15-page resolution, the authors made note that they reserve their right to "take supplemental action in the future, pending the outcome of the state's activities, certain legal decisions, and other related matters."

One of the lawn care businessmen actively involved in the WNYLCA's battle with the Erie County legislators and groups like HELP is Donald Burton, President of Lawn Medic, Inc., Bergen, New York. Burton says the main thrust of what the group is trying to do in western New York is damage control.



Donald Burton

"We are trying to answer the charges coming in and get a feeling about whether people would support a counter-offensive," says Burton. "The time has come, in some of these very hot areas, for lawn care people to get together and pay for spots in newspapers to present the positive aspects of lawn care and refute some of the more blatant accusations made against them." Burton says lawn

care operators should substitute the phrase "turf protective practices" for the phrase "lawn care chemicals" or "lawn care pesticides" in conversation.

He says manufacturers of lawn care products have been helpful with information and have been attending the public hearings, but are not actually a part of WNYLCA. Burton believes the situation in western New York is a single issue that lawn care applicators will have to deal with for themselves.

LAROCHE PURCHASES USS AGRI-CHEMICALS TURF LINE

LaRoche Industries, Inc. has announced the purchase of the Turf and Garden business line from USS Agri-Chemicals, effective May 1, 1986. LaRoche will continue the Professional Use, Vertagreen, and Soilife line of fertilizers and home chemicals and will continue to be a major supplier to the mass merchandisers of private label fertilizer and home chemical products.

LaRoche Industries, Inc. was formed by William W. LaRoche who has 37 years of industry service rising to group

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Vice President — Chemicals for U.S. Steel. USS Agri-Chemicals was a division within the Chemical group. C.M. Henderson, former President of USS Agri-Chemicals, will be President and Chief Operations Officer and F.J. Prinzo, former Comptroller of USS Agri-Chemicals will be a LaRoche Vice President and Chief Financial Officer.

J.P. LaGessee, well known to trade people, will continue to head the Turf and Garden business line for LaRoche Industries. The company purchased several additional business lines of USS Agri-Chemicals, which serves various markets on a nationwide basis. The purchase included 10 major manufacturing plants and 120 distribution centers nationwide.

PGMS COMPILES SALARY SURVEY

The Professional Grounds Management Society (PGMS) has compiled its 1986 salary survey of grounds managers. The survey has been tabulated by region and analyzes the salaries and benefits of grounds managers and technicians. In the Northeast region, grounds managers reported a high annual salary of \$40,000, a low annual salary of \$15,600, for an average annual salary of \$26,275. In the Southeast region, the salary high was \$65,000, the low was \$10,000, and the average was \$25,694.

The Mid-Atlantic region reported a salary high of \$45,000, a low of \$14,400, and an average of \$25,461. The Midwest region registered a high of \$41,000, a low of \$9,000, and an average of \$26,613. The Southwest region checked in with a high salary of \$52,000, a low salary of \$16,900, and an average salary of



\$27,254. Finally, the Far West region reported a high salary of \$55,000, a low salary of \$18,500, and an average salary of \$29,735.

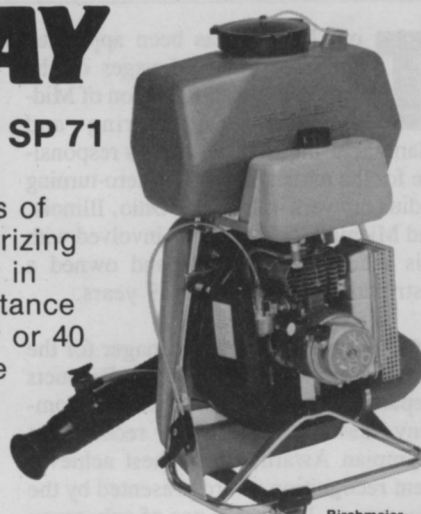
Based on dollars paid per 40-hour work week, foremen in the Northeast region averaged \$8.98 per hour. In the Southeast region they averaged \$6.15, the Mid-Atlantic region \$8.15, the Midwest \$9.32, the Southwest \$7.96, and the Far West \$8.28. Permanent laborers in those regions averaged \$7.43, \$4.82, \$6.54, \$8.32, \$5.87, and \$6.57, respectively.

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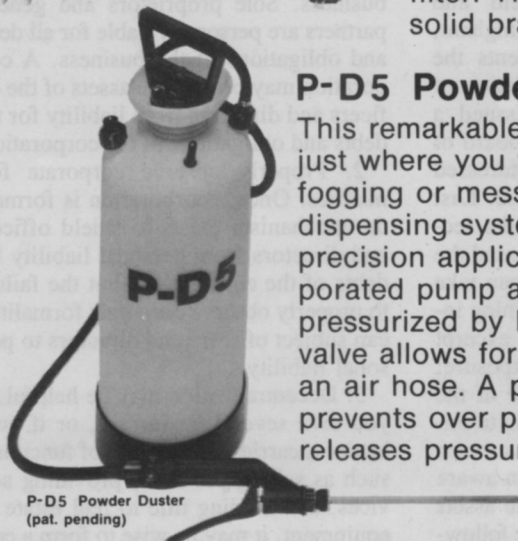
Here's the sprayer renowned world-wide for long service life. This sprayer is well balanced for operator comfort. The pump mechanism is located outside the tank and therefore not in contact with corrosive liquids for any length of time. The tank is hard polyethylene with a large opening with filter. The trigger control is solid brass.



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PEOPLE

Tom Phillips has been appointed Regional Sales Manager of the Turf Equipment Division of Mid-dlesworth Engineering and Manufacturing, Inc. Phillips is responsible for the marketing of their zero-turning radius mowers in Indiana, Ohio, Illinois, and Michigan. He has been involved with this industry all his life and owned a distributing company for 19 years.

Art Leasure, an account manager for the North American Agricultural Products Department of The Dow Chemical Company, has been chosen to receive the Olympian Award, the highest achievement recognition award presented by the department. Leasure is one of only seven Dow sales representatives and two Technical Service and Development specialists to receive this award, which is based on safety, sales growth, goal achievement, overall performance, and other outstanding contributions throughout 1985.

Leasure was presented the award in



Tom Phillips



Tony Amato

special ceremonies at Dow's world headquarters in Midland, Michigan, on April 17 for his outstanding performance and dedicated effort in marketing Dow agricultural products in Florida. The Olympian Award carries with it an all-expense paid holiday for two to the destination of the winner's choice and includes round-trip transportation, deluxe hotel accommodations, and a cash allowance for meals, sightseeing, and entertainment. Leasure is a resident of Dunedin, Florida and holds a masters

degree in horticulture from the University of Illinois.

Tony Amato, Professor Emeritus at Cal Poly San Luis Obispo, has been appointed special consultant to the California Landscape Contractors Association. Amato will assist in the development and production of CLCA-sponsored educational seminars. In making the announcement, CLCA Executive Director Michael E. Leeson stated that Amato is "ideally qualified to help the association bring programs of quality education to members and all professionals in the industry."

Amato brings a long and distinguished record of service to the Green Industry. He became a licensed contractor in 1951, earned a license in landscape architecture in 1954, and taught landscaping and horticulture at Cal Poly between 1955 and 1982. He has worked closely with CLCA over the years, having served as the judge of several Trophy Awards competitions, most recently the Search for Excellence competition in 1985. ■

PLCAA UPDATE

The law firm of Sirote, Permutt, Friend, Friedman, Held and Apolinsky, P.C., Birmingham, Alabama, which represents the Professional Lawn Care Association of America (PLCAA), recently issued a memorandum to the PLCAA's board of directors. The memorandum addressed the ongoing insurance crisis issue. Last month, in this column we printed a section from the memo which discussed the steps a lawn care businessman can take to enhance his prospects of obtaining insurance. This month, we will excerpt from the section on reducing exposure:

"Most businessmen are aware of the need to adopt safety programs and to implement risk programs. The insurance crisis has also made businessmen aware of the need to shield some of the assets in their business from claims. The following means of shielding assets may prove helpful to you:

1. Consider forming a corporation. If you are doing business as a sole proprietor or if you are a general partner in a partnership, you may wish to consider form-

ing a corporation for the conduct of your business. Sole proprietors and general partners are personally liable for all debts and obligations of the business. A corporation may protect the assets of the officers and directors from liability for the debts and obligations of the corporation.

2. Properly observe corporate formalities. Once a corporation is formed, the mechanism exists to shield officers and directors from personal liability for debts of the corporation, but the failure to properly observe corporate formalities can subject officers and directors to personal liability.

3. Decentralization may be helpful. If you own several businesses, or if your business carries on a variety of functions, such as selling products, providing services, and holding title to real estate or equipment, it may be wise to form a corporation for each of the separate functions.

4. Obtain waivers for risks. Many businesses are operating with contracts and agreements drafted five to 10 years ago; others have no written contracts at

all. Written sales and service agreements can minimize your liability by disclosing risks and obtaining waivers for these risks.

5. Develop loss prevention programs. Insurance carriers are experts at identifying risks. By reviewing the insurance company's underwriting guidelines and by discussing the areas which the carrier believes create the greatest risks, you may be able to assess and control certain risks associated with your activities.

6. Consider shielding personal assets. If you desire to continue doing business as a sole proprietor or in a general partnership, or if you simply wish to obtain additional protection for your personal assets, you may wish to shield some of your assets by transferring those assets to another party or creating trusts. If there is a claim outstanding or anticipated, you may not be able to transfer your assets lawfully in order to shield them from that claim.

7. Consider hiring technicians as independent contractors. This could place the liability risk on the contractor." ■

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*What do you look for in a good spray rig?
Chances are, you have some definite ideas about
the qualities you look for in a good spray rig.*

Lawn care spray rig technology really hasn't changed much in the last few years, so by now most established lawn care operators have decided upon the type of spray rig they want to use. When low-volume spray technology came on the scene a number of operators made the switch to low-volume, but conventional high-volume rigs remain the mainstay of the industry. When you ask a lawn care businessman about the qualities he looks for in a spray rig, he can make a list without any hesitation.

LAMBERT'S LANDSCAPE. Harold Spiegel, Service Manager at Lambert's Landscape in Dallas, Texas, knows what he wants in a spray rig. For starters, he wants a rig that is quiet. "The one we started out with was so noisy the whole neighborhood came out to complain," says Spiegel. Quiet operation is one of the things he appreciates about the PTO-driven pump on his Pro-Turf Manufacturing spray rig. Spiegel also lists versatility, durability, and pressure regulation as other benefits.

He says resale value is also important, but it is not a high priority factor. Resale value is more important to

Struyk is impressed with Pro-Turf's ability to re-build used trucks.

"They took four of my used trucks (Chevy C-30s) and literally made a purse out of a sow's ear. It improved our image a million percent."

the equipment department at Lambert's Landscape, according to Spiegel, because all spray rigs are leased from that department. "We have our own shop here and we do a lot of maintenance level repairs and rebuilds," says Spiegel. "With the fiberglass tanks and other components, we can always switch over to another truck if need be."

The company currently operates three spray rigs: the original 2-ton rig with FMC Corporation and John Bean components; a 1-ton, Pro-Turf truck with a 500-gallon tank; and another 2-ton truck with a 1,000-gallon tank, which is divided into two 300-gallon compartments and two 200-gallon compartments. The truck with the 1,000-gallon tank was recently re-worked by Pro-Turf

and is now used for both lawn and tree applications. "Traditionally, this company has gone with nothing but 2-ton trucks," says Spiegel, "so the maneuverability of the 1-ton truck is definitely an asset."

He says his company's spray rig needs have changed in recent years. "When I first came here three years ago, the spraying phase of the company was strictly a support function," explains Spiegel. Since he has a lawn spray background, Spiegel began to incorporate spraying into the company's repertoire of services, particularly for trees. "We have evolved into lawn care over the last three years," says Spiegel.

The FMC/John Bean spray rig is 10-years-old, although the truck beneath it has been replaced once. Spiegel says he expects to get three to four years out of a truck. He has been impressed with the performance of the Pro-Turf model. "It has been a real relief having the system they put together because it is well-built — basically trouble-free," claims Spiegel.

STRUYK TURF MAINTENANCE. Garry Struyk, President of Struyk Turf Maintenance in Council Bluffs, Iowa, is also pleased with his Pro-Turf rigs. He is currently operating six Pro-Turf rigs with PTO-driven pumps and stainless steel tanks. Two of them have 750-gallon tanks mounted on Ford F350 trucks. The remaining four have 600-gallon tanks mounted on Chevy C-30 trucks. When he got into the business in 1970, he was using skid-mounted rigs with auxiliary engines and polyurethane tanks.

