

Basagran cleared for yellow nutsedge control

Basagran herbicide, a product of BASF Wyandotte Corp., Parsippany, N.J. has been cleared for use on turf in all states, the company announced last month.

The product, having undergone extensive testing over the past three years, has "been noted for its effectiveness on yellow nutsedge in turf," according to Hans Loose, a product manager for BASF.

The main prospects for Basagran on turf are lawn care businessmen who service residential or commercial/industrial customers, Loose said. Tests show that all major varieties of turf are tolerant to the herbicide. Basagran is a contact herbicide that should be applied when the yellow nutsedge is actively growing.

NEW YORK

Businessmen told to make industry needs known to government

Government officials need a better definition of the turf industry so that dollars can be allocated for research and other needs, and it is up to lawn care and landscape maintenance businessmen to organize and compile concrete evidence on the size of the industry.

That's what New York cooperative extension agent Tom Corell told the 600 turf managers in attendance at last month's Professional Turf and Landscape Conference in Nyack, N.Y.

"Landscape maintenance needs are not being met, and we need the figures to back us up with state legislatures," Corell said. A recent survey of Nassau and Suffolk counties showed gross lawn care revenues at more than \$138 million, he said.

Homeowner expectations, financial management, program development discussed in Virginia

A lineup of seven lawn care speakers highlighted the 19th Annual Virginia Turfgrass Conference in late January at Colonial Williamsburg.

Topics discussed included homeowner expectations, what a lawn service company can provide, timing of fungicide applications for effective disease control, critical management practices for lawns, developing timely, effective and flexible customer programs, financial management concepts, and effective advertising, promo-

tion and marketing for a lawn care business.

Gus C. Constantino, president of Wilson Feed Co., Richmond, was re-elected president of the Virginia Turfgrass Council. Attendance was 350, and standing-room-only crowds packed the lawn care sessions.

Virginia extension agent Charles L. Hall told the lawn care audience that the individual homeowner needs to be given information on what he has to do to help maintain his lawn, in addition to lawn care services.

"But don't expect too much from the homeowner in the way of watering and proper mowing, because if he has a bad lawn, he

to page 25

HOUSTON

ALCA elects officers; Thornton president

Bill Thornton, Jr., of Thornton Environmental Industries, Cincinnati, was elected president of the Associated Landscape Contractors of America at its annual meeting last month in Houston.

Almost 700 persons attended the annual meeting, a highlight of which was a lawn care specialty session on the last day of the show. Speakers were John Latting, Professional Turf Specialties and Lawn Groomer, Bloomington, Ill.; Bob Earley, editor of LAWN CARE INDUSTRY; and Larry Brandt, Spray-A-Lawn, Inc., Cincinnati, a division of Thornton Environmental Industries. Erv Denig,

to page 36

LCI SURVEY

Average lawn care businessman owns four spray tank trucks

A recent survey conducted by LAWN CARE INDUSTRY reports that the average lawn care businessman owns almost four vehicles with liquid application tanks.

In the survey, 54.7 percent of the respondents indicated they owned vehicles with liquid application tanks. The actual average inventory was 3.5.

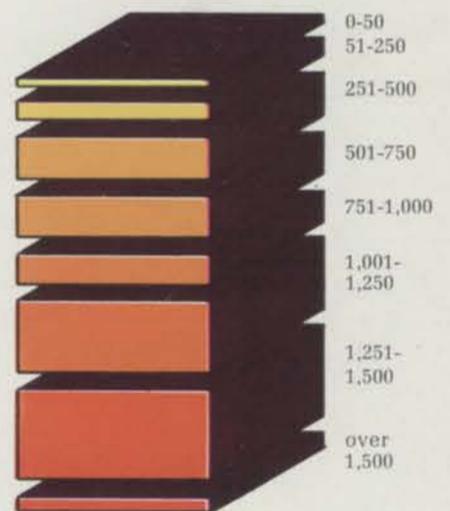
In the same survey, 70.3 percent of the respondents said they owned an average of 3.9 granular applicators. Other equipment, percentage of responses and averages included: pickup trucks, 81.9 percent, 2.8 average inventory; seeders, 56.9 percent, 2.4 average inventory; aerators, 40.1 percent, 2.0 average inventory; dethatchers, 44.8 percent, 1.8 average inventory.

Of the respondents who said they owned vehicles with liquid application tanks, here is a breakdown of tank capacity in gallons, and percentage of tanks in that range: 0-50 gallons, 3.4 percent; 51-250 gallons, 29.2 percent; 251-500 gallons, 23.3 percent; 501-750 gallons, 8.9 percent; 751-1,000 gallons, 13.6 percent; 1,001-1,250 gallons, 14.0 percent;

1,251-1,500 gallons, 5.1 percent; and over 1,500 gallons, 2.5 percent.

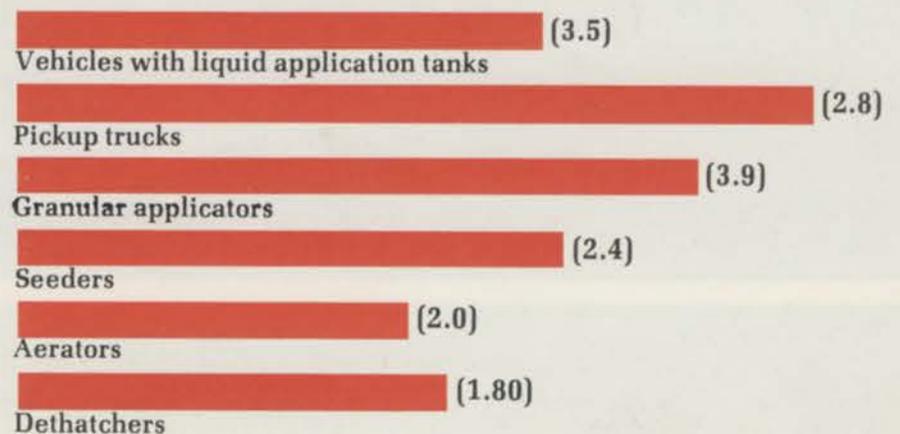
LAWN CARE INDUSTRY market research manager Clarence Arnold said the survey results are based on a 24.4 percent response rate to 1,000 questionnaires mailed to readers of the magazine last year.

Tank capacity in gallons



Equipment

() Average Inventory



QUICK STARTS

AgriCo ready to supply the market page 4
 "Schlock" operators hit..... page 4
 Daconil labeled for anthracnose in Michigan page 4
 Cushman-Ryan honors "quota busters"..... page 8
 Lawn insects and their control page 9
 Survey shows 2.2% of revenues spent on ads..... page 18
 MEMOS 4
 NEWSMAKERS 7
 MEETING DATES 8
 TOOLS, TIPS & TECHNIQUES 9
 COST CUTTINGS 17
 MARKETING IDEA FILE 18
 MONEYWISE 34
 PRODUCTS 38

For a complete market study of the lawn care industry in Atlanta, see series of indepth business thrives. n care customers, y go about getting

MI 48824 EAST LANSING 9078 SCI 8LDB 209 SCI 8LDB MICHIGAN STATE UNIV DR PAUL RIEKE EDIT-378- REP263322-NS- RE

Diazinon is labeled for How many will you

Diazinon[®] not only controls,
but is labeled for more turf insects
than any other turf insecticide.

Just take a look, it's the biggest

label in the business.

You'll count 24 turf insects in
all. Including white grubs, sod
webworms, cutworms, chinch bugs,



every insect on this page. face this season?

armyworms and ants.

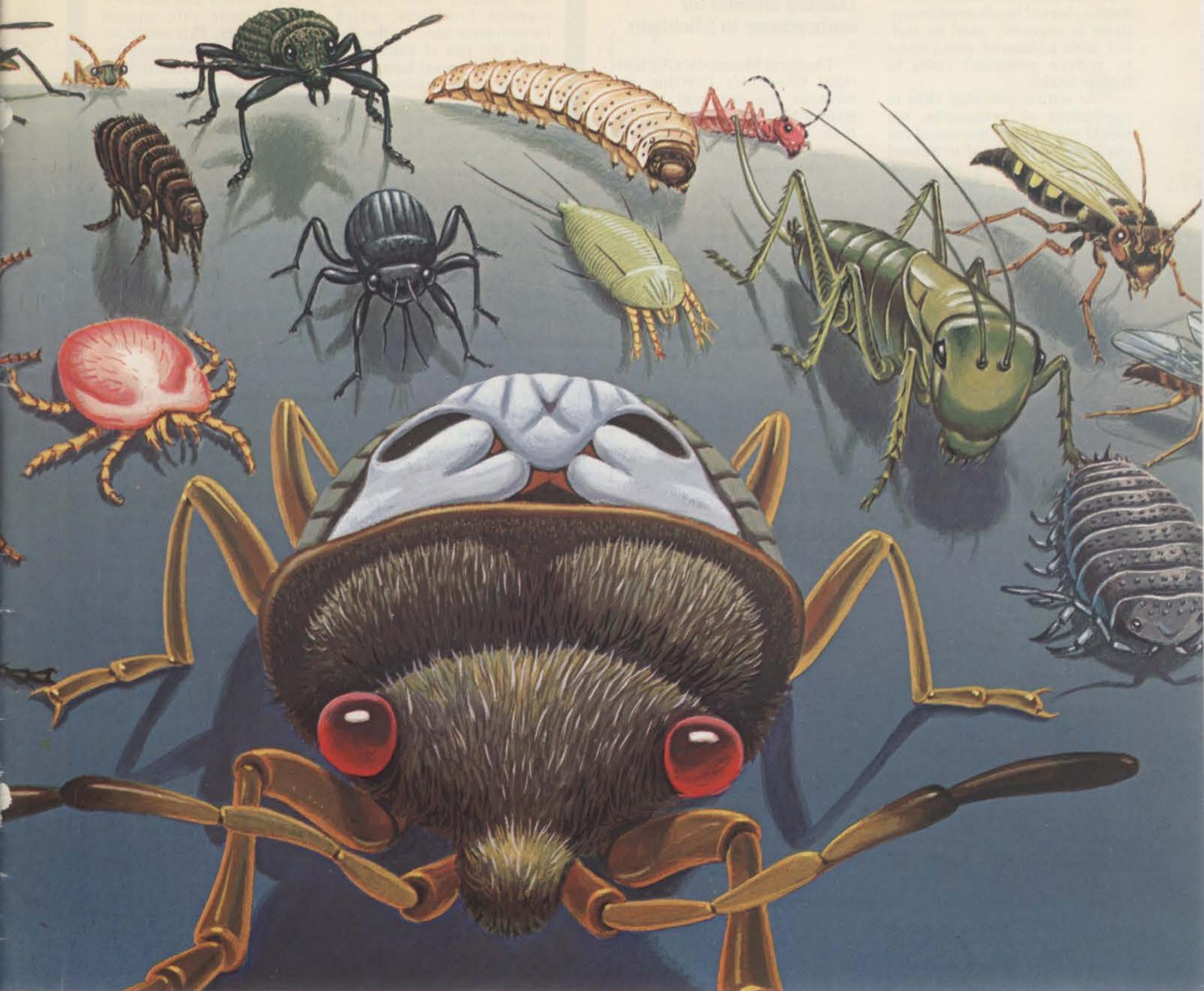
This season, be sure to ask your local supplier for Diazinon.