The qualities Struyk looks for in a spray rig are durability and safety. "The reason we went to this rig is because of the low center of gravity," explains Struyk. "It makes the truck very stable. They are baffled and the poly tanks weren't baffled. These are a very smooth riding unit, very safe."

He also appreciates the outstanding resale value of the spray rigs he is using now. Struyk's company is primarily granular in application format, so he uses the spray rigs strictly for herbicide applications. If he had spray rigs built specifically for the purpose of spraying herbicides, they might have been more useful to him, but their specialized nature would have made them difficult to re-sell.

Struyk is impressed with Pro-Turf's ability to re-build used trucks. "They took four of my used trucks (Chevy C-30s) and literally made a purse out of a sow's ear. It improved our image a million percent."



Struyk's older spray rigs lasted about three years before he had to sell them. He hopes to get about seven years out of the Pro-Turf models. "With stainless steel, the truck will wear out before the tank," says Struyk. He intends to sell the used trucks and mount the rigs on new trucks. The used trucks will be sold through trade magazine classified ads to new companies still in the start-up mode.

Struyk has avoided low-volume spray rigs, not because of the agronomic differences, but because of the physical characteristics of the trucks. Low-volume trucks are typically pickup trucks and Struyk says they are not safe when carrying large amounts of water because of the difficulty in braking. He also contends that pickups are not as durable as 1-ton trucks. "When we first started, we used pickups with 200-gallon tanks and they didn't hold up nearly as well as the 1-ton trucks," says Struyk. "You can buy a 1-ton truck that will last you almost forever for the same price you can get a pickup that is worn out before it is paid for."

NICE 'N GREEN. Not all lawn care businessmen would agree with Struyk's assessment of low-volume spraying. James Mello, Manager of Nice 'N Green, Inc. of Romeoville, Illinois, has converted his entire fleet to low-volume units and is pleased with the results. First of all, Mello says the initial cost of the equipment is much lower than conventional spray rigs. There is also a considerable savings on fuel bills. The mini-pickup trucks used to carry low-volume spray rigs are also easier for the operator

to maneuver. "Because the equipment is lighter, we can drive on some turf areas where I would have been afraid to with a 2-ton," says Mello.

There are also important agronomic benefits to be had with low-volume spraying, according to Mello. He says weed control can be improved by spraying at low volumes. However, he notes that fertilizer burn potential is increased with low-volume spraying. Selection of low-burn liquid nitrogen sources such as NG 1515 and Formolene® can offset this problem.

Mello says an injection system will produce even better results when incorporated into a low-volume or high-volume spray rig. Mello's low-volume equipment feature an injection system which consists of a separate pump, tank, and line attached to the hose which allows him to inject materials at the spray gun. There are some advantages in being able to target pesticides with an injection system, according to Mello. First of all, there is a reduction in the amount of pesticides being applied. This makes the application more environmentally sound. By targeting pesticides, one can also reduce overall pesticide costs. The amount of pesticides the applicator is exposed to is also reduced.

Mello's low-volume spray rigs with built-in injection systems were manufactured by Perma-Green Supreme, Inc. He has been using the same spray units for three seasons now with no complaints. After two years, Mello trades in his trucks and installs the low-volume units on new trucks. One of his reasons for getting rid of the trucks after they are two years old

is the two-year warranty they come with from the dealer. His repair bills are virtually nil during the two-year warranty period.

Secondly, he buys the white mini-trucks six at a time and sells them after two years with relatively low mileage on them. "I am recuperating about 80 percent of the initial cost," claims Mello. "Now I have brand new trucks to work with after two years." He says that kind of return on one's investment is difficult to do with the big 2-ton trucks. One-ton trucks, however, can also be resold with little of the initial investment lost. "In fact," says Mello, "I went to 1-ton, dual-wheel, mini-trucks, as opposed to the single wheel, just for additional load capacity."

When Mello got started in the business, he was operating 2-ton conventional spray rigs, but he converted six of them to low-volume within one year. "I have already gone through a fleet of trucks and I am into my second fleet," says Mello. "You can easily buy two or even three of these trucks for the cost of one 2-ton. And my low volume system runs off the battery so there are no belts, PTOs, or engines, so it doesn't burn gas all day while we are spraying."

Initially, Mello worried that his customers would feel they were not getting as much for their money as the homeowners who hired lawn spray services with big trucks. Luckily, his fears were unfounded.

"Since I have gone with low volume I have found exactly the reverse. Not so much that people don't care about what

(continued on page 31)

TANK-MIXING PESTICIDES

The *Specialty Products Manual* published by Stauffer Chemical Company contains the labels of the company's specialty turf products. The manual also contains some good tips on the mixing and application of those products. The following information is excerpted from the manual's section entitled, "Tips on Tank-Mixing Pesticides."

- Read the labels carefully for all products you will mix. Follow directions.
- Do a small-scale "jar test" for compatibility as follows:

Place one pint of carrier-water or fluid fertilizer in a quart jar. Add each pesticide or pre-mix of pesticide to the water, one at a time, and shake well with each addition. Use each product in the same proportion to carrier as it will be in the actual tank mix.

Unless labels indicate otherwise, add pesticides in this order: wettable powders first, followed by flowables, water solubles, surfactants, and emulsifiable concentrates.

Invert the jar 10 times, then inspect the mixture immediately and then inspect it after standing quietly for 30 minutes. If a uniform mix cannot be made or if nondispersible oil, sludge, or clumps of solids form, the mixture is incompatible and should not be used. Minor separation after 30 minutes, without sludge or clumps, and which remixes readily with 10 jar inversions, is tolerable if field spray tank agitation is good and keeps the combination mixed.

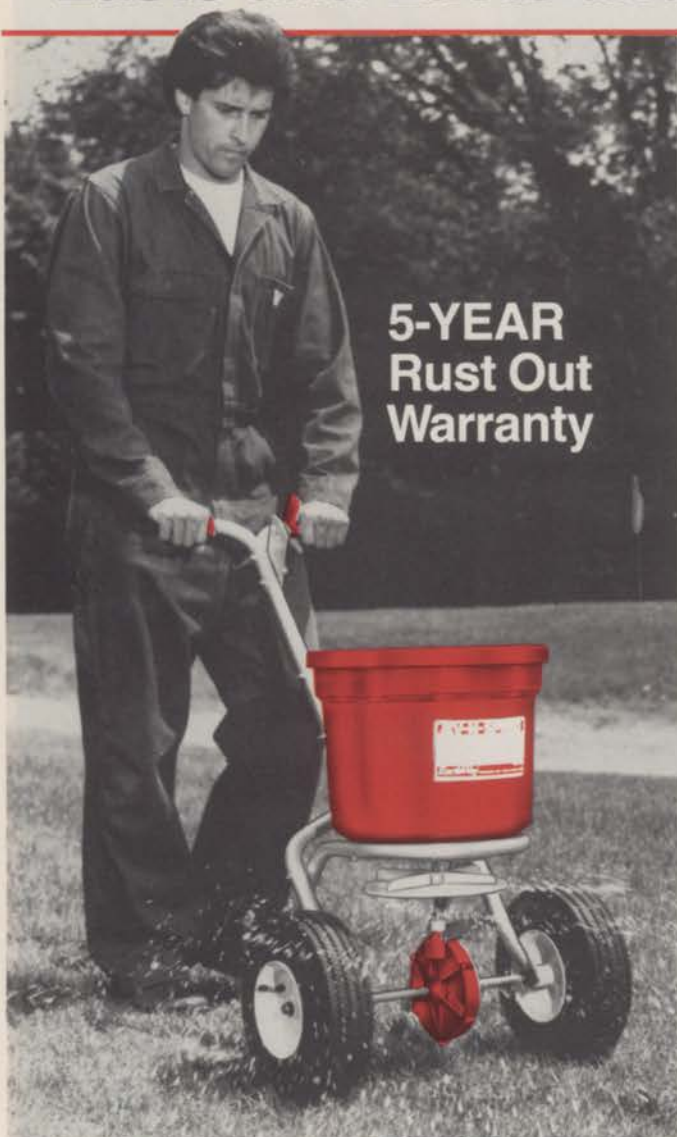
- When you tank-mix in volume, put $\frac{2}{3}$ of the carrier in the tank first. Then add pesticides one by one, with wettable powders first. Agitate for thorough mix-

ing after each addition, before pouring in the next. Finish filling the tank with carrier.

- Keep agitation going at all times on the way to the field, during application, and during stops for any reason. Empty the tank preferably on the day of mixing. Do not allow mixture to stand overnight without agitation. Check labels for temperature and humidity data as they affect mixing or delay in use.
- With any new combination, test your tank mixture on small areas, at varying rates and conditions of use, before large scale use. Check with your state college or extension agent for test data and check on variations in local water supply that may affect performance.
- Use exact dosage rates for registered tank mixes. Changes may cause turf injury or poor performance on weeds or pests.

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RATING SPRAY EQUIPMENT

(continued from page 28)

they are getting, it comes down to performance on that lawn. As long as you are not out there with a rusty old pickup truck, people don't care what you come out with." But even more surprising is the fact that many people are actually attracted to the trucks. "We have gotten such a flood of people commenting on our small trucks because they are cute! Now our logo is at eye level from a car seat. They don't have to look way up at some smelly truck."

THE LAWN COMPANY. Public image is also important to Ed McGuire, President of The Lawn Company in Cape Cod, Massachusetts, but he is more concerned with the mechanics of a lawn spray rig. McGuire buys chassis cab trucks locally and sends them to Graham Lawn Care Equipment, Inc. for outfitting with spray equipment. "In a spray rig, we are looking for something that is proven, simple, and easy to work with," says McGuire.

McGuire's rigs are conventional high-volume units. He has a 1-ton truck with a 600- and a 100-gallon tank on it with double reels. He also has three 1,200-gallon trucks that are divided into two compartments with double reels.

McGuire has been in business for five years and still has the first truck he bought. It is now used as a backup if one of his other trucks is down for repairs. The first truck is a Graham Lawn Care rig and his newer trucks are patterned along the same basic design, with the addition of an extra drop tank and extra reel. "We find the 1-ton truck is the most economical and meets the needs we have," says McGuire. "We are not in an area with a lot of large lawns. The 1-ton truck with a 600-gallon tank is more than enough."

McGuire also has three pickup trucks with skid-mounted rigs in the back, but he has found that they are not as durable as the 1-ton units. "They can stand a little more weight," says McGuire. "The only problem we have with the 1-ton trucks is that they do have a limited life as far as major parts like the clutch and brakes. They do wear out after a few years."

LAWN MEDIC. P.J. Lenihan, Vice President of Lawn Medic, Inc. in Kernersville, North Carolina, also buys his spray rigs from Graham Lawn Care Equipment. Lenihan was so impressed with the Graham unit which features a 1-ton truck with 600- and 100-gallon tanks, that he bought eight of them. He likes the fact that the large tank can gravity-feed into the smaller tank. "You will have a base mix in the big tank, but if you want to add something to it, you can drop-feed into the little tank, add another product, and spray a particular lawn differently," says Lenihan. This system is not to be confused with an injection system.

He is impressed with this system's ability to deliver material accurately with a great deal of simplicity for the operator. "I have been very happy with this particular rig for the last four years or so," says Lenihan. "My needs have changed a lot over the last 14 years. I am planning to buy a couple more of them, so I am not going to make any changes for next year." He says Graham is the only equipment manufacturer he has gone back to, and he has bought rigs from six different sources in the past.

Lenihan replaces his spray rigs every four to five years. "Most of the equipment that I have disposed of has been sold to start-up lawn care operations," says Lenihan. He monitors down-time very closely and gets rid of vehicles when they start to become a maintenance burden. "We have a computer maintenance system," says Lenihan. "Once we start to see too much down-time on a piece of equipment we will put it in the classifieds." — *Tim Weidner*

The author is Managing Editor of ALA magazine.



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CONFUSING PATCH DISEASES OF TURFGRASS

Many patch diseases are difficult to identify, therefore, it is important to know key identification characteristics.

Various soil-borne fungi attack the roots and crowns of turfgrasses resulting in disease symptoms where, typically, grass plants die in more or less discrete patches that are roughly circular, ring, or "frog-eye" in shape. Given environmental conditions conducive to disease development, a particular pathogen may incite severe scarring of managed turf with concomitant loss of playability and/or aesthetic appeal. Such diseases present a recurring and confusing problem to the turf manager because, although manipulation of cultural practices may offer some relief, preventive application of fungicides provides the only reliable control measure.