And put the biggest label in the

business to work for you.

Ciba-Geigy, Ag. Div., Box 11422, Greensboro, NC 27409

Diazinon by CIBA-GEIGY
The biggest label in the business.



CIBA-GEIGY

Wisconsin Marine builds new plant

Wisconsin Marine, Inc., manufacturers of a complete line of Bob Cat trade name commercial lawn mowers, recently began construction of a 100,000-square-foot manufacturing plant in Lake Mills, Wis.

The plant will consolidate manufacturing operations presently taking place in three separate locations. The company expects to release a new riding mower within the next few months. The unit is undergoing field testing at present.

HERBICIDES

EPA allows use of pronamide on turf

The federal Environmental Protection Agency (EPA) has proposed that uses of the herbicide pronamide — marketed as Kerb — would be allowed to continue as currently used on turf, but with additional precautions to reduce potential risks to human health.

"To reduce potential risks to applicators of pronamide, we would require that the use of the pesticide be restricted to trained applicators wearing protective clothing, and that it be marketed only in water-soluble packaging to keep down dust emissions when mixing," EPA assistant administrator Steven D. Jellinek said.

Pronamide is used primarily for *Poa annua* and other weed control on southern turfs. It is marketed by Rohm & Haas Co., Philadelphia.

EQUIPMENT

Slight growth projected for power equipment

An overall one percent unit growth in selected industry shipments for the 1979 model year has been projected by participating companies of the Outdoor Power Equipment Institute.

Unit shipments of walk-behind power mowers are projected to increase by two percent to 5.51 million units while a slight decline of .5 percent to 746,000 units is seen for lawn tractors and riding mowers.

FUNGICIDES

Daconil cleared for anthracnose in Michigan

Diamond Shamrock's Agricultural Chemicals Division announces the approval by the state of Michigan for the application of Daconil 2187 W-75 fungicide to turf for the control of anthracnose.

A supplemental label for "Application to Turf for Control of Anthracnose" can be obtained by writing the company at 1100 Superior Ave., Cleveland, Ohio 44114.

LAWN CARE INDUSTRY

Publishing Director: **RICHARD J. W. FOSTER**
 Executive and editorial offices: 9800 Detroit Ave., Cleveland, Ohio 44102
 Editor: **ROBERT EARLEY** Executive Editor: **DAVID J. SLAYBAUGH**
 Associate Editor: **BRUCE SHANK**
 Technical Editor: **RON MORRIS**
 Assistant Editor: **DAN MORELAND**
 Graphic Director: **RAYMOND GIBSON**
 Research Services: **CLARENCE ARNOLD**
 Advertising Production Manager: **PATRICIA KELLEY**

MARKETING/SALES

Circulation & List Rental: **TERRI HUTSENPILLER** (216) 651-5500
 Marketing & Merchandising Services: **FRAN FRANZAK** (216) 651-5500
 New York Office: **BRIAN HARRIS** (212) 421-1350
 757 Third Avenue, New York, N.Y. 10017
 Midwest Office: **JOE GUARISE** (312) 236-9425
 333 N. Michigan Ave., Chicago, Illinois 60601
 Southern Office: **DICK GORE** (404) 252-4311
 3186 Frontenac Court, N.E., Atlanta, Ga. 30319
 Northwest Office: **BOB MIEROW** (206) 363-2864
 1333 N.W. Norcross, Seattle, WA 98177
 Classified: **DOROTHY LOWE** (216) 651-5500
 9800 Detroit Ave., Cleveland, Ohio 44102



LAWN CARE INDUSTRY is published every month by The Harvest Publishing Company, a subsidiary of Harcourt Brace Jovanovich, Inc. at 9800 Detroit Ave., Cleveland, Ohio 44102 (216) 651-5500. Copyright © 1979 by The Harvest Publishing Company. All rights reserved. The contents of this publication may not be reproduced either in whole or in part without consent of copyright owner. Controlled circulation postage paid at Cleveland, Ohio.

SUBSCRIPTIONS: to Lawn Care Industry are solicited only from owners, managers, operators, buyers, merchandisers, agronomists, technicians, dealers, distributors and manufacturers of products associated with the lawn care and maintenance business. Position and company connection must be indicated on subscription orders. Publisher reserves the right to approve all subscription requests. Single copy cost \$1.00 for current issue. All back issues \$1.25 each. Foreign \$1.25. Subscription rates: \$10.00 one year, \$18.00 two years, \$23.00 three years. Group and foreign air mail rates available on request.

SUBSCRIBERS: Send change-of-address notices, correspondence regarding subscription service to Fulfillment Manager, Lawn Care Industry, 9800 Detroit Ave., Cleveland, Ohio 44102. Change of Address notices should be sent promptly, provide old as well as new address, attach address label from recent issue. Please allow one month for change of address to become effective.

POSTMASTER: Please send form 3579 to Fulfillment Manager, Lawn Care Industry, 9800 Detroit Ave., Cleveland, Ohio 44102.

The Harvest Publishing Company, a subsidiary of Harcourt Brace Jovanovich, Inc., publishers of WEEDS TREES & TURF, PEST CONTROL, NPCA Extra, GOLF BUSINESS and the Scientific Guide to Pest Control Operations.

MEMOS

Maryland, you have to be tough: Last year, the heat went out in the exhibit and conference hall for the Maryland Turfgrass '78, and exhibitors and attendees alike shivered their way through. This year, they moved the event to Baltimore, and were hit with a problem of another sort — at 5:00 a.m. on the last day of the show, just about all of the attendees were routed from their hotel rooms when the Baltimore Hilton was hit with a fire. Dr. Charles Darrah of the University of Maryland and the rest of the conference planners have their fingers crossed for next year.

Single-family homes: According to a recent survey conducted by Fred Andresen, ventures manager for Ciba-Geigy Corp., Greensboro, N.C., there are about 42 million single family homes in the United States. He said that about 12 million of these homes are above the median household income in their respective regions, which differs from one metropolitan area to another.

Agrico ready to supply the market: According to Ted Black, northeastern manager of market development for Agrico Chemical Co., Wilmington, Del., there exists a good opportunity for his company to supply the complete fertilizer used by lawn care businessmen on customer lawns.

Black told LAWN CARE INDUSTRY recently: "In our Northeast region, for example, we have 26 company-owned and operated Farm Centers, which produce and sell dry-blended fertilizers, which can be made into custom formulations used by the lawn care industry. This would include the use of nitroform urea, which is a necessary ingredient of a good lawn formulation. We are also distributors for the major herbicides and insecticides, and these are available, or can be made available, at the Farm Centers."

He said that most of Agrico's Farm Centers are not that far from the metropolitan areas of the Northeast, and that a lawn care businessman could economically afford to pick up his fertilizers and pesticides at these locations.

He also said that Agrico has a patented process for manufacturing fluid blend fertilizer, which can be used successfully in the lawn care industry. His address is P.O. Box 7013, Wilmington, Del. 19803. Phone is 302-478-4504.

Unemployment insurance: Jobless payments are going to many unqualified persons, a recent study suggests. Overcharges for state unemployment insurance is a "major corporate illness," says PCS Reports, New York, which studied 1,500 claimant files at 45 New York workplaces. Many lawn care businessmen across the country might agree.

The conclusion: state governments are charging for many unwarranted claims, and employers are paying nearly 40 percent more than necessary for jobless insurance. PCS doesn't attribute the overpayments to outright fraud, but to administrative complexities that impede clear communications between employers and state officials.

Chemical to mowing/maintenance: Many mowing/maintenance firms have traditionally gone to chemical lawn care to expand their operations, but there is also a trend for chemical lawn care only firms going into mowing/maintenance. The reason: Many commercial/industrial accounts only want to deal with one firm for their landscape maintenance needs.

Says Ed Wolf, owner of Mr. Lawncare, Cleveland: "I've got the commercial/industrial accounts now, but I am going to lose them if I can't offer them full maintenance. So I've got to provide a full program." Other examples of chemical lawn care companies that have expanded to full-service maintenance are American Lawn Service, Milwaukee, and some A-Perm-O-Green Lawns, Inc. franchises in Texas.

He meant hand mowers: In the January Marketplace feature on Miami in LAWN CARE INDUSTRY, Vic Nocera of Leisure Landscape of South Florida was quoted as saying "if the engine goes down, it's cheaper to replace the whole mower than try to replace the engine." He was referring to his hand mowers only, not his riding mowers. And he still laments the fact that no mower on the market can give him more than three months service.

"Schlock" operators: Another lawn care businessman doing some lamenting is Charles Racusin of Environmental Landscape Services, Inc., Houston. His beef is what he calls "schlock" operators, who bid low and get a job, and then figure out how to staff it later, if at all. "We take on these jobs halfway through the season," he told LAWN CARE INDUSTRY, "and we have to double what the other guy was charging to do the job right. Then the account expects miracles, and miracles are hard to come by."

LAWN CARE INDUSTRY READER SERVICE CARD— MARCH 1979.(expires in 90 days)

Use this prepaid reader service card to get additional information on products or services mentioned in this issue (Card must be completed before processing)

NAME _____ TITLE _____

COMPANY _____

BUSINESS ADDRESS _____

CITY _____ STATE _____ ZIP _____

If you would like a subscription to LAWN CARE INDUSTRY circle number 101. Subscription cost is \$10.00 per year.

To help us better service you editorially, please answer the following:

1. Are you primarily involved in.

- Chemical lawn care and maintenance services
- Chemical application only
- Mowing and other maintenance services
- Other (specify) _____

Application

- Liquid
- Granular
- Both

2. Is your business location:

- Headquarters
- Branch office

3. Is your business:

- Independent
- Chain
- Franchise
- Other (specify) _____

4. Title:

- President
- Owner
- Manager
- Technician
- Other (specify) _____

5. Number of accounts:

- Less than 500
- 500-1,000
- 1,001-5,000
- 5,001-10,000
- 10,001-25,000
- 25,000 or more

6. Estimated annual sales volume:

- Less than \$50,000
- \$50,001-100,000
- \$100,001-250,000
- \$250,001-500,000
- \$500,001-1,000,000
- \$1,000,000 or more

Please send product information only on items circled

Please have a salesman call me about items circled. Best time to call me is _____ or _____

SIGNATURE _____ DATE _____

CIRCLE THE ITEM NUMBERS FOR FREE DETAILS ON PRODUCTS AND SERVICES

101 102 103 104 105 106 107 108 109 110 111 112 113 114 115 116 117 118 119 120
 121 122 123 124 125 126 127 128 129 130 131 132 133 134 135 136 137 138 139 140
 141 142 143 144 145 146 147 148 149 150 151 152 153 154 155 156 157 158 159 160
 161 162 163 164 165 166 167 168 169 170 171 172 173 174 175 176 177 178 179 180
 181 182 183 184 185 186 187 188 189 190 191 192 193 194 195 196 197 198 199 200
 201 202 203 204 205 206 207 208 209 210 211 212 213 214 215 216 217 218 219 220
 221 222 223 224 225 226 227 228 229 230 231 232 233 234 235 236 237 238 239 240
 241 242 243 244 245 246 247 248 249 250 251 252 253 254 255 256 257 258 259 260
 261 262 263 264 265 266 267 268 269 270 271 272 273 274 275 276 277 278 279 280



NO POSTAGE
NECESSARY
IF MAILED
IN THE
UNITED STATES

BUSINESS REPLY MAIL
 FIRST CLASS PERMIT NO. 2675 CLEVELAND, OHIO

POSTAGE WILL BE PAID BY ADDRESSEE

ATTENTION: THE EDITORS
LAWN CARE INDUSTRY
 9800 Detroit Ave.
 Cleveland, Ohio 44102





NO POSTAGE
NECESSARY
IF MAILED
IN THE
UNITED STATES

BUSINESS REPLY MAIL
FIRST CLASS PERMIT NO. 665 DULUTH, MINN

POSTAGE WILL BE PAID BY ADDRESSEE



LAWN CARE INDUSTRY

P.O. BOX 6136

DULUTH, MINNESOTA 55806

Editor's Information Card . . . HELP US TO HELP YOU

The editors of LAWN CARE INDUSTRY would appreciate your comments on the magazine's contents. Please write your message below, tear out the card, and mail. Postage is prepaid.

Which article in this issue did you find the most interesting and/or helpful? _____

What subjects would you like us to cover in future issues of LAWN CARE INDUSTRY?

NAME _____ TITLE _____

COMPANY _____

ADDRESS _____

B CITY _____ STATE _____ ZIP _____



RON GIFFEN

"a BIG man in a BIG industry"

if you are a Lawn Applicator

I want to see you

"Yes, I want to see you about Lescosan 4E (Betasan*) emulsion and why it is out-selling other pre-emergence crabgrass controls. I want to tell you how you can save by buying direct from the formulator, and all about its full-season control. Lescosan is very effective on all grasses and many ornamentals and ground covers. We can also supply it in 12.5 or 3.6 granules.

"I also want to tell you about the other fine **LESCO PRODUCTS**, including **LESCO Thirty-Six Sulfur-Coated Urea**.

"Call me on my toll-free wats line (1-800-321-5951) or write to me and I'll be in touch with you immediately. There is no obligation, of course."

Ron Giffen

*(Betasan—registered TM of the Stauffer Chemical Company.)

LESCO PRODUCTS

Div. Lakeshore Equipment & Supply Co
300 S. Abbe Road
Elyria, Ohio 44035

A Family of Fine Products:

Lescosan 12.5G — Lescorene — Lesco 4 — Lescobor — Lescopar — Lescopex — Lesco Non-Selective Herbicide
Lesco MSMA — Lesco Thiram 75W — Lescozyme — Lakeshore Chinch Bug & Sod Webworm Control

New Controlled-Release, Non-Burning Liquid Nitrogen for Lawn Applications.

Ashland®

SLO-Release

LIQUID FERTILIZER

If you'd like to find a liquid nitrogen source that offers convenience in handling and blending, as well as improved performance over dry products, the new SLO-RELEASE products from Ashland Chemical could be your answer.

SLO-Release 25 is a clear liquid 26% organic nitrogen solution with excellent non-burning characteristics.

SLO-Release 25 lets you: Apply any time during the growing season and be assured of non-burning, controlled-release feeding.* Expect complete nitrogen utilization during one growing season.*

SLO-Release 25 blends easily with insecticides, herbicides, and P and K.

There are more good reasons why you should test SLO-RELEASE 25 and our other SLO-RELEASE products this spring.

*When applied at normally acceptable nitrogen rates.

Just fill in the coupon and mail it to
Chemical Systems Division, P.O.
Box 2219, Columbus, OH 43216.

Yes, I'm interested in your SLO-RELEASE products.
 Send Technical Literature. Have your salesman call.

Name _____

Title _____

Company _____

Address _____

City _____ State _____ Zip _____

Phone Number (_____) _____



Ashland
Ashland Chemical Company
DIVISION OF ASHLAND OIL, INC.

NEWSMAKERS

Tom Smith has been hired as a specialist in turfgrass management for **Michigan State University**.

Kevin Mathias, former branch manager for the **Hydro Lawns** branch in Springfield, Va., has accepted a research position at the **University of Maryland**. Hydro Lawns is based in Gaithersburg, Md.



Mathias



Rackley

Diamond Shamrock Corp.'s Agricultural Chemicals Division, Cleveland, has named Anderson Rackley as sales supervisor for eastern Georgia and South Carolina. He had previously been employed for **BASF Wyandotte Corp.**, Parsippany, N.J., and **Union Carbide Corp.**'s Agricultural Products Corp., Jacksonville, Fla.

Diamond Shamrock Corp. has also named Dr. Dan R. Harlow to fill its newly created position of manager of regulatory affairs.

New appointments have been announced in the agricultural marketing division of **Allied Chemical Corp.**, Houston. John C. Thieman has been named director of product development and marketing. M. G. Warthan has been named director of product management. I. Swisher has been appointed director of distribution and E. D. Keller has been named director of national accounts. The company this year is beginning marketing of fertilizers to the lawn care industry.

Richard L. Gilliland, has left his post as executive vice president of the **National Fertilizer Solutions Association**, Peoria, Ill. Dave Murray is interim executive vice president.

Bob Cohen, president of **The Green Scene**, Los Angeles, has opened a second branch in Santa Monica, Calif.

J. Martin Erbaugh, president of **Lawnmark, Inc.**, Peninsula, Ohio, announces that the company will be opening lawn care branches in Cleveland/Akron, Rochester, N.Y., and Milwaukee this month.

Gordon Ober, general manager of **Davey Lawncare Service**, Kent, Ohio, announces that the company will be opening two new branch offices in their Cleveland and Detroit locations. The company has lawn care branches in eight midwestern cities.

Dick Bailey, president and general manager of **Turf-Seed, Inc.**, Hubbard, Ore., has left that company, and will most likely go into business for himself.

John R. Wittpenn, president of **Rockland Chemical Co.**, West Caldwell, N.J., was elected president of the **New Jersey Turfgrass Association** at its recent annual meeting.

Arthur V. Edwards, former

publisher of **WEEDS TREES & TURF** magazine, has joined **FMC's Agricultural Chemical Group** as public relations manager. The company is based in Philadelphia.

Al Herbster of the **University of Chicago**, was elected president of the Illinois Turfgrass Foundation at its recent annual meeting. Members of the board of directors include: Bob Bethel, **Little Wheels Turf & Equipment**; John Latting, **Professional Turf Specialties and Lawn Groomer**, Bloomington, Ill.; Duane Hobbs, **Du Pont Co.**, Wilmington, Del.; Charles McGinty, **McGinty Brothers, Inc.**, Long Grove, Ill.; and Rick White, **Village Green, Ltd.**, West Chicago, Ill.



Herbster



Welfet

David Welfet has been named product manager of the Turf Equipment Div. of **Excel Industries, Inc.**, Hesston, Kan. He will be responsible for the identification and development of new products in the division. In addition, he is communications director for all marketing and product bulletins, as well as newsletters to distributors and owners of Hustler mowers. He has been working in the turf and landscaping field since graduating from **Kansas State University** in 1974 with a B.S. degree in horticulture.

Dave Lee has been named sales manager for **Sensation Mfg. Co.**, Omaha. Company president Carl Johnson announced the appointment.

Frank Stevens, president of **Pro-Lawn Plus, Inc.**, Baltimore,

has been named to the board of directors of the **Maryland Turfgrass Council**.

Carl Ofsik, **ChemLawn Corp.**, branch manager in Fairfield, N.J., has moved to a newly opened branch in Upper Saddle River, N.J. Mike Nichols moves from Chicago to the Fairfield branch. Lawn technician Ted Obara has moved from the Fairfield branch to the Hartford, Conn. branch. Rich Anda, former regional agronomist for ChemLawn, moves to a Chicago branch as branch manager.

Greenview Lawn & Garden Products, a division of **Lebanon Chemical Corp.**, Lebanon, Pa. has expanded its organization. Mike Horgan has been promoted to national sales manager with these new district sales managers: Craig Crouse, Bob Moore, Ed Leva and Bert Sampson.

Ron E. Burkland has been named district sales manager for **OMC-Lincoln's Cushman** and



Burkland

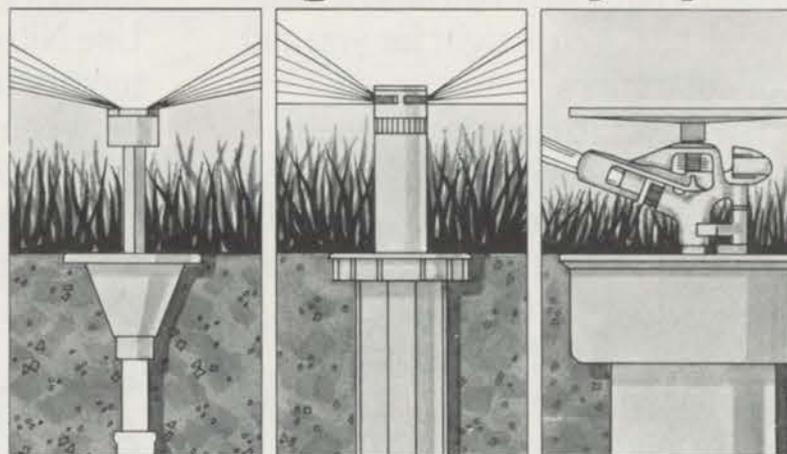


Kujawa

Ryan professional grounds maintenance equipment. His territory will include Colorado, Idaho, Kansas, Nebraska, North and South Dakota, Wyoming, Montana, Utah and eastern Nevada. The company is based in Lincoln, Neb.

Irrigation, Inc. a newly formed subsidiary of **Kujawa Enterprises, Inc.**, Cudahy, Wis., has recently been appointed franchised turf distributor for **Rain Bird Sprinkler Mfg. Corp.**, Glendora, Calif. Ron Kujawa is president of Kujawa Enterprises, Inc.

The taller the grass ...the higher we pop!