In the absence of a "universal" fungicide, an appropriate chemical must be utilized against the particular fungus present, and correct diagnosis of the causal agent therefore is essential. Since the visual symptoms do not differ appreciably, diagnosis invariably involves microscopy and often time-consuming isolation of the pathogen(s) into laboratory culture before any true identification can be made, especially for patch diseases of Kentucky bluegrass turf. Recent research indicates that *Fusarium* blight symptoms on this host are mimicked by several other fungal pathogens and the literature accumulated on this subject over the past 20 years must include questionable information because of mistakes made in diagnosing the causal agent.

Figures 1-6 illustrate the symptoms of some currently known patch diseases that present problems in diagnosis:

1. Take-all patch, caused by *Gaeumannomyces graminis* var. *avenae* is a highly destructive disease primarily of bentgrasses favored by cool temperatures, high soil moisture, and high soil-surface pH. Initiated in spring or fall, symptoms may be exacerbated in succeeding hot, dry weather conditions. Kentucky bluegrass may support growth of the fungus, but severe damage to this host has not been documented. Diagnosis is made by examining for colonizing mycelium on roots and stems and for the presence of fruiting structures (perithecia) on or between leaf sheaths. Isolation of the causal fungus is often necessary.

2. Yellow patch (cool-season brown patch) is caused by *Rhizoctonia cerealis*. In New England this is primarily a late fall/mild winter/early spring disease of bentgrasses and annual bluegrass in cool, wet weather conditions. The disease may progress under snow cover when snow accumulates on unfrozen ground. Although somewhat similar in appearance to take-all patch, the damage tends to be superficial and the symptoms short-lived when temperatures rise sufficiently to promote active growth of the grass.

Elsewhere the disease has been reported to occur commonly on Kentucky bluegrass turf causing moderate to severe patch symptoms during cool, wet weather. The symptoms on this host match closely those of necrotic ring spot. Diagnosis involves identification of characteristic mycelium on leaves and stems and the presence of resting structures (sclerotia). Isolation of the causal fungus may be required for final confirmation.

3. Necrotic ring spot is caused by *Leptosphaeria korrae*. A component of the "Fusarium blight syndrome," this is a fall/spring disease primarily of Kentucky bluegrass, especially damaging to two- to four-year-old sodded turf areas, in cool, wet weather. Turf growing in shade is vulnerable. Symptoms may be exacerbated in succeeding hot, dry weather conditions.

The same fungus causes spring dead spot of bermudagrass in Australia and was confirmed recently as the incitant of this disease in California. The disease can be diagnosed by the presence of dark brown mycelium on roots and stems as well as the presence of fruiting bodies (pseudothecia) on sheaths, crowns, and roots. Isolation of the causal fungus is often necessary.

4. Summer patch is caused by *Phialophora* spp. A component of the "Fusarium blight syndrome," this disease is associated primarily with established Kentucky bluegrass turf growing in full sun and occurs during periods of sustained high temperatures (c. 90 degrees Fahrenheit daytime; more than 70 degrees at night) that follow periods of ample rainfall. Symptoms may be exacerbated by succeeding hot, dry weather conditions. The disease may be diagnosed by mycelial characteristics on roots. Isolation of the causal fungus is required.

5. Fusarium blight (*Fusarium* crown and root rot) is caused by *Fusarium* spp. This is primarily a disease of established Kentucky bluegrass turf during sustained high temperatures, on turf growing in full sun and subject to heat and/or drought stress. Information relating to the incidence and distribution of this disease needs to be re-evaluated and the importance of *Fusarium* species as primary incitants in patch disease situations confirmed through pathogenicity studies. Diagnosis can be made by examining for mycelium on roots and crowns, also for the presence of spores (conidia). Isolation of the causal fungus is required.

6. Some patch diseases are complexes. Several pathogenic fungi may be well represented in a patch disease situation and their relative contribution to the disease process may be difficult to assess. Here are some examples encountered recently:

L. korrae, *Phialophora* spp., *Rhizoctonia* spp. and



Figure 1. Symptoms of take-all patch on bentgrass turf. (photo by Noel Jackson)



Figure 2. Symptoms of yellow patch on Kentucky bluegrass turf. (photo by P. O. Larsen)



Figure 3. Necrotic ring spot symptoms on Kentucky bluegrass turf. (photo by Noel Jackson)



Figure 4. Summer patch symptoms on Kentucky bluegrass turf. (photo by Noel Jackson)



Figure 5. *Fusarium* blight symptoms on Kentucky bluegrass turf. (photo by G.A. Bean)



Figure 6. Symptoms of a patch disease complex on velvet bentgrass turf. (photo by Noel Jackson)

Fusarium spp., have been found singly and in various combinations in diseased patches of Kentucky bluegrass. *Phialophora* spp. have been found in association with *Pythium* spp. in diseased patches of Kentucky bluegrass. *Colletotrichum graminicola* (the anthracnose fungus), has been found in association with *G. graminis* var. *avenae* on the roots and stems of bentgrass exhibiting take-all patch symptoms. *C. graminicola*, *Phialophora* spp. and *Bipolaris sorokiniana* (a leaf, crown, and root pathogen) have been found along with high populations of parasitic

nematodes in diseased patches of bentgrass that resembled take-all patch (Figure 6).

Such examples suggest that our one pathogen/one patch disease interpretation often may be too simplistic. Further research is needed before the full implications of these disease complexes can be established and suitable control measures developed. — Noel Jackson ■

The author is professor of Plant Pathology, University of Rhode Island, Kingston, Rhode Island.

QUALITY SEED MAKES QUALITY TURF

A lot of work goes into the production of the seed you put down on your customers' lawns, but that work produces a quality stand of turf.

This article concerns seed quality. Actually that is a misnomer because what we are really interested in is turf quality, or better yet, quality turf. We want turf that is attractive; free from insects, disease, and weeds; adaptable to various environments; and finally, uniform and easy to maintain.

As professionals, we do not want a problem turf, turf that is thinned out or becomes weedy. We do not want a turf that is prone to disease because that turf will be both unsightly and very expensive to maintain and renovate. We want to avoid insect damage such as hyperodes weevil, billbug, and grub damage. We want to avoid poor-quality mixtures like coarse grass and off-type grass contamination in an otherwise quality lawn.

This type of contamination occurred in a California sod field. Annual ryegrass plants had to be physically removed from a perennial ryegrass-bluegrass sod mixture. This was obviously very time consuming and expensive. In summary, we are concerned with appearance, resistance, and maintenance. Now that we know what kind of turf we want, we should think about where it comes from and how to get it. Our discussion will concentrate on the seed because quality turf starts with quality seeds. We will look at four specific areas: research, production, conditioning (cleaning and harvesting of seed), and finally, testing.

Seed varieties today are not the by-products of pasture fields like they once were. Turf seed today results from extensive research programs that take several years to formulate. Turfgrass breeders scour the country looking for the perfect patch of turf. They often cross promising parents and germinate the seedlings in a greenhouse. These seedlings are then transplanted to a spaced-plant nursery where their behavior is observed. Undesirable plants, those not disease resistant or too light in color or too tall or whatever, are rogued out and discarded.

From those remaining, a selection process ensues and the cycle repeats itself again and again, each time reselecting for the most desirable traits. Promising varieties are planted in trials where they are compared with other varieties. This may be done at several locations across the country. Because of climate differences, for example, a variety that does well in the Northeast, may not



survive in the South.

In these trials differences between varieties emerge. Specific environmental evaluations are also conducted for shade. Many trials are coordinated on a national basis. In the national bluegrass test, for example, 84 varieties of Kentucky bluegrass are evaluated at several dozen locations from New Jersey to California. Research is also conducted in production areas where promising varieties are evaluated for their ability to produce seed uniformly and economically. Field days and yield trials also aid in sorting out the best varieties. Finally, once a variety has proven itself both in the production areas and in the area of use as being superior to others of its type, it may receive varietal protection from the USDA. This is similar to a patent awarded an inventor for a novel concept. At this stage, the variety is now ready for production.

Production is the art of taking a few grams of seed from the breeder and transforming it into a predictable, economical, uniform product of several hundred thousand to over a million pounds annually. I say art rather than science because the growers are constantly in battle with



A quality Northeast lawn combining Eclipse Kentucky bluegrass and Omega II perennial ryegrass.

Mother Nature. It seems as if it's always too hot until the cold spell sets in, too dry until the rains come, etc.

At the heart of quality production is certification — a program administered by various state agencies to insure varietal quality. Standards are set for each species and each grade of seed — breeders, foundation, and certified. A field history and inspections of the stand are made. Many varieties are planted by charcoal method. Once the field is prepared, the variety is sown in spaced rows which are covered by charcoal granules. The whole field is then herbicide-treated to prevent weeds. The seed under the charcoal blanket is unaffected and properly germinates. Fertilizer applied at proper times fills out the plants. Crews continuously rogue out off-type plants and unwanted weeds. Trained field men watch for diseases and recommend sprays as necessary. In due course, pollination occurs and seed continues to develop and ripen.

At harvest the stand is swathed, seed heads are cut from the plant, and piled in windrows to dry. Machines are used to separate seed from the straw. The final step is field burning, a controversial issue, but one that is vi-



This is the effect of seed conditioning. Note the cleaned seed on the left with impurities removed.

tal to the farmer. This burning kills any field-borne insects and diseases and shocks the plant into good seedhead production for the next season. Most of you experienced difficulties in obtaining your preferred bluegrass variety in 1984. This short crop was in part due to the very wet harvest conditions in 1983 which resulted in poor field burns or in some cases, no burn at all.

The third phase of obtaining quality sod is conditioning. Combined seed is brought from the fields to conditioning plants where through a series of mechanical separators, the seed is physically cleaned. Impurities, bits of dirt, other seeds,

weeds, straw, etc., are removed.

The last step in the generation of quality seed is testing. Each lot is carefully sampled and then transferred to an authorized lab for testing under uniform and well-established procedures. Seeds differ greatly in size and shape — from 100,000 to over 7,000,000 per pound. The sample is examined for purity, inert matter, the identification of other crop seeds, weeds, and finally it's tested for germination.

In the case of ryegrass, a special test is performed. Annual and perennial ryegrass seeds are very similar in appearance and thus difficult to tell apart.

But after special staining, annual ryegrass seedlings fluoresce under ultra violet light and can easily be counted.

This is how our industry develops quality seed. What you need is quality turf. Let's summarize how you can get it.

- You should be sure that the mixture you are buying or specifying will work under the intended environment. For example, if you need rapid coverage, do not use all bluegrasses — they take considerably longer to germinate.

- Specify the improved varieties. They cost a little more, but are well worth it, particularly when one compares the differential cost per pound versus chemical treatment costs and maintenance labor later stemming from the use of common quality seed.

- Educate yourself — become more knowledgeable about your profession by reading the trade magazines, and attending field days and conferences. Talk to your extension agent. Belong to a trade association.

- Select a reputable supplier — he will generally have the quality product you want when you need it. He will also be able to answer your questions.

- Read the label. Know what goes into the bag you are purchasing. All seed is regulated by both state and federal agencies. The purity of each component must be listed in its order of predominance. Any other grasses occurring less than 5 percent are listed as crop seed. These grasses may or may not be detrimental to a good turf. In any event, keep this percentage low. Weed seed is also listed and should be kept as low as possible. Any serious weeds, defined as noxious, must also be indicated. Broken empty seeds, bits of straw, particles of dirt, etc. are classified as inert. A 50-pound bag with 10 percent inert is really 45 pounds of seed. High inert increases your effective cost of seed and should be avoided.

Finally, each component must be tested for germination and the date of the test indicated. Under federal law, seed must be retested for germination after 15 months.

In summary, quality seed is the cornerstone for quality turf. Varieties are readily available that will improve the appearance of your customer's lawns without requiring excessive maintenance. Lower quality, lower priced seed is also available. Like the man says in the commercial — you can pay a little more now or a lot more later, the choice is yours.

— John Zajac

The author is Vice President and General Manager of Garfield Williamson, Inc., Jersey City, New Jersey. This article was reprinted by permission of the author from a recent issue of the New York State Turfgrass Association bulletin.