From residential to light commercial turf installations, Champion has a pop-up to do the job! When you compare the cost, precision construction and performance, you'll buy Champion. The 18HP (2" pop-up), the P180 (2½" pop-up) and the 6178 Impulse pop-up are just three of over one-hundred fifty sprinklers,

valves, controllers and accessories featured in the new Champion, full-color catalog. Ask for your free copy.

CHAMPION
SPRINKLER EQUIPMENT

1460 N. Naud St.
Los Angeles, CA 90012
(213) 221-2108/(213) 223-1545

Circle 126 on free information card

WATER PENETRATION

AQUA-GRO®

THE KEY
TO MORE SUCCESSFUL
GROUNDS MAINTENANCE

REDUCED WATERING • FASTER RESPONSE TO FERTILIZATION AND PESTICIDE CONTROL
• REDUCED LABOR COSTS • ELIMINATE PUDDLES AND DRY SPOTS • REDUCED PROBLEMS WITH THATCH • HEALTHIER AND HEARTIER TURF.



Shallow rooted turf, poor moisture distribution from area not treated with Aqua-Gro amended water.



Deep rooted turf, good moisture distribution from area treated with Aqua-Gro amended water.

Aqua-Gro is available in liquid concentrate or spreadable granular.
For additional information write to:

AQUATROLS CORPORATION OF AMERICA

1432 Union Ave. Pennsauken, New Jersey 08110 (609) 665-1130

Circle 118 on free information card

MEETING DATES

Midwest Turf Conference, Purdue University, West Lafayette, Ind., March 12-14. Contact: Dr. William H. Daniel, Department of Agronomy, 2-443 Lilly Hall, West Lafayette, Ind. 47907, 317-749-2891.

Northcentral Pennsylvania Turf School, Smethport Country Club, Smethport, Pa., March 20. Contact: Clarence E. Craver, Court House, Smethport, Pa. 16749.

Landscape Maintenance Short Course, Mecklenburg County Agricultural Center, Charlotte, N.C., March 20-21. Contact: M.A. Powell, North Carolina State University, Kilgore Hall, Raleigh, N.C. 27607.

Maine Turf Conference, March 21-22. Contact: Dr. Vaughn Holyoke, Deering Hall, University of Maine, Orono, Maine 04473.

First Annual Meeting of the Lawn and Garden Manufacturers Association, Sheraton O'Hare Hotel, Chicago, April 8-10. Contact: Stuart Greenblatt, LAGMA, One Illinois Center, 111 E. Wacker Dr., Chicago, Ill. 60601, 312-644-6610.

33rd Annual Southeastern Turfgrass Conference, Georgia Coastal Plains Station and Rural Development Center, Tifton, Ga., April 9-10. Contact: Clara Wheeler, P.O. Box 748, Tifton, Ga. 31794.

Southern California Turf and Landscape Institute, Convention Center, Anaheim, April 18-19. Contact: Ed McNeill, 1000 Concha St., Altadena, Calif. 91001, 213-798-1715.

Arizona Turfgrass Conference, Tucson, Ariz., May 9-10. Contact: Dr. W. R. Kneebone, Professor of Plant Sciences, University of Arizona, Tucson, Ariz. 85721.

Symposium on Turfgrass Diseases, sponsored by Ohio State University, Ohio Agricultural Research and Development Center, ChemLawn Corp., University Holiday Inn, Columbus, Ohio, May 15-17. Contact: Dr. P. O. Larsen, 2865 E. Orange Rd., Galena, Ohio 43021, 614-422-6987.

The Fertilizer Institute Marketing Conference, The Greenbriar, White Sulphur Springs, W. Va., June 10-13. Contact: Doug Culkin, TFI, 1015 18th St., N.W., Washington, D.C. 20036, 202-466-2700.

American Seed Trade Association, Annual Conference, Hyatt Regency Hotel, Washington, D.C., June 24-28. Contact: Association, Executive Building, Suite 964, 1030 15th St., N.W., Washington, D.C. 20005.

Michigan Turfgrass Field Day, Crops Barn, Michigan State University, East Lansing, July 10. Contact: Dr. John K. Kaufmann, 322 Agriculture Hall, MSU, East Lansing, Mich. 48824.

American Sod Producers Association Summer Convention and Field Days, Hilton Inn East, Columbus, Ohio, July 18-20. Contact: Bob Garey, ASPA, Association Building, 9th and Minnesota, Hastings, Neb. 68901, 402-463-5691.

Penn Allied Nursery Trade Show, Hershey Convention Center, July 24-26. Contact: S. Howard Davis, 169 W. High St., Carlisle, Pa. 17013, 717-243-1786.

Massachusetts Turf Field Day, South Deerfield Turf Plots, July 25. Contact: Dr. Joseph Troll, Stockbridge Hall, University of Massachusetts, Amherst, Mass. 01003, 413-545-2353.

The Fertilizer Institute Trade Fair, Stouffer's Riverfront Towers, Sheraton St. Louis and Mayfair Hotel, St. Louis, Mo., Aug. 22-23. Contact: Doug Culkin, TFI, 1015 18th St., N.W., Washington, D.C. 20036, 202-466-2700.

EQUIPMENT

Cushman-Ryan honors its top turf dealers

Sixty-two turf equipment dealerships received 1978 "quota buster" plaques from Cushman-Ryan, Lincoln, Neb. at last month's Golf Course Superintendents Association of America show in Atlanta.

Daniel L. Hedglin, North American sales manager for the company, presented the awards. Dealerships honored were:

The Magovern Company, Inc., of Windsor Locks and Stamford in Connecticut; Storr Tractor Co., Westfield and Ronkonkoma in New Jersey; Adams Equipment in Baltimore and Silver Spring, Md.; Hector Turf & Garden, Inc., Miami; Tri-State Toro, Davenport, Iowa; Wisconsin Turf Equipment Corp., Janesville, Wisc.

Midland Implement Co., Billings, Mont.; Capital Equipment Co., Alexander, Ark.; L. D. Johnson Co., Denver; Champion Turf Equipment of Wichita, Kansas City, Mo. and Springfield, Mo.; Wait Sales Co., Tulsa; Southwest Toro, Albuquerque; San Diego Toro, San Diego; Oregon Toro Distributors, Inc., Tigard, Ore.; Westward Power Equipment, Edmonton, Alberta; and Morin Equipment Ltd., Ste. Foy, Quebec.

Sawtelle Brothers, Inc., Swampscott, Mass.; Wilfred Mac Donald, Inc., Clifton, N.J.; Malvese Mowers & Equipment, Hicksville, N.Y.; Rhodes Mobile Equipment Co., Southampton, Pa.; G. L. Cornell Co., Gaithersburg, Md.; Porter Brothers, Inc., Shelby, N.C.; Krigger & Company, Inc., Pittsburgh; Debra Enterprises, Hollywood, Fla.; Zaun Equipment, Inc., of Jacksonville, St. Petersburg, Orlando and Ft. Myers all in Florida.

Lawn & Turf, Inc., Conyers, Ga.; Moon Equipment Co., Cincinnati; Baker Vehicle Systems, Inc., Macedonia, Ohio; Illinois Lawn Equipment, Inc., Orland Park, Ill.; Little Wheels Turf & Equipment, Peoria and Iowa City, Iowa; Horst Distributing, Inc., Chilton, Wis.; Reinders Turf Equipment, Elm Grove, Wis.; Cushman Motor Company, Inc., Minneapolis; Boyd Martin Co., Salt Lake City; Robison's Lawn & Golf, Inc., Grandview, Mo.; Big Bear Equipment, Inc., Omaha.

Justice Golf Car Company, Inc., Oklahoma City; Dakota Turf Supply, Inc., Sioux Falls, S.D.; Southern Specialty Sales Co., New Orleans; Bell Company, Inc., Albuquerque; Watson Distributing Company, Inc., Dallas; Associated Supply Company, Inc., Lubbock, Texas; Westoro Distributing, Inc., Burlingame, Calif.; Central Valley Golf, Fowler, Calif.; Electric Car Distributors, Inc., Rancho Mirage, Calif.; Cushman Motor Sales, Inc., Cerritos, Calif.

Inter-Island Equipment, Inc., Hilo, Hawaii; Baltz & Son Co., Portland, Ore.; Sunset Northwest, Bellevue, Wash.; Audubon Sales, Inc., Spokane, Wash.; Duke Lawn Equipment, Ltd., Burlington, Ontario and Sacramento, Calif.; Fallis Turf Equipment, Ltd., Richmond, B.C.

In a tight economy, it's right to insist on fertilizer that lasts longer and works harder. That's why Nitroform® slow-release nitrogen is right for you and your customers.

The 38% nitrogen is released slowly and steadily to work between applications. Nitroform is compatible with many other materials used in your lawn care program, including most pesticides. Nonleaching, the nitrogen stays to feed. Nonburning, Nitroform can be applied with

ease by any member of the crew.

Use Nitroform and give your customers grass that's long on beauty. Use Nitroform and treat your customers to grass that looks good between visits. Make them glad to give up the do-it-yourself lawn.

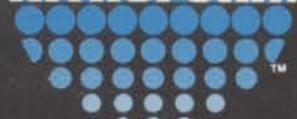
You and your customers work hard for your money. Let Nitroform work hard and long for you. Granular

Blue Chip® is for dry application and Powder Blue™ for spraying.



**WHEN CUSTOMERS
SINK MONEY IN LAWN CARE
THEY WANT LONG-TERM RESULTS.**

For Quality Nitrogen
NITROFORM



HERCULES INCORPORATED

Agricultural Chemicals, Wilmington, Delaware 19899 Phone (302) 575-5000

®Registered Trademark of Hercules Incorporated, ™ Trademark of Hercules Incorporated.

STH79-2



Dr. Harry D. Niemczyk is professor of entomology at the Ohio Agricultural Research and Development Center, Wooster. He has worked closely with lawn care businessmen in Ohio and many other parts of the country on research geared specifically for the needs of the lawn care industry. He said that reference or recommendation of specific insecticides was generally avoided in this article because current information and lists of recommended materials are available from state extension services. Reprints or extra copies of this issue are available.

TURF

Insects and their control

by Dr. Harry D. Niemczyk

The insects pests of turfgrass can be placed conveniently into two categories:

- Leaf stem and thatch inhabitants — those that live and feed above the soil, such as aphids, mites, chinch bugs, adult billbugs, cutworms, armyworms and sod webworms.

- Soil inhabitants — those that live and feed in the soil such as grubs, billbug larvae, ground pearls and mole crickets.

The target principle

Classification of pests according to the segment of the turf habitat which they occupy helps focus attention on the fact that whatever control measures are applied they must reach the target in that habitat. This concept may be called the **target principle** of pest control.

The target principle is applicable to any pest — insect, fungus or weed. It does, however, require that those applying it be well-grounded in the identification, life cycle and damage symptomology of the pest in the area of its occurrence. This article is presented by LAWN CARE INDUSTRY to provide such basic information on pests most frequently encountered in the lawn care business.

Soil-inhabiting insects

Grubs. Grubs are the larvae of many species of beetles, mainly belonging to one family. The adults differ in their color markings, habits and life cycles, but grubs are generally similar in appearance. Fully grown larvae are $\frac{3}{4}$ to $\frac{1}{2}$ inch long, white to grayish, with brown heads and six distinct legs. They are characterized by the C-shaped position they usually assume in the soil. Severe infestations feeding on turf roots can cause the sod to turn brown and die. Moles, birds and skunks actively feed on grubs and in the process tear up the turf as they search for them.

Life cycle. The life cycles of grubs can be classified according to the time required for completion of the cycle from egg to adult, namely, less than one year; one year; and two years or more. Among those with three-year cycles are some species of May beetles or "June bugs," often seen around lights on warm nights. These beetles are generally large, hard-shelled, and vary in color from tan to brown to black. Some species feed on the foliage of trees and shrubs, others do not feed at all. Feeding, flight, mating and egg-

laying are done at night.

Masked chafers, European chafers and one species of a Texas June beetle are examples of beetles which complete their life cycle in one year. The common Japanese beetle is perhaps the best example of this group. Grubs of the Japanese beetle are about one-inch long when fully

to page 10

TOOLS, TIPS & TECHNIQUES



This trailer was designed by Herman Carruth, president of AAA Lawn Industries, Inc., Atlanta. The tailgate also serves as a ramp to load and unload Carruth's tractor mowers.

THE BEST LAWN CARE UNIT HAS TO BE STRONG



**STRONG ON SAVINGS...STRONG ON QUALITY...
STRONG ON PERFORMANCE...**

THE STRONG PC1200/PC800 LAWN CARE UNITS

- High quality fiberglass tank, available in 1200 or 800 gal. capacity.
- Matching fiberglass engine and pump cover.
- First unit of its kind that can be bolted to either truck frame or flatbed body.
- Superfeatures...at an incredibly low initial cost factor.
- Tank constructed of chemically resistant fiberglass resins, baffled to reduce liquid surge.
- FMC John Bean pumps.
- Units designed to pump liquids or non-soluble fertilizers.
- Many options and components to choose from.
- Custom fabrication available upon request.

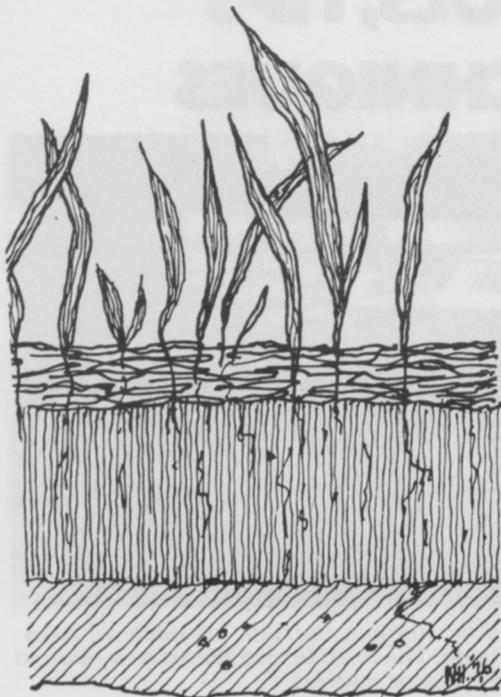
**STRONG UNITS ARE STRONG UNITS! SPECIFY FROM ONE OF THE COUNTRY'S
BIGGEST PRODUCERS OF HI-VOLUME CAPACITY LAWN CARE UNITS.
SPECIFY STRONG!**

For complete specifications on the PC1200/PC800, or any other Strong unit, circle the reader card, or please write or call:



STRONG ENTERPRISES, INC.

7270 S.W. 42nd Street, Miami, Florida • (305) 264-5525



LEAF & STEM

- Mites
- Aphids
- Scales

THATCH

- Chinch Bugs
- Sod Webworms
- Armyworms
- Cutworms
- Billbug Adult
- Scales

SOIL

- Grubs
- Billbug Larvae
- Mole Crickets
- Ground Pearls

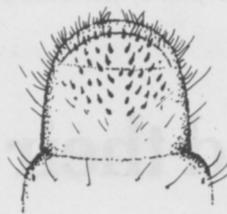
Grub Showing Location of Raster



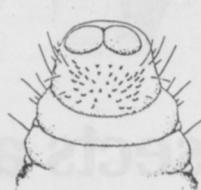
Bottom Side of Last Segment Bears the Raster



Japanese Beetle



N. Masked Chafer



Black Turfgrass Ataenius



May Beetle



European Chafer



Asiatic Garden Beetle

Above left: Classification of pests according to the segment of the turf zone they occupy helps emphasize that controls should be aimed at specific targets in that zone. This concept is called The Target Principle.

Above right: Identification is a necessary step in achieving control of grubs. Examination of the raster with a 10-power hand lens will identify the common species.

grown and have the same general appearance as other grubs. The adults are 1/2 inch long with hard, metallic, blackish-green bodies. They have coppery brown wing covers and small tufts of white hairs along the sides and back of the body. The adults are commonly seen during July feeding on the leaves of many species of trees and shrubs. When egg-laying begins, clusters of the adults are frequently seen on the turf.

The black turfgrass ataenius is occasionally found on home lawns. This species completes two cycles each year in some locations and one in others. Adults fly and lay eggs during the daytime. Grubs are similar in general appearance to those of other species except they are smaller. Unlike most species in this group of pests which overwinter as larvae, the ataenius beetle overwinters as an adult.

Identification. There are many species of grubs, and identification is based primarily on the pattern of spines found on the underside of the tip of the abdomen. This area is called the raster and the configuration of the spines the raster pattern. A 10-power hand lense is adequate for examining the raster pattern of most grubs, unless they are very small, in which case a microscope is needed.

Diagnosis. Evidence of grub damage includes patches of wilted, dead or dying turf visible during spring (April and May) and fall (October and November). Presence of grubs in the fall is also made evident by the feeding activity of skunks and other mammals which tear up the turf in search of grubs. In the spring, large flocks of various

to page 12



NEW EXCEL HUSTLER 295 liquid-cooled engine puts industrial power on an industrial mower.

The same EXCEL HUSTLER mowers that excel in grounds maintenance maneuvers also come with a liquid-cooled industrial engine. The new model 295 offers superior performance and a long engine life with low upkeep and little downtime.

The only significant difference from the proven 275 and 285 is its liquid-cooled Continental engine, built in the USA, to Excel's specs for use on the new model 295. This industrial engine is not to be confused with automotive type engines commonly converted to mower use. Continental 2-cylinder liquid-cooled engine has long stroke and develops high torque at lower RPM. Powerful 2-cylinder engine is easier to maintain & service. Altogether, that's economy!

Like other EXCEL HUSTLER mowers, the new 295 is controlled with fingertip ease. Twin hand levers direct power independently to both drive wheels via dual hydrostats, with immediate response. The big 72" mower can make intricate twists and turns around trees,

signposts, park equipment — it even mows out corners with no time-consuming back-and-forth antics that mark ordinary mower operation. Crew chiefs report one problem: their operators argue over who gets to run the EXCEL HUSTLER, and who has to settle for conventional mowers!

Summed up, the new 295 is the same superior mower with more power than ever, and the full safety package. Attachments that stretch its working seasons the full year also interchange with all EXCEL HUSTLER models from 272A through 295.

Watch for a field demo or write for free literature and Distributor's name. Call toll-free (800) 835-3260; in Kansas or Canada, call (316) 327-4911 collect. EXCEL HUSTLER turf and groundskeeping equipment is built right by Excel Industries, Inc., Box 727, Hesston, Kansas 67062.

For GSA: GS-07S-03665

For HUD: OAH(CO)m 2635



Turf Equipment
There's a Difference!

EXCEL INDUSTRIES, INC. Box 727 / Hesston, Kansas 67062 / (316) 327-4911 / (800) 835-3260

Circle 140 on free information card

SPLIT PERSONALITY.

Another fine,
quality-con-
trolled product
of Jacklin Seed
Company.

Glade Glade

KENTUCKY BLUEGRASS U.S. Plant Patent 3151

Bright sunshine or moderate shade makes little difference to Glade Kentucky bluegrass. With its split personality, Glade grows well under both conditions.

A Rutgers University selection, low-growing, deep green Glade has improved resistance to most races of leaf rust, stripe smut and to powdery mildew in up to 60% shade. Because of its better than average resistance to most races of Fusarium blight, Glade Kentucky bluegrass is being used as a fortifying ingredient in many professional turf grass mixes. It blends beautifully with the new, fine-leafed rye grasses, fescues and other elite bluegrasses.

Specify Glade for your next turf grass mix. You'll appreciate the split personality that thrives in both sun and shade.

INSECTS *from page 10*

blackbirds feed on grubs in heavily infested areas. Ground mole activity is also a good indicator of grub problems. The only sure way to detect grubs is to cut into the turf in four or five locations, examining the root zone and first three inches of soil carefully.

Billbugs. Several species of billbug seriously damage in the United States. Among these are hunting billbug on zoysiagrass, the Phoenix billbug on bermudagrass, and the bluegrass billbug on perennial bluegrass.

Larvae are legless, white soil inhabitants, 3/8-inch long and have a yellow to brown head. They are fat with the tail end of the larvae somewhat larger than the head end. Larvae feed on turfgrass roots and stems, often cutting the stems off at the crown so they are easily pulled.

Life cycle. In the northern states, bluegrass billbugs pass the winter as adults in the lawn



Bluegrass injured by bluegrass billbug larvae breaks off easily at the crown when pulled. Evidence of tunneling in the stems identifies this pest as the causal agent.

seek shelter in turf, hedgerows and other protected areas.

Diagnosis. The wandering nature of bluegrass billbug adults during May and June and again during September and October is a good indicator of a potential problem in nearby turf. Careful observation for adults on sidewalks, driveways and along gutters during these times should provide warning of a possible infestation of larvae in July and August.



Mole crickets feed on turfgrass roots and use their spade-like front feet to tunnel in the soil.



Ground pearls live deep in the soil and feed on turf roots. Centipedegrass is commonly attacked.

(Photo courtesy Dr. J. A. Reinert).

If small patches of turf appear to be dying from June to September, the best way to determine if billbugs were responsible is by carefully examining the damaged turf. Look for evidence of larvae feeding at the base of the stem and use a knife to probe among the roots to look for larvae.

Turf damaged by larvae is easily pulled out by hand with the stems breaking off at the crown. A good indicator is the

presence of fine, white, sawdust-like material left by larvae feeding in the root zone.