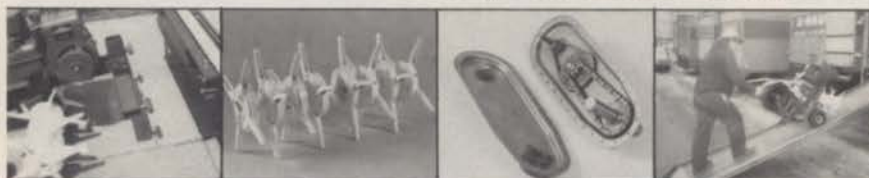


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NEW TALL FESCUES: POTENTIAL FOR PROFIT

Kentucky 31 tall fescue move over, the new "fine-bladed" tall fescues have arrived and look better than the old standard Kentucky 31.

Since its release in 1943 by the Kentucky Agricultural Experiment Station, Kentucky 31 has been widely used as both a turfgrass and a forage species. It has been a real "work horse" for the turfgrass industry over the years. Its adaptability to a wide range of soil types, climates, and management regimes has made it a suitable selection for quality turfgrass over much of the South and mid-Atlantic region. However, primarily through the turfgrass breeding program of Dr. C. Reed Funk of Rutgers University, there have been several new "fine-bladed" tall fescues released in recent years that have greater density and finer texture than Kentucky 31 tall fescue. These new "fine-bladed" tall fescues have attracted much marketing interest because of their tendency to produce a finer textured, more dense turf than Kentucky 31 tall fescue. Consumer interest and the positive agronomic attributes of these new tall fescues have created a real potential for profit in the turfgrass industry.

In general, tall fescues are a hardy turfgrass exhibiting a deep rooting tendency, with a medium-green color and moderately coarse texture. They tend to have a rather rapid and upright growing tendency, particularly in the spring and early summer, necessitating frequent mowing. Leaf generation in summer heat is only moderate.

With fall fertilization, they will demonstrate moderate recuperative potential in October and November.

Tall fescue is particularly well-suited to the transition zone climate which separates the northern and southern regions of the United States. Some cultivars have demonstrated moderately good shade tolerance, however their greatest strength appears to be their ability to perform well on full sun, drought-prone sites with low to moderate maintenance regimes. The tendency of tall fescue not to develop a troublesome thatch layer has saved homeowners considerable amounts of money. Thatch buildup on Kentucky bluegrass has been a serious management problem to the lawn service industry in the northern United States. One of the major weaknesses in tall fescue germplasm is its general susceptibility to *Rhizoctonia* brown patch (*Rhizoctonia solani* Kuhn) and *Helminthosporium* net blotch (*Helminthosporium dictyoides* Dresch.).

Many varieties of tall fescue are now commercially available. Their strengths and weaknesses vary widely. Some of the characteristics of the more promising cultivars were most recently discussed by Funk, Dickson, Bara, and Cicalese (2).

ADVENTURE tall fescue (PS5LL) is a medium texture variety derived from selections made from old stands in the mid-Atlantic region of the United States. It demonstrates good resistance to *Rhizoctonia* brown patch and moderate resistance to net blotch. Seed was made available in 1983 by Pure-Seed Testing, Inc.

APACHE tall fescue (PS5M4) was developed from selections made in New Jersey, Georgia, and Illinois. It has medium texture, moderately good resistance to net blotch and *Rhizoctonia* brown patch, and very good resistance to crown rust. Commercial seed was made available by



Lawn on right had been renovated with new fine-bladed tall fescues. Lawn on left is Kentucky 31 tall fescue.



Home lawn in Virginia with new fine-bladed tall fescues. Fine-bladed tall fescues are performing better in moderately shady lawns than Kentucky 31 tall fescue.

Pure-Seed Testing, Inc. in 1984.

BONANZA tall fescue (PS5L4) is noted as a low-growing type with a notably darker green color. It is a three-clone variety made up of selections from New Jersey and Georgia. It has very good resistance to *Rhizoctonia* brown patch, net blotch, and crown rust. The variety was developed by Pure-Seed Testing, Inc. and is marketed by Cenex, Inc.

BROOKSTON tall fescue (NAPB7803) has good resistance to net blotch and is reported to have improved low temperature hardiness and reduced summer stress tolerance. It has medium leaf texture and was developed by North American Plant Breeders and International Seeds, Inc. It is produced and marketed by AMPAC Seed Company.

CLEMFINE tall fescue (LFA-Syn1) was developed from selections made in the southeastern United States. It resembles K-31 in appearance, has coarse leaf texture,

good resistance to *Rhizoctonia* brown patch, and fair resistance to net blotch. It was released by the South Carolina Agriculture Experiment Station and Lofts, Inc.

FALCON tall fescue (NJ78) was developed mostly from selections made in Alabama, Georgia, New Jersey, Pennsylvania, and Virginia. It was developed cooperatively by Pure Seed Testing, Inc. and E.F. Burlingham and Sons from germplasm provided by the New Jersey Agricultural Experiment Station. It is a moderately low-growing, leafy turf-type.

GALWAY tall fescue (K5-27) has a medium-coarse texture with good heat and drought tolerance and improved cold hardiness. It has moderate resistance to brown patch and net blotch. It was developed by Northrup King.

HOUNDDOG tall fescue (TF791) comes from parentage of Rutgers T-1, Missouri 96, and plants selected in Ken-

tucky and Tennessee. It has good heat and drought tolerance, medium texture, and performs well in shade. It has moderate resistance to brown patch, net blotch, and crown rust. It was developed and released by International Seeds, Inc. of Halsey, Oregon.

JAGUAR tall fescue (PS Syn 572) has good heat and drought tolerance, good shade tolerance, good shade adaptation, and very good color retention with low temperatures in late fall. It has medium texture and very good resistance to crown rust, brown patch, and net blotch. It was developed by Pure-Seed Testing, Inc. and is marketed by Garfield Williamson, Inc.

KENTUCKY 31 tall fescue originated from a selection made on the William Suiter Farm in Menifee County, Kentucky. It has been widely used in the United States since its release in 1943 by the Kentucky Agricultural Experiment Station. It still shows a better tolerance of climatic extremes than most other tall fescue varieties. It does, however, tend to produce a moderately coarse turf texture and has only moderate tolerance to net blotch and brown patch.

MAVERICK tall fescue is reported to have better heat tolerance than many other turf-type tall fescues, medium-fine texture, and very good shade tolerance. It appears to be adapted to moderately low maintenance areas. It was developed by Pickseed West, Inc., using germplasm from USDA, Beltsville, Maryland.

MUSTANG tall fescue (RP-1) is a low-growing variety with medium texture and slightly deeper green color than most other varieties. It has very good shade tolerance and low temperature color retention. It has very good resistance to net blotch and moderately good resistance to brown patch. It appears to have good tolerance of close mowing. The cultivar was developed by Pickseed West, Inc. using germplasm from the Rutgers program.

OLYMPIC tall fescue (AG-125A) has most of its parentage selected from Alabama, North Carolina, and New Jersey. It is a variety derived from the progeny of eight clones. It has a dark green color, medium texture and density, and a moderately low growth profile. It has good heat tolerance and very good late fall color retention. It exhibits moderately good resistance to net blotch, crown rust, and brown patch. Olympic was developed by Pure-Seed Testing, Inc. using Rutgers germplasm.

REBEL tall fescue (T5 and T6) parentage was collected in New Jersey and surrounding states. Part of the germplasm was obtained from tri-species hybrids of tall fescue, meadow fescue, and perennial ryegrass obtained from the United States Regional Pasture Research Laboratory. It is a turf-type variety exhibiting good

leafiness, density, and texture. It was developed by Lofts, Inc. from germplasm obtained from the Rutgers program.

Research reports from Rutgers and Kentucky (1, 2, 3, 4, 5, 6) provide some valuable information about varietal differences in leaf width, density, shade tolerance, seeding rate, disease resistance, and general management.

LEAF WIDTH AND DENSITY. Leaf width and density measurements taken in January 1980 on 4-1/2-year-old stands maintained at a 3/4-inch mowing height at North Brunswick, New Jersey (1) indicate that in mature stands Rebel is significantly finer-bladed and more dense than Kentucky 31. Rebel displayed a leaf width of 2.4 mm and a density of 2271 tillers per square foot. This was 30 percent finer-bladed and 2.8 times as dense as Kentucky 31. Tiller densities and leaf width measurements on younger turf at the same site suggest that these differences may widen with age (Table 1).

Kentucky studies (3,5) examined the effect of Rebel seeding rates from 1 to 20 pounds per 1,000 square feet and noted that highest density occurred at the 20 pound rate, however, turf quality did not significantly improve beyond the 6 pound per 1,000 square-foot rate. Dollar spot (*Sclerotinia hemeocarpa*) incidence increased with seeding rate. Rutgers studies examining 4, 8, and 12 pounds per 1,000 square feet seeding rates on Rebel and

K-31 show no significant increase in turf quality above 4 pounds per 1,000 square feet after the first year (1).

SHADE TOLERANCE. In North Brunswick, New Jersey, after four years of growing several turfgrass cultivars under artificial shade producing 76 and 92 percent shade (light reduction ratings), Rebel produced significantly better turf performance scores than K-31. Under 92 percent light reduction, it provided significantly better turf performance scores than Scaldis and Biljart hard fescue, Banner and Highlight chewings fescue, and Ruby and Fortress creeping red fescue (1).

SEEDING RATE. The above-mentioned studies suggest little benefit in seeding the new tall fescues any lighter or heavier than we have been seeding K-31 (4 to 6 pounds per 1,000 square feet). Rates higher than this appear to increase first year quality and density at the expense of dollar spot increase.

DISEASE RESISTANCE. Brown patch (*Rhizoctonia solani* Kuhn) will continue to be a problem on tall fescue. Trials planted in Remington, Virginia in the fall of 1976 exhibited severe brown patch damage in two of the five years of observation (Table 2). These plots were maintained with fall fertilization providing 3 pounds of nitrogen per 1,000 square feet per year and mowed at a 3-inch mowing

CULTIVAR	TILLERS	LEAF WIDTH
	—Number/sq. ft.—	
Olympic	1852	2.7
Rebel	1801	2.7
Falcon	1750	2.6
Galway	1378	3.1
Clemfine	1247	3.0
Kentucky 31	1156	3.4
LDS .05	.453	0.6

Table 1. Tiller density and leaf width in November 1979 on 14-month-old tall fescues maintained at a 3/4-inch mowing height at North Brunswick, New Jersey (Extracted from Reference 1).

CULTIVAR	DATE	
	24 JUL 80	11 AUG 81
	—% area affected—	
Galway	15 a*	30 a
Rebel	17 ab	37 a-c
Kentucky 31	15 a	43 a-c
Turf Kenwell	12 a	32 a

*Means in columns with some letter are not significantly different at the 0.5 level of probability using DMR test.

Table 2. Brown patch (*Rhizoctonia solani* Kuhn) severity in 1980 and 1981 on selected tall fescue cultivars in Remington, Virginia.

height. Lower mowing heights and nitrogen levels may reduce brown patch severity (5). In both years, complete recovery was achieved by November as a result of the fall fertilization program.

GENERAL MANAGEMENT. Since most of the new "fine-bladed" tall fescues are newcomers to the turf marketplace, there is little published research available. Early data from Kentucky (6) examining nitrogen level and timing, irrigation, and mowing height on Rebel tall fescue suggest the following: Rebel will provide better quality at a 1-1/2-inch mowing height than at a 3-inch mowing height, with or without irrigation. Irrigating the Rebel plots and mowing them at 1-1/2 inches enhanced the nitrogen effect with 4 pounds nitrogen per 1,000 square feet per year providing better quality than 2 pounds applied either spring or fall.

Differences in quality between 2- and 4-pound programs diminished at the 3-inch mowing height without irrigation. Higher amounts of brown patch tended to occur at the 3-inch mowing height and in programs where spring fertilization was imposed. More brown patch was observed in July in the non-irrigated plots than in the irrigated plots.

It appears that the denser, finer-bladed tall fescues will perform best under

It appears that the denser, finer-bladed tall fescues will perform best with fall-applied nitrogen and irrigation at mowing heights ranging from 1-1/2 to 2 inches.

moderate fall-applied nitrogen levels, with irrigation, and at mowing heights ranging from 1-1/2 to 2 inches.