Mole crickets. Mole crickets are pests of major importance on most turfgrasses grown in the southeastern United States. The Puerto Rican and southern species are responsible for most of the damage. Adults are about 1 1/2-inches long, gray to light brown, and have short spade-like front legs well adapted for tunneling. All stages feed on



The typical target — grubs feeding on turfgrass roots under a layer of thatch.

and sheltered areas nearby. In spring they begin to move about and are commonly observed wandering around on driveways and sidewalks.

During May and June, adults lay eggs in cells cut near the crown in the grass stems. These eggs hatch in about two weeks. The larvae feed within the grass stem for a time and then burrow down the stem to feed on the crown. Later they move to the



Bluegrass billbug larvae feed at crown of bluegrass and later move to the soil to feed on plant roots.

root zone, feeding on roots and rhizomes.

Larvae are abundant during mid-July to mid-August. After completing development, they pupate in small cells in the soil and soon emerge as new adults. New adults are abundant during late September and October when they are frequently found in considerable numbers on driveways and sidewalks. As winter approaches, the adults





Sod webworm larvae live in silk-lined tunnels in thatch during the day and come to the surface at night to feed on grass blades.



Pellets of green excrement (frass) in the thatch indicate sod webworms or cutworms have fed on the turf.



Black cutworm moth



Black cutworm larva

grass roots and burrow in loose soil, causing the turf to dry out. Burrows are 1/2 to one inch in diameter and easy to see. Damage can be especially severe in newly planted turf.

Life cycle. In spring, adults burrow into the soil to deposit eggs well below the surface. Eggs hatch in two weeks, producing nymphs in May that look like adults except they are smaller and have short wings. One year is required for nymphs to become mature and there is one

generation each year. Except for adult mating flights which occur in the spring, mole crickets remain in the soil most of their life.

Ground pearls. Ground pearls are important soil-inhabiting insect pests throughout most of the southern United States. Actually, they are the immature stages of a scale insect that completes its development inside the protective pearl-like shell (cyst) which it secretes.

The shells are yellow-purple

and vary in size from a grain of sand to 3/16 inch in diameter. Most warm-season grasses are susceptible to injury, but centipedegrass is most commonly infested.

Life cycle. Relatively little is known about the life history of these insects. Mature females (crawlers) leave their protective shells, move a short distance and lay eggs in the soil. Newly hatched nymphs attach themselves to roots by their piercing mouth parts and form a shell

about them. The life cycle from egg to adult requires at least one and possibly two or three years.

Removal of plant fluids by the nymphs causes turf to turn yellow, then brown, in irregular patches. Examination of the entire root zone for presence of the cysts is recommended for detection.

Control: Application of the target principle

Control of turf damage by soil-inhabiting pests involves practical application of the target

HIRE THE INSECTICIDE THAT LIKES TO WORK OVERTIME.

DURSBAN* brand insecticides provide unsurpassed residual control of cutworms, chinch bugs, sod webworms, and a dozen other turf pests. Both DURSBAN 2E Insecticide and double-strength DURSBAN 4E Insecticide keep working a lot longer than other turf insecticides. This residual action saves you time, trips, and labor. It also saves you money. In fact,



DURSBAN insecticides cost less than most other turf insecticides.

Ask your supplier for the turf insecticide that works overtime for you.



Get DURSBAN 2E Insecticide or double-strength DURSBAN 4E Insecticide. Just be sure to read and follow all label directions and precautions. Agricultural Products Department, Midland, Michigan 48640.



Bronzed cutworm moth

principle. Such effort requires concentration on getting a specific control material to a specific target; in this case, the target lives beneath a layer of thatch.

Grub control. Since cancellation of chlordane and other chlorinated cyclodiene insecticides, the organophosphates remain as chemical tools for grub control. Among the biological methods available is the use of milky spore disease. Both chemical and biological approaches are, to a degree, effective; however, both have their limitations.

Organophosphates. Several



Bronzed cutworm larva

organophosphate insecticides are variously labeled for grub control, however, among them are products that are either not effective, too toxic for use on home lawns or too expensive to be economically feasible. Among those that are safe, relatively economical, and fairly effective are diazinon and trichlorfon (Dylox or Proxol). Both are used extensively by the lawn care industry for grub control.

Like most organophosphates, the effectiveness of these two insecticides is limited by their short residual activity in soil (14 days or less) and the fact that they are subject to fairly rapid breakdown by environmental factors like light and heat. These characteristics emphasize the importance of uniformly dis-

to page 14

*Trademark of The Dow Chemical Company



DOW CHEMICAL U.S.A.

tributing the proper rate at a time when the pest is most vulnerable. Again, the life cycle, not the calendar, determines the vulnerable period.

For proper distribution, liquid materials should be applied as coarse sprays, finer sprays are subject to drift and tend to volatilize the insecticide more rapidly once the spray reaches the turf. A minimum volume of four gallons per 1,000 square feet should be used when treating northern turfgrasses. However, with the deeper thatch of southern turfgrasses, 20 to 40 gallons per 1,000 square feet is needed.

Both diazinon and trichlorfon have other limiting factors worth knowing about. Diazinon has a moderately strong affinity for organic matter. Because of this, some of the material applied to turf binds to the thatch before reaching the target. Some lawn care firms claim the addition of certain wetting agents apparently lessens binding and gives better grub control.

Trichlorfon, on the other hand, does not bind to thatch but breaks down rapidly when the pH of the tank mix is high. Some reports indicate a half-life of 63 minutes at a pH of 8; 6.4 hours at a pH of 7; and 3.7 days at a pH of 6. The pH of water is used to prepare tank mixes varies with the time of year and location, thus lawn care firms would be well-advised to have their water supply tested for pH and buffering capacity. Products are available to adjust pH levels downward. Low pH is usually not a problem.

While the performance of organophosphate insecticides is reduced by thatch, timely use of irrigation by the customer can help achieve maximum control from treatments. Liquid insecticides should not be applied to dry thatch. Under such circumstances the spray is likely to evaporate before penetrating the thatch. If not moist from previous rain or irrigation, the customer should be advised to irrigate the turf the day before treatment is scheduled.

Instruction should also be left to apply an additional ½ inch of water immediately after treatment. Post-treatment irrigation or rain is essential to moving the insecticide off the grass blades, through the thatch and to the target. Delays in watering-in the treatment significantly reduce the probability of successful control.

When granular formulations are used, the grass blades should be dry at the time application is made so the insecticide particles bounce off the blades and sift as deeply as possible into the thatch. This brings a concentrated particle close to the target and also provides protection from breakdown by light and other factors. While the urgency to irrigate following granular application is not as great as for liquid application, it should be done as soon as possible. At least ½ inch should be applied.

Customers and lawn care operators often expect to see dead grubs a few days after treatment. Actually, it may take 10 to 14 days before significant



Armyworm larvae

numbers of grubs ingest enough insecticide to cause obvious mortality. Customers should be advised of this delayed action.

Milky spore disease. While insecticides are the principle means of controlling grubs, milky spore disease provides an effective alternative for control of the Japanese beetle. The bacterial causal agent — *Bacillus popilliae* — is only effective against Japanese beetle larvae.

Infection takes place when resting spores of the bacterium are ingested by the grub along



Growth stages of the hairy chinchbug from egg to adult.

with food and soil particles. The spore germinates inside the grub, producing bacteria which multiply and produce millions of spores that eventually fill the entire body of the insect. Infected grubs may live for months but eventually are killed, distributing spores at a new location. Yearly infection and death of grubs plus birds and mammals feeding on them further helps distribute spores over the turf area.

In addition to the natural occurrence in the soil, dust contain-



Beauveria sp., a naturally occurring fungus disease, destroys many chinchbugs (left) in the fall when the turf is moist.

ing the resting spores can be purchased and artificially distributed. The cost of artificial distribution ranges from \$60 to \$80 per acre depending on the concentration of spores in the product and rate applied.

Dust may be applied any time the ground is not frozen. A common method is to apply one teaspoonful (about 200 million spores) of dust in spots at intervals of four feet in rows four feet apart. This is about 12 pounds of dust per acre.

In northern states, several



B5100

2- or 4-wheel drive.
12 hp. 2 cyl.

Designed for grass cutting, vegetable gardens, and general estate maintenance. For home owners, this tractor is a step up from riding mowers. Can use mid-mount or rear-mount mower, rotary tiller, plow, disc harrow, rear blade.

B6100

2- or 4-wheel drive.
14 hp. 3 cyl.

Similar to B5100, but bigger engine offers more pulling power. Can handle all the same implements as the B7100D/T. Good tractor for landscapers, nurserymen, and other commercial users requiring a tractor to handle variety of materials.

B7100D/T

4-wheel drive.
16 hp. 3 cyl.

Our biggest selling tractor. Small enough for grass cutting and general work around private homes. Strong enough for a wide variety of commercial applications, especially park maintenance, nurseries, landscape contractors. Implements include post hole digger, front blade, trencher, front-end loader, backhoe, snowblower, as well as all those listed under B5100.

L185

2- or 4-wheel drive.
17 hp. 2 cyl.

Works as mowing tractor with turf tires. With 2-wheel drive it is versatile chore tractor on large farms. For farm or industrial use where ground is soggy, we recommend 4-wheel drive for maximum traction. Category I 3-point hitch can handle plow, cultivator, disc harrow, rotary tiller. Also a wide range of earth moving and excavating implements. Rental operators will find this model in great demand.

L245

2- or 4-wheel drive.
25 hp. 3 cyl.

This model has many crop applications, especially vegetable growing and orchard work. A wide range of implements is available, including backhoe, front-end loader, post hole digger, front blade, box scraper.

L245HC (not shown)

2-wheel drive.
25 hp. 3 cyl.
New high-clearance tractor, ideal for specialty crops such as vegetables and tobacco. Provides ample 22" ground clearance plus an uncluttered, off-set operator's platform for excellent visibility.

Have you noticed the color of our Kubota tractors? Orange. Every one of them. It's our way of making it easy for you to choose a good tractor. Now all you have to do is pick an orange. That way you won't get a lemon.

In the 12 to 55.5 hp range, no one offers as many models as Kubota. And all our mid-size Kubotas give you the qualities that separate real tractors from the lightweight garden variety.

All Kubotas have water-cooled diesel engines, which are designed with more cylinders than many competitive models. Standard equipment on all models includes rear PTO and a 3-point hydraulic hitch that accommodates a variety of implements.

For more information, write or call us. Better yet, see your Kubota dealer. He knows more about how to



The adult stage of the bluegrass billbug is a thatch inhabitant often seen walking across sidewalks and driveways in spring and fall.



Rhodesgrass scales are covered with cottony material secreted by the insect.

(Photo courtesy Dr. J. A. Reinert).



Bermudagrass scales are covered by a shell-like covering and are found on grass stems. Infested turf appears "moldy".

(Photo courtesy Dr. J. A. Reinert).



Invisible to the naked eye, bermudagrass mite feeding causes growth distortions in the form of tufts.