So will Kentucky 31 abdicate to the fine-bladed tall fescues? It's doubtful that in rough turf areas under low maintenance, K-31 will be replaced. The fact that K-31 can do the job adequately and is considerably cheaper, will continue to keep it in demand. However, in the areas where higher quality turf is desired, look for increased interest in the new fine-bladed tall fescues. There is in fact much potential for profit in the new fine-bladed tall fescues. — J.R. Hall, III ■

The author is Turfgrass Extension Agronomist, Virginia Polytechnic Institute, Blacksburg, Virginia. The text was taken from the proceedings of the 24th Virginia Turfgrass Conference by the permission of the author.

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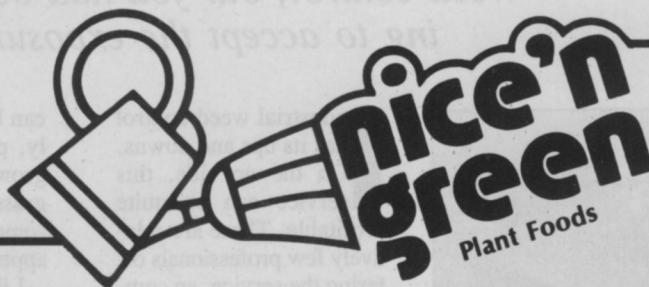
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INDUSTRIAL WEED CONTROL

There is money to be made in industrial weed control, but you had better be willing to accept the exposure risks.



Industrial weed control has its ups and downs. On the up side, this service can be quite profitable. There are relatively few professionals offering the service, so competition is mild, and it is one of the least labor-intensive services a lawn care operator could offer.

On the down side, there is considerable liability in the form of destroying non-target vegetation with soil sterilants and non-selective weed control agents. Overhead is also a factor since many of the herbicides required to do the work are quite expensive.

SENSKE WEED AND PEST CONTROL. Many lawn care businessmen have undoubtedly weighed those ups and downs and concluded that industrial weed control is just not for them. However, a hardy few have waded into the weeds and have come out smelling like a rose. Industrial weed control is such an important part of Chris Senske's business that he has even incorporated the term into his company's name. Industrial weed control accounts for about 20 percent of annual sales at Senske Weed and Pest Control, Inc. of Spokane, Washington.

Senske breaks his industrial weed control, or vegetation management, as he likes to refer to it, into three categories of service. Depending on the situation and client's preference, Senske can perform selective weed control, non-selective weed control, or plant growth regulation. In the case of selective weed control, a client merely wants to kill off noxious weeds.

"Noxious weeds are defined by the state or the county as something that is not desirable in the area for agricultural reasons," says Senske. A client may have a nice grassy berm around an industrial area where he wants broadleaf weeds removed. "It becomes a project similar to lawn care where you are selectively cleaning up weeds out of an industrial site," says Senske. "Usually they want to leave native grasses or grasses that are desirable to hold the soil in place."

Non-selective weed control is particularly for areas that may be a fire hazard or an inventory hazard if objects can actually get lost in the weeds. Fence lines, parking lots, pipelines, and substations, are all places where there

can be no fire hazard at all, according to Senske. Finally, plant growth regulating involves the use of a plant growth regulator material (PGR) to retard the growth of grasses and weeds. "Usually," says Senske, "that is in some area where they don't want to mow often, but the appearance isn't critical."

Like any lawn care service, it is important that industrial weed control be self-perpetuating. It should be marketed as an annual service. "The basis of the business is being able to go back annually and re-treat the same areas," says Senske.

Senske uses no mechanical forms of weed removal, only chemical applications. He says the application techniques are basically the same as lawn care application techniques. "It is just a matter of putting the right amount of material down in the right area," says Senske. "You can do it with the same equipment, however, one wants to be careful of contamination by industrial weed control products." Many of the materials used in Senske's lawn care program are also used in his industrial weed control programs, such as preemergent herbicides, glyphosate, and 2,4-D.

On a per job basis, Senske says chemical lawn care and industrial weed control are equally profitable. However, to maintain the profit margin in industrial weed control, one has to raise prices in proportion to the high cost of weed control materials. Materials usually amount to 20 to 30 percent of Senske's overhead costs, whereas lawn care chemicals might run 10 percent less than that as an overhead cost.

But industrial weed control does have its advantages. "Of course, a guy doing industrial weed control can be at one site all day long, much like a lawn care technician who is doing a big apartment complex," says Senske. "We like to make sure that those people doing industrial weed control are very familiar with calibration and usually need much more thorough training." Even though the service is only done once a year, like other lawn care services, retreatments are necessary if an applicator misses a spot or the treatment does not control the weeds for the entire year.

Fees for this service are based on the cost of materials; the amount of time required to do the job, since a large area can be sprayed by boom, but a small area must be treated by hand; and the risk factor on top of that. Senske says lawn care fees range from \$120 to \$175 an acre around the country, whereas residual, non-selective industrial weed control will run from \$300 to \$800 an acre,



depending on the region. "A technician can produce a lot more dollars in a day, but material costs are a lot higher," says Senske. "Part of it is covering the risk and the warranty, and if you do too good a job, sometimes you don't get to do it the next year!"

There is always risk of damaging or destroying non-target vegetation when working with herbicides, but Senske says if you follow the label directions, things usually go as planned. "The most significant risk is not paying attention to where non-target plants are," warns Senske. "Trees may have roots in a zone where you are doing non-selective weed control. They might die all of a sudden or six months later. That is probably the most common thing we run across."

Almost all of Senske's industrial weed control accounts involve a bidding situation, except their pest control customers where they are doing work in industrial food plants. "It is usually a lot cheaper than the food plant or the industrial facility sending one of their warehouse



guys out to cut down the weeds," says Senske. "That is what the industrial site manager sees. He can have a big savings and have a better looking yard."

Senske does very little advertising for industrial weed control, aside from some work from his established client list and some direct sales. Most of the work is requested by existing customers.

CLINTAR GROUNDSKEEPING SERVICE.

Industrial weed control is also a viable business north of the border. Robert C. Wilton, President of Clintar Groundskeeping Service, Scarborough, Ontario, does not seek out industrial weed control work, but he does offer it to his existing customers. About 85 percent of his industrial weed control accounts are existing customers. "We do industrial maintenance on factories and weed control is generally part of our complete maintenance package," says Wilton.

He does not offer it as a single service and says it constitutes a maximum of 5 percent of his gross sales. However, Wilton says industrial weed control can bring in a higher dollar volume per manhour spent or square foot covered. "Compared to maintenance, it is more profitable when you find it," says Wilton. "It is a little more specialized and fewer people can do it. We tend to get a little more money for that specialized service. We are all licensed to do it and at one time I did a lot of industrial vegetation work." Out of his entire fleet of 40 vehicles, Wilton has one truck set up for "bare ground" vegetation work.

Wilton has found that the most profitable market niche for this service is municipal contracting. He has taken over vegetation control work on roadsides and around guardrails from several municipalities. "The sheer fact of licensing is preventing a lot of municipalities from continuing to do these services in-house — both in roadside work and bare ground work," says Wilton.

ANDREWS AGRICHEMICALS. At the opposite end of the spectrum, Wilton's Canadian peer Burt Andrews has specialized even within the specialized service of industrial weed control. Railroad right-of-way spraying is the bread and butter at Andrews Agrichemicals in Milton, Ontario. "I do railroad right-of-way spraying with soil sterilants in the ballast section and brush control on the rest of the right-of-way," says Andrews. "I use a high-rail truck which goes on the highway as well as the railroad."

In addition to railroad work, Andrews also treats powerlines and pipelines for vegetation control. For the powerline work, he uses a logging vehicle that has been modified to carry a spray rig. He also does general industrial weed spraying for plant sites, chemical companies, and oil companies.

Andrews made his contacts in the industrial weed control business during his 15-year employment with the Du Pont Company's industrial herbicides division. Then for two years he was a sales representative for Du Pont at their Houston, Texas office. "When I worked for Du Pont I was contacting the railroad people and the applicators," says Wilton. "It has been done by custom applicators in Canada since about World War II." He says it was easy to get into the business because of his contacts.

Wilton says most railroads hire private contractors to do their right-of-way work. "Some of it is done in the States by spray train," says Wilton. "Some of that can be a little confusing because the contractor will supply the spray car and the railroad will supply the engine. So if you see it operating, you might think it was being done by the railroad."

Wilton has only two railroad accounts because there are only two railroad lines in Canada — Canadian National and Canadian Pacific. He says each railroad is divided into regions and they contract their weed control work on a regional basis. Canadian National has five regions and Canadian Pacific has three regions. "I quote on work all across Canada, but the work I have this year is all in eastern Canada — from the Manitoba/Ontario border east," says Wilton. "I have all the CP work in eastern Canada and CN work here in Ontario." Not bad for someone who has only been in business for two years.

THE GROUND CREW. Sometimes Mother Nature compounds the drift problem. Applicators servicing industrial weed control accounts for The Ground Crew, Inc. in Arlington, Texas have to contend with average winds of 12 to 15 miles per hour. William E. James, Maintenance Manager at The Ground Crew says that can create

quite a problem since it is not safe to spray in winds over 8 miles per hour.

"This spring seems like the windiest spring we have ever had," says James. "There were always 25 to 30 mph winds. A lot of the guys will come in at 4 or 5 a.m. to do their spraying because you just can't do it in the middle of the day. They will come in at midnight if they have to."

Weed control at The Ground Crew is done by hand from backpack sprayers. James says a foreman is on the job to spot-treat weeds in flower beds, around firehydrants, or in pavement cracks. The work isn't solicited, but a steady flow of it comes in from existing customers. "Maybe four or five times a month a customer will call up and say they have a large area where they need weeds killed," says James. However, there isn't enough work to justify assigning a specific employee to industrial weed control. The jobs are usually done once a year in areas that are not accessible to a tractor with a mower deck.

James considers industrial weed control a foot-in-the-door measure. "It is something that we have to offer because if we don't offer that service, the customer is liable to go to somebody else and that other person may do landscaping as well," says James. "We try to keep all the other companies off our project. That is why we offer that service."

Despite the threat of competition, James rarely has to bid for industrial weed control work. When a customer asks for the service, James quotes them a price in cents per square foot, and the customer then consults with their supervisor to decide if it is fair.

DOWN-TO-EARTH. Rick Mitchell, owner of Down-To-Earth in Dallas, Texas, has found that companies that put their industrial weed control work up for bid eventually come back to him because when they go for a lower price they get what they pay for. Mitchell's company is 5-1/2-years-old and at one time they were strictly industrial weed control specialists. Then the oil business slump came, many local businesses had to cut back, and Down-To-Earth had to diversify. They don't rely on industrial weed control as much as they once did, but Mitchell says it is still a big sector of his business. Through it all, Mitchell can still claim he hasn't lost an account since he started the business.

Industrial weed control now comprises two-tenths of his operation. "I have two applicators that are continually doing nothing but industrial weed control for three to four months out of the year," says Mitchell. The weed control work is done for a handful of high-dollar volume accounts.

"We do quite a bit of bare ground weed

control for oil companies, electrical companies, and a 600-acre tank farm in west Texas," says Mitchell. "We have 200 to 300 substations that we take care of for electrical companies, stretching from Waco up to Tyler." The accounts are on an annual program which calls for an initial application of soil sterilant and subsequent annual applications at a lesser rate which are designed to maintain a level of active ingredient in the soil sufficient to insure a weed-free area.

Mitchell is pleased with the results he has received with American Cyanamid's Arsenal®. "It is great to use for Johnsongrass control and vines; those are the hard-to-control perennials," says Mitchell. Although Roundup® from Monsanto Company has no residual life in the soil, Mitchell says he uses Roundup sometimes because Arsenal and some other products must be used at a very high rate to kill Bermudagrass. "We can go in with a small amount of Roundup and knock out Bermuda and then just maintain a medium rate of the other herbicides to keep bare ground," says Mitchell. "Every location you go to will have a different problem, different soil textures, so you really have to customize each location."

Instead of lawn care specialty chemicals, Mitchell finds that many of materials he uses are labeled for agricultural or industrial use. To apply the herbicides, Mitchell uses 300-gallon John Bean tanks with 20 gallon-per-minute pumps. He uses tips and nozzles of different sizes, depending on the situation. "When you get down to east Texas, you are surrounded by farmland," says Mitchell. "Even here locally, if you go out and do fence lines, you always have to be concerned about your next door neighbor."

On really windy days, Mitchell uses a flood-type spray nozzle to eliminate drift problems. "With certain chemicals that don't need a lot of water volume to get down into the ground, we will use a small nozzle, and we can decrease the amount of volume we put out," says Mitchell. He calibrates some of his equipment as low as 20 to 30 gallons per acre. But in parts of east Texas that don't receive much rainfall, he calibrates his equipment as high as 120 gallons per acre. "That way, we know we have plenty of water volume to move the chemical down into the desired area," explains Mitchell.

His equipment consists of conventional spray rigs with hose reels to allow his technicians to cross rugged terrain on foot. "We can spray a 12-foot swath by hand and it is just as easy to knock it out that way because you have all kinds of obstructions," says Mitchell. His technicians fabricate much of their own equip-

(continued on page 60)

AERATING HOME LAWNS

Is it a profitable service or a business sideline that's labor intensive and requires too much maintenance? Turf professionals from across the country share their opinions

Aerating means different things to different lawn care businessmen. For Jeffrey Murphy, Operations Manager of the Oklahoma City branch of Greenlawn of Oklahoma, it means "extra, high-profit revenue." He dismisses any notion that the add-on service is labor intensive, explaining that his company can send out one man per lawn and aerate 10,000 square feet per hour.

"Aerating has been very good for my business," he says. "I'd recommend it to anybody in the southwest part of the United States. People are very receptive to it, I make money, and it's necessary out here. The soil conditions are so harsh."

Murphy has offered aerating to his customers for many years, but only began strongly encouraging the add-on service two years ago. Today, he aggressively markets aeration. "We advertise the service in our newsletter and we recommend it to most of our customers where we see a problem. It seems to help."

He finds customers in his market area are unfamiliar with the concept of aerating until educated on the subject. However, once the process and benefits are explained to them, Murphy says, clients are very receptive to the idea. "Our market is so young out here that we have to educate customers on everything," he explains.

Of course, providing education on different lawn care processes reduces unrealistic customer expectations. Generally, Murphy has found high satisfaction among his aerating customers. When they know what to expect from a lawn care operator's work before he does the job, Murphy notes, they are not disappointed with the results.

Murphy himself has not been disappointed with the performance of Classen Manufacturing's Turf PluggerR, the aerator that Greenlawn of Oklahoma uses. The business operates three machines and Murphy has been very happy with their durability and efficiency.

Previously, the company operated two different aerator models, both lighter in

weight, but found them unacceptable. "The smaller ones won't do the job," Murphy explains. "They won't core the lawn deep enough to be of any benefit. That was our problem earlier. We went to a very inexpensive machine that was so light it wasn't coring the lawn very deep."

Murphy believes a lawn care operator gets what he pays for. "We were short-

sighted. We only looked at the price; we didn't look at the machinery all together."

Although his new aerators operate much more efficiently and have required little maintenance thus far, Murphy still has a problem with maneuverability. "The machine is kind of spread out and our yards are so small out here. Our average lawn is probably under 5,000 square feet, so it takes a bit of work to



Cushman/Ryan's Ride-Aire aerator is shown here in operation on a home lawn.

maneuver it through a yard properly.”

GENERAL TREE SERVICE. J. Eric Smith, Turf Manager of General Tree Service in Clackamas, Oregon, agrees that maneuvering an aerator around the customer's yard is difficult. His company operates one Westmac aerator, which weighs approximately 200 pounds. Consequently, turning corners and moving the machine around takes a lot of arm and shoulder work, he says. “Rarely do we go out and aerate job after job after job. It's usually a couple of jobs here, then we don't do it for a day or two, and then we may do it again for two or three days,” explains Smith. “And because it's an on-again/off-again sort of service with us, the fellows never get physically acclimated to doing the work.”

In hindsight, Smith may wish the company purchased Westmac's power wheel option, which makes turning corners and aerating on inclines more maneuverable. “I have a feeling that something like that would make the job a little easier.”

Overall, the machine's performance has been very satisfying, according to Smith. “If the soil is moist, it does pull up a real good core. I have seen cores that are at least 2 inches and a little bit longer than that. I would say the machine doesn't pull

anything less than a 1-inch core.”

Maintenance of the aerator has not been a problem either, he adds. “It's been in fairly continuous use for at least two or three months and it has not given us any problems other than an occasional belt wearing out. I don't think we've had to replace any tines or sharpen the tines yet. Maintenance-wise, it's been a very good machine.”

Smith sees many positive aspects to offering home lawn aeration. “It sells easily, it's a good service, and it does benefit the lawns,” he says. “We recommend aerating to all of our clients who need it, either for soil compaction, poor drainage, or thatch that needs to be managed rather than simply removed.”

For the most part, General Tree Service customers have either seen or heard of aerating; however, like Greenlawn clients in Oklahoma, they need to be sold on its benefits. “They're not aware of all the things aeration will help their lawn do,” Smith explains. But once they are, it's a relatively easy service to sell, he adds.

Customers are happy with the service, too. “Our customer expectations have been met quite well,” notes Smith. “We've only had one or two comments from people who wonder if the job was

done thoroughly enough. But most of the time, when customers go out there and start poking their fingers in the holes, they realize there are a lot of cores on the surface and quite a few holes in the ground.”

General Tree Service's turf technicians leave the cores on top of the lawn after they finish aerating a yard. “One nice thing about the Westmac,” says Smith, “is that the cores come out in a broken-up fashion so the lawn doesn't look unsightly. You can definitely tell that cores have been pulled out and that something has been done to the lawn, but it isn't so messy that you have to clean it up right away. We find that the cores will break down after about a week or so through regular mowing, watering, and natural breakdown.”

With the Westmac, Smith does not find it's necessary to physically break up the cores after he is through aerating. “We're not left with a lot of cores laying out over the lawn, because as soon as the core comes up it breaks into two or three sections and starts to filter back down through the thatch.”

If there was a way to efficiently and easily drag a line over the cores, it would be a good idea, he says. “Because something would have to be done if there were a lot of cores on the lawn.”

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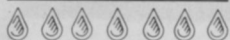


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BECHTEL'S GROUND MAINTENANCE.

Leaving the cores on a lawn after aerating provides proof to the customer that his lawn care company was at his residence, according to Jack Bechtel, President of Bechtel's Grounds Maintenance in Goshen, Indiana. "That's one way to let the customer know what we've been doing," he explains. In addition, the cores on top are going to help the thatch a lot, and that's one reason why we push aeration — because of the thatch problem. If you picked the cores up, it wouldn't help decompose that thatch."

Bechtel has heard of using a chain-link drag to break up the cores on top of the lawn, but he's yet to try the method. "A little rain on the cores and they'll break up themselves," he says.

Currently, Bechtel operates two Ryan aerators. He's planning to buy a third machine in the fall, but has yet to determine what kind he'll purchase. "I wish our machine would punch deeper holes and more holes, and that's partly what I'm going to look for in a new machine," he says. He also hopes to get a bigger aerator, so he can have two different types of machines.

"We've talked about sending two machines on a trailer with two fellows — the slower machine can be used around sidewalks and trees, and a bigger or faster machine can be used on the open areas. Each machine would do the part it's best at doing." In addition, he says, such a set-up would also help the company with training new employees and providing supervision to less reliable personnel.

Bechtel would like to get half of his customers to add aeration to their lawn care program. "I don't want to sell it to somebody that doesn't necessarily need it," he says, "but if we see any kind of a problem where aeration would benefit the lawn, then we mention it to our customers or leave them a little door-hanger."

It's not a difficult service to sell, he explains, but it does need to be promoted. "I notice we didn't market aerating as aggressively last year, so it dropped off a little bit. But when we're talking about it and promoting it, it sells."

CUSTOM LAWN AND LANDSCAPE. Reg Robertson, Owner of Custom Lawn and Landscape, Olathe, Kansas, has not found aeration to be as profitable of a business sideline as he anticipated. "Aerating as a whole really hasn't been that beneficial to us," he says. "Customers are not asking for it, customers are not satisfied with it, and it's hard to get a good machine that will do a good job and last."

He's come up against a lot of price resistance (he charges about \$9 per 1,000 square feet) and knows that improved equipment would mean more expensive

machines. More expensive machines would mean higher prices for his customers, and Robertson is afraid higher costs will only limit his aeration business further.

Nonetheless, Robertson has not been satisfied with today's aerating machinery. He would like to see aerators produce deeper holes, more holes, better maneuverability, and more speed, but he says he's yet to come upon any such aerator in the marketplace. "If you could get a good piece of equipment for a reasonable amount of money, that would do a good job," he says, "then aeration

would probably sell."

COMPLETE LAWN SERVICE, INC. At the opposite end of the spectrum is Joseph W. Stout, III, President/Treasurer of Complete Lawn Service in Arlington, Virginia. He's been aerating lawns since he first went into the turf business 15 years ago, and he loves it.

"We automatically aerate. There's not a choice involved," he explains. "It's like old Henry Ford — you can have any color you want as long as it's black. And you can have any lawn program you want as long as it's got aerating in it. We're in

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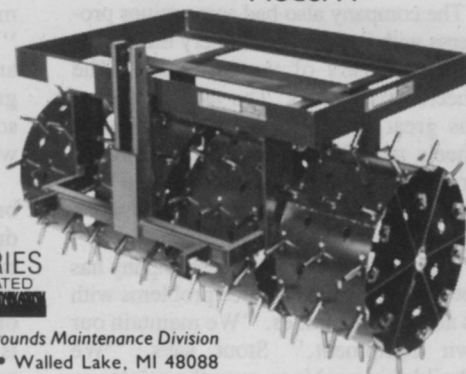


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Virginia and we've got really hard clay here. It's very compacted, so we must have aeration."

Complete Lawn Service runs two Westmacs, two Hahn Eclipses, and one Feldmann spike aerator. "The spike aerator is used for very bad areas that really need some break up. We'll use it prior to seeding on a really bad area, such as on a gasoline spill."

In general, Stout has been satisfied with the durability and efficiency of his aerators. Yet, he'd like to see aerators dig a little deeper and be a little stronger. "The Westmac is only a couple of years old and we've had to make some welds on it," Stout explains. "But now that we have, it seems to be a pretty good machine."

The company also had some minor problems with its Hahn machinery during the first few years of the business. "The wheels would break. The whole machine was great, but the inserts in the metal wheels would come out. After two or three times of this," Stout explains, "we had to find something that would work out, so we got better wheels."

Despite those repairs, the company has not had many maintenance problems with its aerating machines. "We maintain our own equipment," Stout says. "We rebuild the machines over the winter so

they don't usually go down unless they hit something. And that's not the machine's fault."

Most of Stout's customers know about aeration. In fact, he says, most of them know exactly what they're looking for — they ask specifically for core aeration. "On our initial contact, some customers say, 'We hope you're not one of those companies that rides around on a tractor with a roller and spike on it, which aerates then seals it up.' And we say, 'Of course not. We use a hand-operated power machine that aerates with cores.' That gets rave reviews."

Because the soil is very hard in his market area, Stout notes that it's difficult to pull large cores. Despite all the advertisements he's seen, he has yet to see a machine that will pull a 3-inch plug. "You can't take out much of a core in this area unless you're talking about a golf green that's been built. On a regular clay soil, you get a little bit of soil out and it will just melt."

Stout doesn't use a chain-link drag to break up the cores. "That's a way to top-dress," he says. "It may help in extreme cases, but rather than doing that we would just add a top dressing. To take a piece of fence or something to bust up the cores is a lot of work. You're not going to get anyone to pay for that, and we just don't

find there's a reason for it. The soil breaks up itself."

Customers have no complaints about how Stout's business operates. Of course, the company spells out its rules first to avoid any customer dissatisfaction. "We do everything we possibly can to give customers what they want. And we tell them if they water properly, they will have a good lawn. If they don't water," Stout emphasizes, "they will have nothing and we're going to charge them anyway. We've done all we can, now it's up to them. We're the doctors — we've operated. Now they have to heal themselves."

To make the turf's convalescent period as pleasant as possible, Complete Lawn Service offers sprinkler installation to its customers. According to Stout, "You can really get the results with less maintenance if you have a good watering system."

Overall, Stout is very positive about aeration. "It just lets everything go to work a lot quicker," he says. "There's less chance of run-off and better feeding results. It's all pluses; there are no negatives. And those are the things we need." — Vivian Rose ■

The author is Assistant Editor of ALA magazine.