(Photo courtesy Dr. J. A. Reinert).

years may elapse before spores are well-distributed throughout the soil. During this time, grub infestations must be tolerated to permit infection and death of grubs. Once distribution is accomplished, the treatment will provide control of Japanese beetle grubs for many years.

Billbug larvae. Control of damage from the billbug is a situation where application of the target principle determines the approach to control. To pre-

vent the development of the damaging larval stage, insecticide may be applied early in spring (April for the bluegrass billbug) to eliminate adults before they lay eggs. At this time the insect is inhabiting the surface and thatch and irrigation following treatment is not advisable because the objective is to keep the material in the thatch where the pest is located. However, once a larval infestation develops, the pest becomes a soil

inhabitant, and irrigation following with an insecticide treatment is advisable to move the material to the target.

Mole crickets. In areas where damage from mole crickets has occurred previously, further injury can be prevented by applying sprays of insecticides during June while the nymphs are still small and relatively easier to control. Such sprays may also be applied later in the summer when damage appears. Thorough

and deep irrigation before and after spray applications is necessary to reach the target.

Various baits containing low percentages (1/2 to two percent) of several insecticides have been effective when uniformly applied over the turf in late June. Here the objective is to bring the target — a young mole cricket nymph — to the surface to feed on the bait. Applying the target

an orange.



L285

2-wheel drive.
30 hp. 4 cyl.

4-cylinder diesel engine provides lots of smooth power. Built to accommodate a long list of implements, including rotary rear-mount mower, tillers, disc harrows, box scraper, front blade, front loader, backhoe, plow. Good main tractor on small farm. Also wide application for institutional or governmental grounds maintenance. With front loader, it is excellent machine for dairy farmer.

L2950T

4-wheel drive.
30 hp. 3 cyl.

Will outpull many larger farm tractors that only have 2-wheel drive. Can handle most medium-sized Category 1 farm implements. Also, earth moving capability makes it suitable for general building contractors. Outstanding fuel economy for its size. Draft and position control is standard.

L345

2-wheel drive. 34 hp. 4 cyl.

Brand-new model designed to fit into popular horsepower range. 4 cylinders let it run more smoothly than many competing models. Fine all-round performer as chore tractor on large farm. Handy for general contractor because it doesn't require a heavy-duty trailer to haul it to construction site. Live rear PTO, draft and position control, power steering are standard on this model and all larger tractors.

M45000T

4-wheel drive. 55.5 hp. 6 cyl.

Our big brute. Tremendous pulling power for its size and weight. Works beautifully as primary tractor on smaller farms. Fine for land where traction is critical. Ideal for building contractors who start work in the North as soon as frost is out of the ground.

M4000 (not shown)

2-wheel drive. 47.5 hp. 6 cyl.

Good number one tractor for small farms, especially vegetable crops. Also excellent for many types of small to medium excavating work. 6 cylinders provide smooth torque. Quiet running. Economical to operate. 16 forward gears supply wide range of ground speeds to match many different implement uses.



Greenbugs line the upper surface of bluegrass blades to suck out plant fluids and inject salivary fluids that kill tissue around the feeding area.

principle in this case means no irrigation should be applied.

Ground pearls. Ground pearls can occur 10 inches or deeper in turfgrass soils. This fact, coupled with the difficulties of achieving penetration of insecticides, has led to the conclusion that there is no practical, effective means of controlling this pest. Management practices, particularly



Turf damaged by the greenbug has a yellow to orange cast. Injury is frequently seen under trees but also occurs in open areas.

irrigation and fertilization which keep the turf growing vigorously, temporarily helps grass to overcome injury.

Leaf, stem and thatch-inhabiting insects and their control in turfgrass

Sod webworms. Sod webworms include a complex of species such as the tropical sod webworm, vagabond carambus, bluegrass sod webworm and many others. The extent of injury from this group of thatch-

to page 17

pick an orange than anybody.

For specific information about any Kubota tractor, call 1-800-241-8444. (In Georgia 1-800-282-1333.) Ask for Operator 63.

We're looking for work.

 **KUBOTA**

HELP! To help me pick an orange, please send free spec sheets on the following Kubota models:

1. (Model No.) _____

2. (Model No.) _____

3. (Model No.) _____

Mail to: Advertising Department
Kubota Tractor Corporation, 550 W. Artesia Blvd.
P.O. Box 7020, Compton, CA 90224

NAME _____

ADDRESS _____

CITY _____

COUNTY _____

STATE _____

ZIP _____

AREA CODE _____

TELEPHONE NUMBER _____

LC13



WE RECOMMEND LESCOSAN

In two seasons, we reduced the crabgrass population from 90%-plus to less than 10%. And this is on big lawns of almost an acre. Lescosan is the mainstay of our crabgrass control program.

—JOHN R. LINKHART
Perf-A-Lawn Vice-President (Sales)

As John R. Linkhart knows, Lescosan is the answer to pre-emergence crabgrass control. The undeniable proof exists in every application.

"Nashville is the premier area for crabgrass. And Lescosan is the main-stay of our crabgrass control program. It works better on crabgrass and foxtail than any other product."

The Perf-A-Lawn professional chemical lawn maintenance company specializes in liquid spray applications and they're building more than turf. They're building a reputation.

"Since we are constantly expanding our franchise

market, we must be sure a product works. So we recommend Lescosan to our franchisees."

Lescosan (Betasan*), available in 4E emulsion or 12.5 granules, provides full-season effectiveness on all grasses, as well as on a number of ornamentals and ground covers. When Perf-A-Lawn buys Lescosan from Lakeshore, they buy from the formulator. And for Perf-A-Lawn, that means quality and savings!

If quality, savings and performance are selling Lescosan to you, take advantage of our toll-free information service and call Barb

today. Those east of the Mississippi can reach her by dialing 1-800-321-5951. (In Ohio, dial 1-800-362-7413.) If you're west of the Mississippi, call Barb collect at 216-323-7544.

She'll have our representative contact you so you'll know why Perf-A-Lawn recommends Lescosan and how our other fine LESCO Products (including LESCO 36 Sulfur Coated Urea) are selling themselves every day!

Our LESCO Quality Products and Friendly Service are always as close as your phone.

*(Betasan—Registered TM of Stauffer Chemical Company.)

LESCO PRODUCTS

Division of Lakeshore Equipment & Supply Co.
300 S. ABBE ROAD, ELYRIA, OHIO 44035

A FAMILY OF FINE PRODUCTS—Lescosan 12.5G—Lescorene—Lesco 4—Lescobor—Lescopar—Lescopex—Lesco Non-Selective Herbicide
Lesco MSMA—Lesco Thiram 75W—Lescozyme—Lakeshore Chinch Bug & Sod Webworm Control

inhabitants varies with the species and location of occurrence. Usually only a few species are responsible for most of the damage in a given area.

Sod webworm adults are small, grayish-white to beige moths with a wingspread of 3/4 inch frequently seen flying over lawns at dusk or just after dark. When at rest the wings are folded closer to the body. The head has a snout-like projection in front, thus they are also called snout-moths. If disturbed during the day, the moths fly erratically for a short distance, then come to rest on the turf. The moths do not damage turf.

The larvae are caterpillars varying in color from greenish to beige, brown or gray, depending upon the species. When mature, they are 3/4 inch long and most have characteristic dark circular spots scattered over the body length. As the larvae mature, they construct tunnels or burrows through the thatch, sometimes extending into the soil.

The name sod webworm is derived from their habit of lining these tunnels with webs of silk-like material they produce. The larvae do not place webbing on the turf surface. Feeding and consequent damage is done only at night. Some species chew off grass blades close to the plant crown and pull them into the tunnels where they are eaten. The tropical sod webworm chews notches along the sides of the grass blade. If feeding is extensive during dry weather, the plants may be killed.

Life cycle. Female moths drop their eggs on the turf as they fly over the turf at dusk. Eggs hatch in a week to 10 days. At an average temperature of 78°F., about six weeks is required for development from egg to adult. The most common species on northern turfgrass — bluegrass webworm and larger sod webworm — have two generations each year and overwinter as larvae in silken webs (hibernacula) within the thatch. In southern climates, species such as the tropical sod webworm have several overlapping generations each year. In south Florida, generations continue through the year.

Diagnosis. Flocks of birds that frequently return to a turf area usually mean that sod webworms or other larvae are present. Further evidence of bird activity is probe holes left by birds searching for larvae. Close examination of the turf in such areas either reveals larvae, or the green pellets of excrement (frass) left by them.

An effective method of detection is to mix one tablespoon of one to two percent pyrethrins (a common garden insecticide) in one gallon of water and apply the solution uniformly over one square yard of turf. The solution irritates the larvae which soon come to the surface. A fairly effective substitute for pyrethrins is 1/4 cup of powdered household detergent.

Cutworms. Cutworms are the larvae of nightflying moths two to three times larger than sod webworm moths. The two

species most common in turf-grasses are the black cutworm and bronzed cutworm. The larvae feed at night on grass blades which they chew off close to the base of the plant.

The black cutworm is pale gray to olive black without distinct stripes or marking. It does have one narrow pale stripe on the upper surface. The bronzed cutworm is dark brown black above, pale on the underside and has a distinct bronze sheen. The upper surface of the body has three narrow yellow stripes and a broad pale white-yellow stripe on each side. When mature, the larva are 1 1/2 inches to two inches long and have a dark brown to brownish-gray head. The adults of these cutworms are robust, hairy moths, brownish tan to grayish in color with wing spread of 1 1/2 inches. The front wings are darker than the hind pair and usually have various light and dark markings.

to page 18

COST CUTTINGS

Back-up signal on tank trucks cuts accidents



A loud, piercing back-up signal noise is standard equipment on all Davey Lawnscape Service spray tank trucks, and general manager Gordon Ober feels that the device has gone a long way in preventing driving accidents.