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QUESTIONS & ANSWERS

Q. How much should a lawn care company spend on advertising?—*M. Arnold, Rocky River, Ohio*

A. This is a very tough question. There are many factors that should be considered when determining your annual advertising budget. However, the main factor to consider is the competition in your area. If competition is light, then I would suggest you spend between 5 and 8 percent of your annual sales. If competition is heavy, then you should be looking at 14 to 20 percent of sales. Ultimately, the choice is yours. — *Des Rice, President, Turf Management Systems, Mississauga, Ontario*

Q. What is the lawn care industry's cancellation rate? — *R. Bugelski, Cleveland, Ohio*

A. Although cancellation rates vary, the industry standard seems to be between 25 and 30 percent. — *Des Rice*

Q. What is the best time to treat for white grub problems? — *Richard Hargus, Baltimore, Ohio*

A. There are two times of the year when most white grub-infested lawns can be treated with success. The first period is in late summer (the first three weeks of August in New England), when eggs of most species are being laid and the tiny grubs are hatching out. The grubs are smallest and most sensitive at this time. The major drawback is that there is often not much rain at this time of year, so the area must be heavily irrigated to move the chemical through the thatch and to the grubs.

The second period is mid-spring (mid-April to mid-May in New England). While the grubs are at their largest stage at this time, they are still feeding actively and will ingest some of the chemical. In addition, normally there are frequent heavy rain showers which help move the chemical into the soil where it can work effectively.

Avoid making grub treatments for any of the species which have a one-year life cycle (Japanese beetle, northern masked chafer, oriental beetle, asiatic garden beetle, European chafer) in June or July, because the grubs will not be present at that time. — *Dr. Patricia Vittum, Assistant Professor, University of Massachusetts, Waltham, Massachusetts*

Do you have a burning lawn care question for a member of our Advisory Board? Address your question to **Gordon LaFontaine**, President of Lawn Equipment Corporation; **Dr. William Meyer**, Vice President, Research, Turf-Seed, Inc.; **Des Rice**, President of Turf Management Systems, Inc.; **Dr. Al Turgeon**, Professor and Head of

Agronomy, Pennsylvania State University; **Dr. Joseph Vargas**, Professor of Botany and Plant Pathology, Michigan State University; or **Dr. Patricia Vittum**, Professor of Entomology, University of Massachusetts. Submit your question to Questions and Answers, ALA, 4012 Bridge Avenue, Cleveland, Ohio 44113; 216/961-4130. ■

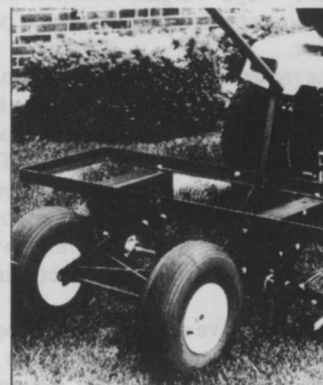
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PRODUCTS

Dollar spot and brown patch can make life difficult for lawn care operators. Dr. Joe Vargas, Michigan State University plant pathologist, says a promising control measure for these diseases is the systemic fungicide Banner, from **Ciba-Geigy Corporation**. EPA registration of the product is expected mid-1986. "Banner gives excellent dollar spot control for three to four weeks," says Vargas, which is longer than most contact fungicides now on the market.

The material gives broad-spectrum control when applied as a preventative treatment, according to Ciba-Geigy biological research specialist Dr. Allison Tally. Besides brown patch and dollar spot, the fungicide will also be labeled for control of rust, red thread, powdery mildew, anthracnose, and stripe smut, according to Tally.

A preventative schedule usually begins in late June when temperatures are consistently above 70 degrees during the night with high humidity, according to Dr. Phil Larsen of the University of Minnesota. Larsen studied Banner and other fungicides at Ohio State University.

Tally says the material gives good residual control at relatively low rates. For dollar spot control, Banner should be applied at 1 ounce per 1,000 square feet. For brown patch, the rate is 2 ounces per 1,000 square feet. "We've found a 14- to 28-day residual control for dollar spot at the recommended rate and 14- to 21-day residual control for brown patch. At these rates we have also noticed that the turf is greener," says Tally.

Circle 146 on reader card

Hoef Import Export (HIE), an importer of plant care products, now offers the Helit Plava line of plant containers to the wholesale gardening and landscape services market in the United States and Canada. Imported from West Germany, this product line combines sleek European styling with low maintenance. Its revolutionary design that combines an internal and external container greatly increases the interval between waterings, simplifies cleaning, and provides a healthier environment for the plants to thrive in. The containers can easily be converted from soil to hydroculture use.

Each container consists of four components: A two-piece external container, an internal container, and a water level indicator. The top and bottom portions of

the external container fit together smoothly and may be disassembled very quickly for cleaning. The bottom half also holds any overflow water. The internal container is suspended from the rim of the top external part and holds the plant and soil. It neither touches the bottom nor the walls of the external container.

The resulting airspace of approximately 1 to 2 inches diminishes water evaporation and allows the moisture to be maintained for a considerable time. At the same time, it insulates against drastic temperature changes, further improving the plant growing environment.

The Helit Plava containers are made of break and chip resistant PVC and are available in white or dark brown. They come in eight different sizes, ranging

from 4-1/3 inches by 3-1/2 inches to 8-2/3 inches by 7-1/2 inches. Prices at the wholesale level range from \$14 to \$36 per container.

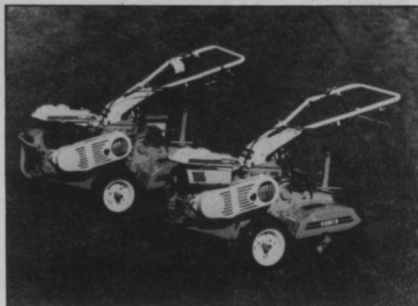
Circle 133 on reader card

Kubota Tractor Corporation has just expanded its consumer and grounds maintenance line by adding two new professional-quality gasoline-powered walk-behind tillers — the 5.5 horsepower AT60 and the 7 horsepower AT70S-E. Both the AT60 and the AT70S-E feature forward/reverse rotating tines. In heavy-rooted and hard-packed soil, a simple gear lever enables the operator to switch the tiller from forward to reverse rotation.

Kubota's heavy duty new tillers also have vertically adjustable handlebars and



a tiller clutch safety feature, which, when released, stops the tilling action immediately. The AT70S-E model also has the added feature of an electric start that



assures quick, easy starting. The AT60 and AT70S-E models are designed to loosen and break up sod and soil, prepare soil for seeding or transplanting, cultivate land, weed between rows, form mounds around plants, build raised seedbeds, cover seeds, and make drainage ditches.

Circle 136 on reader card

The Environmental Protection Agency has granted **Union Carbide Agricultural Products Company, Inc.** product registration for Weedone® brand DPC Amine Herbicide for control of broadleaf weeds in ornamental turf. This is an exciting new product that offers an economical and efficacious alternative to the present amine and ester products in the marketplace. This essentially non-volatile amine salt formulation contains two of the best known broadleaf weed killers, 2,4-D and dichlorprop (2,4-DP).

The product is water soluble and forms a true solution in the spray tank that requires no agitation after the initial mixing. It can also be tank-mixed with fertilizer solutions for efficient once-over application. This Weedone formulation has a pleasing straw color and very little odor. When it comes to weed control, nothing surpasses its ability to control over 70 perennial, biennial, summer and winter annual broadleaf weeds — even the hardest to kill, like oxalis, spurge, ground ivy, and violets.

The product provides excellent turf tolerance to both cool and warm season grasses. It does not contain dicamba or MCPP, thus reducing risk of injury to sensitive turf species or adjacent ornamentals.

Circle 147 on reader card

The Westheffer Company has introduced a new portable gasoline-driven sprayer to its line of application equipment. This skid-mounted sprayer is designed to handle everyday weed control, pest control, herbicide, fertilizing, cleaning, and disinfecting jobs. It has a cast iron roller pump for long life and reliable perfor-

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Circle 143 on reader card

Karcher has developed the unique HD 555. Now you can clean just as the pros do. The HD 555 multiplies your household water pressure by 15 times, but reduces the amount of water needed to



clean with, thereby saving you money and time. The Karcher HD 555 is versatile enough to clean anything, from your cars to your pool, pool decks, aluminum siding, painted or stained walls. It can also be used to spray insecticides and fertilizers. The unit comes complete with a wall-mounted storage case, car wash brush, and detergent and operates on 110 volts. You can even operate with hot

water (up to 140 degrees Fahrenheit temperature). The HD 555 weighs only 33 pounds and can easily be carried to wherever your cleaning problem may be.

Circle 148 on reader card

The new LESCO gasoline-powered hydraulic-driven spreader provides smoother, easier application of granular material. Hydraulic drive enables the spreader operator to select a constant speed, from 0 to 4 miles per hour. This provides a constant rate of application of product and, thereby a cost savings to the customer.

The spreader features an 80-pound capacity polyethylene hopper, corrosion-resistant Delrin 100 gears and third hole on shut-off plate with adjustable metering slide for varying product bulk densities. The stainless steel frame provides durability and strength; extra-long stainless steel handles allow for easy maneuvering. The durable bumper/handle on the front of the spreader protects the impeller and makes carrying easier. The stainless steel axle, impeller shaft and on/off assembly are durable and corrosion resistant.

The engine on the spreader is a 3 horsepower recoil-start Briggs and Strat-



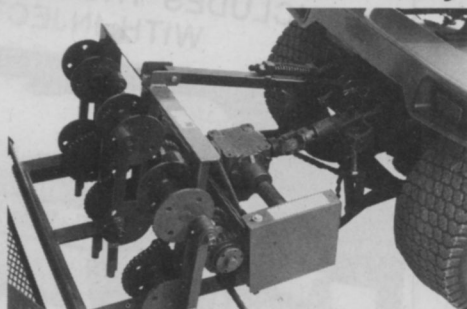
ton Industrial/Commercial. The hydraulics consist of a pump and motor combination with a 1-gallon hydraulic reservoir. The spreader has 13 x 5.00-6 pneumatic tires. A hopper cover to protect product and allow the spreader to be transported without being emptied is available as an option.

To calibrate this spreader or any other spreader, LESCO offers a Professional Granular Applicator Calibration Kit (PGAC), designed to be used with any type or brand of granular applicator-drop,

(continued on page 56)

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Circle 13 on reader service card

PRODUCTS

(continued from page 52)

rotary (centrifugal), or pendulum-action spreader. The PGAC kit contains 11 12-inch square collection trays with dividers; 11 vials with volumetric increment markings; a vial holder; a funnel and a balance beam scale with operating and assembly instructions.

For centrifugal and pendulum action spreaders, the kit makes all three necessary evaluations. The kit measures uniformity of pattern, width of effective pattern, and rate of application. Directions are included for making all three evaluations. For drop-type spreaders, the kit measures rate of application.

Circle 149 on reader card

Perfco Corporation announces its new line — "Summer Sales Survival" package for lawn care operators. Now that we have the spring madness behind us, what's ahead for the summer? Perfco has come up with 30 new door hanger die-cuts. The door hangers feature information on disease problems, mowing problems, watering information, selling to neighbors, a complete agronomic schedule, hard-to-control summer weeds, aphid damage, grub damage, tree and shrub, landscape and design, and more to come. These new items are in four-color, and are designed to promote summer sales offered by lawn care operators.

Circle 150 on reader card

Micron Corporation has announced the introduction of Microflex, a new portable CDA sprayer for narrow-targeted and spot applications. The Microflex is a light-weight applicator utilizing controlled droplet application technology for apply-



ing herbicides. It is powered by four "D"-size batteries and has a 5-pint bottle to contain the chemical mix. The main difference between the Microflex and the existing Herbi (also from Micron) is the width of the swath. While the Herbi sprays in a 4-foot swath, with the new Microflex the user can vary the swath width between 4 and 18 inches. The ability to vary the swath, combined with the controlled droplet size feature, make the Microflex suitable for narrow band application in many situations, including spraying near sensitive areas or crops, as well as for spot treatments.

CDA technology allows treatment of large areas with noticeably reduced volumes. According to the manufacturer, with the 5-pint bottle of the Microflex, one worker can treat a strip 8 inches wide for 20 miles without stopping for a refill.

Circle 155 on reader card

The new multi-purpose steel framing system for any type merchandise storage is now available from the manufacturer, **Bernard Franklin Company**. Only two basic parts are needed — beams and uprights. The interlock assembly of the beams and uprights is simple and easy to do. Rivets on the end of each beam wedge into slots in the uprights without the use of bolts, nuts, clips, or sway braces. Then, simply drop in wood or metal deck. Fast, boltless readjustment. Beams adjust instantly up or down on 1-1/2-inch centers. Permits double entry on shelves from either side.

Called Rivet-Rax, this heavy gauge new steel and wood framing system is ideal for low cost efficient hand loading of goods of all kinds. Perfect for use in warehouses, factories, and other storage areas. Users can save even more money by purchasing their own particleboard deck locally, saving freight and manufacturer's mark-up costs.

The system is available in a variety of sizes and hold from 350 to 2,000 pounds per shelf deck level, depending on widths. Other accessories include industrial grade particleboard or steel decking, support channels, front to back ties, row spacers, and splice plates. Gray baked enamel finish is standard. Optional colors are available.

Circle 152 on reader card

A new tire repair kit designed especially for the tubeless tires used on machines in the lawn maintenance industry is now available from **The Nealey Company**. Tires may be repaired quickly and permanently, on the equipment, to avoid the time loss, bead leaks, and expense associated with dismounting.

The repair material is a cord im-



pregnated with a special rubber compound formulated not only to fill the hole, but to cap and adhere to the casing as well. To repair a tire, the user simply threads the repair cord through the eye of the inserting tool, pushes the threaded tool into the puncture up to the handle and gives it a turn and a half. He then pulls the tool out until it clears the puncture and cuts the repair tool free.

The repairs and tool are packaged in a poly tube which permits the repair kit to be effectively stored for years and can easily be carried in a tool chest. The repair is easy, fast, permanent, inexpensive, and guaranteed.

Circle 156 on reader card

Shindaiwa, Inc.'s "How to Buy a Trimmer Without Getting Clipped" is must reading for anyone with an interest in trimmers and brushcutters. Published as a public service by the manufacturer, the booklet cronicles the background and history of trimmers from the first crude prototype to today's highly sophisticated machines.

This publication provides the reader with a wealth of information that enables him to make an informed buying decision and to use his machine properly once he gets it home. Discussed are the differences between electric models and those powered by two-cycle engines. Readers learn where to look for quality machines and what to consider when receiving a demonstration. A handy chart helps the reader pick the right class of machine to fit his particular situation.

Circle 153 on reader card

Lawn care professionals now have available an economical low volume spray system from **Ag-Chem Equipment Company, Inc.** The complete system

(continued on page 58)

RYAN® INTRODUCES THE Lawnaire® IV



The self-propelled walk-behind aerator that does a professional job on home lawns and smaller turf areas.

- Equipped with 30-3/4" coring tines providing an aeration pattern of 9 holes per square foot.
- Penetration up to 2 3/4".
- Two weight options provided for increased downward pressure - a 38 lb. steel bar and/or steel drum that holds 55 lbs. of water.

- Convenient lift handle for raising and lowering transport wheels which provide added maneuverability.
- Covers up to 21,000 square feet per hour.
- Tine wheel shaft and water drum shaft are equipped with two grease fittings and protected by felt seals to keep out dirt.
- 3 h.p. industrial engine with rotary stop switch for easy shut-off.
- Fuel tank holds two quarts.

Designed for the professional who wants to provide quality core-type aeration at a high rate of speed, the new Lawnaire IV is the most dependable walk-behind roll-type aerator on the market.

More and more homeowners are asking for lawn aeration to break down thatch and improve turf quality. The Lawnaire IV offers lawn care professionals and rental outlets a core aerator that pays for itself in just weeks.

LAWNNAIRE IV SPECIFICATIONS

Model 544863

DIMENSIONS

Width 28"
Swath 19"
Weight Dry-215 lbs.
Water in drum-265 lbs. (6.6 gallon capacity).

POWER

Engine 4-cycle, 3 hp industrial with 6:1 gear reduction, dual air cleaner, with rotary on-off switch, low tone muffler.
Clutch Belt tightener.
Driver Primary: V-belt 4L-section to clutch idler. Secondary: #40 roller chain to tine assembly. Transport: #40 roller chain to barrel.

Lubrication Two grease fittings in each axle hub.

UNIT

Penetration Up to 2 3/4"
Aeration Pattern 3 3/4" x 7" center to center.
Speed Operation: 225 f.p.m.
Transport: 190 f.p.m.
Productivity Up to 21,000 sq. ft. per hour.
Tines 3/4" Coring-type, formed from .08" thick heat-treated alloy steel, 30 tines per aerator.
Tires Two 8 x 1.75 semi-pneumatic with ball bearings.

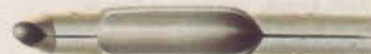
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Tine Replacement Part #522361



PRODUCTS

(continued from page 56)

allows fertilizers and chemicals to be sprayed separately or as a mix. It permits selective use of expensive chemicals in lawn areas that require spot treatment. Fertilizer can be sprayed from the 300-gallon capacity poly "loaf" tank that is designed to fit 3/4- or 1/2-ton standard pickup trucks.

Bypass agitation keeps product in agitation. A 12-volt mechanical agitator is optional. Separate poly tanks (12-gallon capacity) can be used for spraying herbicides, insecticides, soil conditioners, or other lawn treatment agents. The spray system, called the Model LCI Lawn Care Injection system, mixes chemicals with the fertilizer at the point of application using a dual line injection hose and spray gun. The hose and gun can be used for high and low volume spraying.

It features a ChemLawn gun. Single or dual injection pumping is possible. The spray system includes a 12-volt demand pump with variable speed control. It has a pumping capacity up to 2.8 gpm. A 12-volt electric Hannay reel system provides convenient rewinding. ■

Circle 154 on reader card

AD INDEX

Agro-Chem.....	21	Mobay Chemical.....	2
Agri-Fab.....	49	Olathe Manufacturing.....	41
Bush and Cook.....	48	Nepera.....	60
Classen.....	52	Nice 'N Green Plant Food.....	41
Cushman/Ryan.....	57	Nor-Am.....	4.5
D.B. Smith.....	15	Olathe Manufacturing.....	10
Dedoes.....	47	Perma-Green Supreme.....	51
Dow Chemical.....	62,63	Pickseed West.....	7
E.J. Crane.....	16	Practical Solutions.....	51
Earthway.....	29	Quintessence Company.....	46
Encap Products.....	18	Rainbow Computers.....	22
Frankco.....	47	Regal Chemical.....	55
Fumigation Services.....	20	Ringer Corp.....	48
Green Touch.....	56	Salsco.....	59
Hahn.....	17	Southern Mill Creek.....	61
Hi-Tech.....	18	Spring Valley.....	19
Idea Bank.....	31	Strong Manufacturing.....	22
Imler.....	16	Terra Care.....	20
Jacklin Seed.....	30	Trebor.....	23
Jonathan Green.....	37	Tuflex.....	14
Lawn Masters.....	36	Union Carbide.....	8.9
LESCO.....	25,64	Walker.....	49
Liqui-Land.....	46		

COMING NEXT MONTH

In August, we will bring you a report on servicing condominiums. In many parts of the country, condo construction has outstripped single dwelling home construction by more than two to one. That means lawn care businessmen had better take advantage of the condo boom. We will also have reports on software packages and service rates.

CONTRIBUTING TECHNICAL AUTHORS

T. Abernethy, Ohio State University
James Beard, Texas A&M University
Prasanta C. Bhowmik, University of Mass.
Don Blasingame, Mississippi State University
Jacqueline Boucher, Ohio State University
Bruce Branham, Michigan State University
Cynthia L. Brown, Tru-Green Corporation
Edward A. Brown, University of Georgia
Stephen Brown, Village Green, Inc.
Nick E. Christlans, Iowa State University
Patricia P. Cobb, Auburn University
H.L. Cromroy, University of Florida
Karl Danneberger, Michigan State University
Peter H. Dernoeden, University of Maryland
Glenn Dudderar, Michigan State University
Gary A. Dunn, Michigan State University
Thomas W. Fermanian, University of Illinois
Melissa Craven Fowler, Cornell University
Ray Freeborg, Purdue University
T.E. Freeman, University of Florida
Stephen G. Fushtey, Agriculture Canada
Robert Green, Oklahoma State University
Jean E. Haley, University of Illinois
John R. Hall, Virginia Polytechnic Inst.
Marc C. Hirrel, University of Illinois
Clinton F. Hodges, Iowa State University
Richard J. Hull, University of Rhode Island
Norman W. Hummel, Jr., Cornell University
Noel Jackson, University of Rhode Island
John A. Jagschitz, University of Rhode Island
B.J. Johnson, University of Georgia
Keith Karnok, University of Georgia
John E. Kaufmann, Monsanto Ag Company
Keith Kennedy, ChemLawn Corporation
James E. King, Purdue University
E.L. Knake, University of Illinois
K.N. Kombias, Louisiana State University
Lauren S. Lanphear, Forest Tree Protection

Philip Larsen, Ohio State University
Leon T. Lucas, North Carolina State University
Eugene W. Mayer, O.M. Scott and Sons
M.T. McElroy, Michigan State University
M.D. McGlamery, University of Illinois
Michael C. McKee, New England Green, Inc.
Landon C. Miller, Clemson University
William Mitchell, University of Delaware
James Nau, Ball Seed Company
Harry D. Niemczyk, Ohio State University
A.D. Oliver, Louisiana State University
Robert E. Partyka, Chemscape
Sandra Perry, Tru Green Corporation
A. Martin Petrovic, Cornell University
Daniel Potter, University of Kentucky
C.C. Powell, Ohio State University
Richard C. Rathjens, Davey Tree Expert Co.
Elliot C. Roberts, The Lawn Institute
W.H. Robinson, Virginia Polytech Inst.
Patricia L. Sanders, Penn State University
Wayne Scheppelo, Deere and Company
E. (Dick) Schmidt, Virginia Polytech Inst.
Mark Sears, University of Guelph
D.E. Short, University of Florida
John F. Shoulders, Virginia Polytech Inst.
Malcolm Shurtliff, University of Illinois
Richard Smiley, Cornell University
Elton M. Smith, Ohio State University
Jana S. Stewart, University of Wisconsin
John R. Street, Ohio State University
Herbert T. Strou, Rutgers University
J.H. Strong, Strong Enterprises
Mike Tolley, Ohio State University
J.R. Vaccaro, Dow Chemical Company
Joseph M. Vargas, Michigan State University
T.L. Watschke, Penn State University
Gayle L. Worf, University of Wisconsin

Richard J.W. Foster
 Publisher

Maureen Mertz
 Associate Publisher

Tim Weldner
 Managing Editor

Vivian Rose
Julie November
 Assistant Editors

Charlotte Goerss
 Art Director

Fran Franzak
 Reader Service

Rosalie Slusher
 Circulation Manager

ALA
4012 Bridge Avenue
Cleveland, Ohio 44113
216/961-4130
 Editorial Office

Maureen Mertz—Sales Manager
42480 Park Ridge Road
Novi, MI 48050
313/348-9636
 Advertising Office

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Circle 51 on reader service card

INDUSTRIAL WEED CONTROL

(continued from page 44)

ment, including the spray guns.

Mitchell is aware of the liability associated with industrial weed control and he makes sure his applicators don't get themselves in over their heads. "If I feel they don't really know exactly how to handle a certain situation, then I will go do it myself." Mitchell says all of his accounts are commercial and they carry a considerable risk of exposure. To cover the risk, his company carries \$1.5 million in umbrella liability insurance.

CONCLUSION. A considerable amount of risk is associated with industrial weed control, but the business is lucrative enough that people like Burt Andrews have made a career out of it. The cost of weed control materials is high, many times higher than the cost of most lawn care chemicals, but the necessity of the service makes it attractive to customers regardless of the cost. So if you are willing to ask a price high enough to cover the material costs and exposure risks, you can turn industrial weed control into a profitable add-on service. — *Tim Weidner*

The author is Managing Editor of ALA magazine.

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Gordon LaFontaine is President of Lawn Equipment Corporation, Novi, Michigan. Dr. William Meyer is President of Pure-Seed Testing, Inc., Hubbard, Oregon. Des Rice is president of The Weed Man, Ltd., Mississauga, Ontario, Canada. Dr. Al Turgeon is Professor and Head of the Department of Agronomy, Pennsylvania State University. Dr. Joseph Vargas is Professor of Botany and Plant Pathology, Michigan State University, East Lansing, Michigan. Dr. Patricia Vittum is Assistant Professor of Entomology, University of Massachusetts, Waltham, Massachusetts.

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200-Gallon Pickup Mount	020050	1985.00 ea.
100-Gallon w/out Reel and Hose	009186	1380.00 ea.

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Item	LESCO No.	Price
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