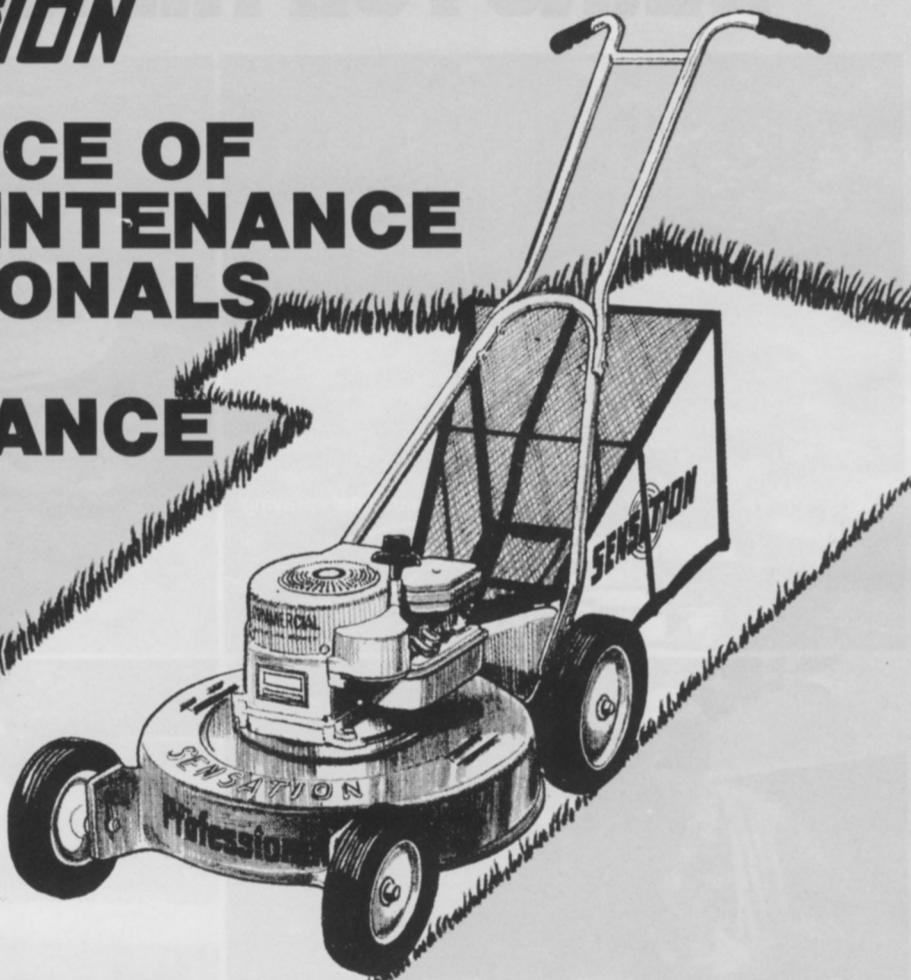
"When our trucks pull into a residential neighborhood, children come right up to the truck," Ober told *LAWN CARE INDUSTRY*, "and when a technician comes back to the truck after spraying he will sometimes find the children even climbing on the truck."

"Because of the size of the truck, and the blind spot of the side mirrors, we feel these back-up signals are necessary to prevent accidents," he said.

He says that most truck manufacturers have these back-up signals available, and that lawn care companies should investigate having them installed when they purchase a new truck. The unit is a switch that hooks into the transmission, similar to back-up tail lights. Davey is based in Kent, Ohio.

SENSATION

No. 1 CHOICE OF LAWN MAINTENANCE PROFESSIONALS AND PERFORMANCE SEEKING HOME- OWNERS



**MOWS AND BAGS
WET OR DRY GRASS
WITHOUT CLOGGING!**

**Seeking Performance...Power...
Durability? GET A SENSATION!**

With exclusive valve rotator, replaceable wheel bearings, mag-aluminum cast deck, patented air lift blade with balanced fly wheel for bagging wet grass without clogging...SENSATION more than ever the No. 1 Choice.

**No. 1 features that make
the No. 1 difference for you!**

**THE HIGH-WHEELER
MAKES SHORT WORK
OF TALL GRASSES
AND WEEDS...**

Put power into your big jobs with the 24" self-propelled High-Wheeler. 5 HP Briggs & Stratton engine and geared transmission with 3-speed forward and reverse makes it ideal for toughest weeds & grasses.



**WRITE TODAY FOR MORE INFORMATION ON SENSATION MOWERS...
THE SENSATION CORPORATION 3601 North 16th Street • Omaha, Nebraska 68110**

MARKETING IDEA FILE

Survey says 2.2% of income goes for ads

The average percentage of sales income designated for advertising and promotion is 2.2 percent, according to a recent survey conducted by the National Landscape Association.

"Word of mouth" was ranked the most effective advertising medium by landscape firms in the survey. Yellow Page advertising was a close second, with newspaper following. Other media mentioned (in descending order) were: signs, radio, direct mail, magazines and television.

How large a bite do the different media take out of that advertising budget? Newspapers take the most — 31.9 percent nationally — followed closely by Yellow Pages with 31.6 percent. Other media and percentage of budget were: radio, 11 percent; direct mail, six percent; signs, 5.2 percent; magazines, 2.8 percent; television, 2.3 percent; and other, 8.4 percent.

INSECTS from page 17

Life cycle. Adult moths lay their eggs at night on the turf-grass surface. The larvae feed at night, hiding in the thatch and soil during the day. The number of generations each year varies with the location. In the northern states, the black cutworm probably overwinters as a pupa in the soil and has three generations. The bronzed cutworm overwinters as an egg that hatches in late February. Small larvae are often the first found, usually in April. There is one generation each year.

Diagnosis. Birds, particularly starlings, have a keen ability to locate cutworms and other caterpillars in turf. When these birds return frequently to a given area, leaving probe holes, larvae are usually present. Examination of the feeding area usually reveals cutworms or green excrement pellets left by the feeding larvae. These fecal pellets are often three times larger than those of

the sod webworm larvae. Solutions of pyrethrins or detergent brings larvae to the surface.

Armyworms. Like cutworms, armyworms are the larval stage of night-flying moths three times larger than those of the sod webworm. There are two important species. The true armyworm is an occasional pest in northern states but commonly a serious pest of southern turfgrasses. The larvae vary in color from gray to yellowish green and are clearly marked with light stripes.

When mature, they are 1½ to two inches long and have gray to yellowish heads. The fall armyworm has a characteristic white inverted "Y" marking on the front and head capsule. The larvae frequently feed in one area, then migrate, in mass, to another during the night, thus the name "armyworm."

Life cycle. Adult moths of armyworms deposit eggs in masses on grasses and other plants. The larvae feed at night, and hide in the thatch during the day. In areas like southern Florida where no freezing occurs, all stages may be present during the year.

The fall armyworm is a serious southern pest that migrates. Occasionally, larvae from eggs laid by adults that migrate to northern states cause severe damage to northern turfgrass. In 1977 this occurred as far north as Minneapolis. None of the life stages overwinter in the north.

The armyworm occurs throughout the United States. In northern climates, larvae overwinter in soil or debris. Adults lay eggs on turf in May. There are three generations each year.

Diagnosis. The methods described for sod webworm and cutworms are also effective in detecting armyworm infestations.

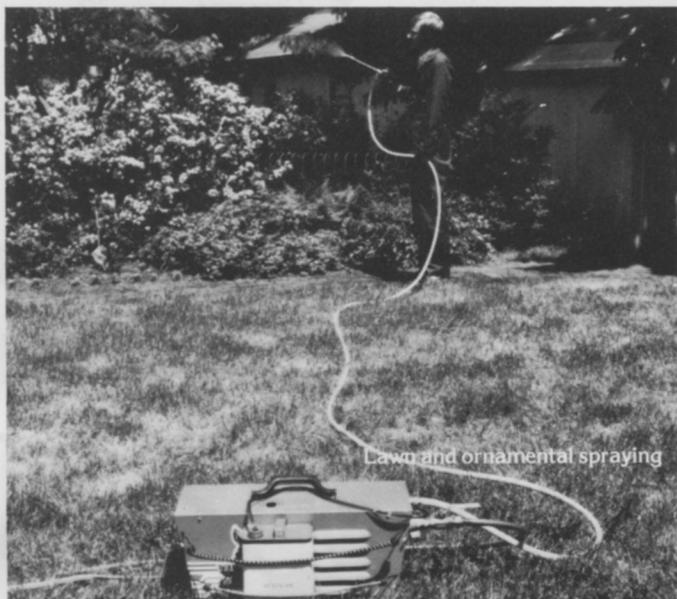
Chinchbugs. Two species of chinchbugs are considered important pests of turf. The hairy chinchbug, a pest of northern turfgrasses, causes severe damage to bluegrasses, fine fescues and bentgrass. The southern chinchbug feeds on bermudagrass and zoysiagrass, but is primarily a serious pest of St. Augustinegrass.

Chinchbugs generally occur in scattered patches rather than being evenly distributed over the turf. Sunny areas are most heavily infested with populations often reaching 200-300 per square foot. Plant injury occurs as a result of the insect sucking fluids from the plant and at the same time injecting salivary fluids into the plant. The presence of the salivary fluid disrupts the water-conducting system of the plant, causing it to wilt, then turn yellow and brown. Injury is particularly severe when heavy infestations occur in turf that is dormant from moisture stress. Such dry conditions are particularly conducive to chinchbug growth and population development.

Adult chinchbugs are 1/5 inch long, black with white wings folded over the back. The wings of some extend to the tip of the abdomen, but others extend only halfway to the tip. The nymphs

to page 20

TANKS FOR THE MEMORY!



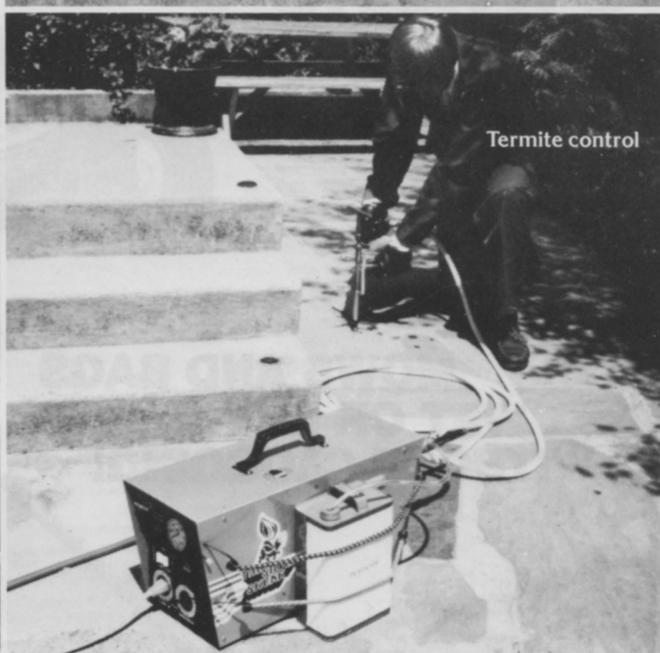
Lawn and ornamental spraying



The complete unit with its accessories



Complete portability



Termite control

For the first time in pesticide history, "The Silver Skunk" gives you the convenience and precision required for urban and industrial spray operations. It is a revolutionary new portable high-pressure pesticide sprayer. Utilizing the exclusive Micro-Injection System, "The Silver Skunk" accurately meters small amounts of pesticide concentrate directly into the high-pressure water flow. You may eliminate bulky mixing tanks, for "The Silver Skunk" allows you to couple

directly to a garden hose for a water source. "The Silver Skunk" features portability, simple calibration, allows the operator to easily switch from one concentrate to another, records total gallons used on each job and is designed for extended service life. The unit comes complete with 100 feet of high-pressure spray hose, a wand, three nozzles and adapters. You're ready to go to work the moment "The Silver Skunk" walks through the door.

See me at your nearest dealer!



Power Spray Technology, Inc.

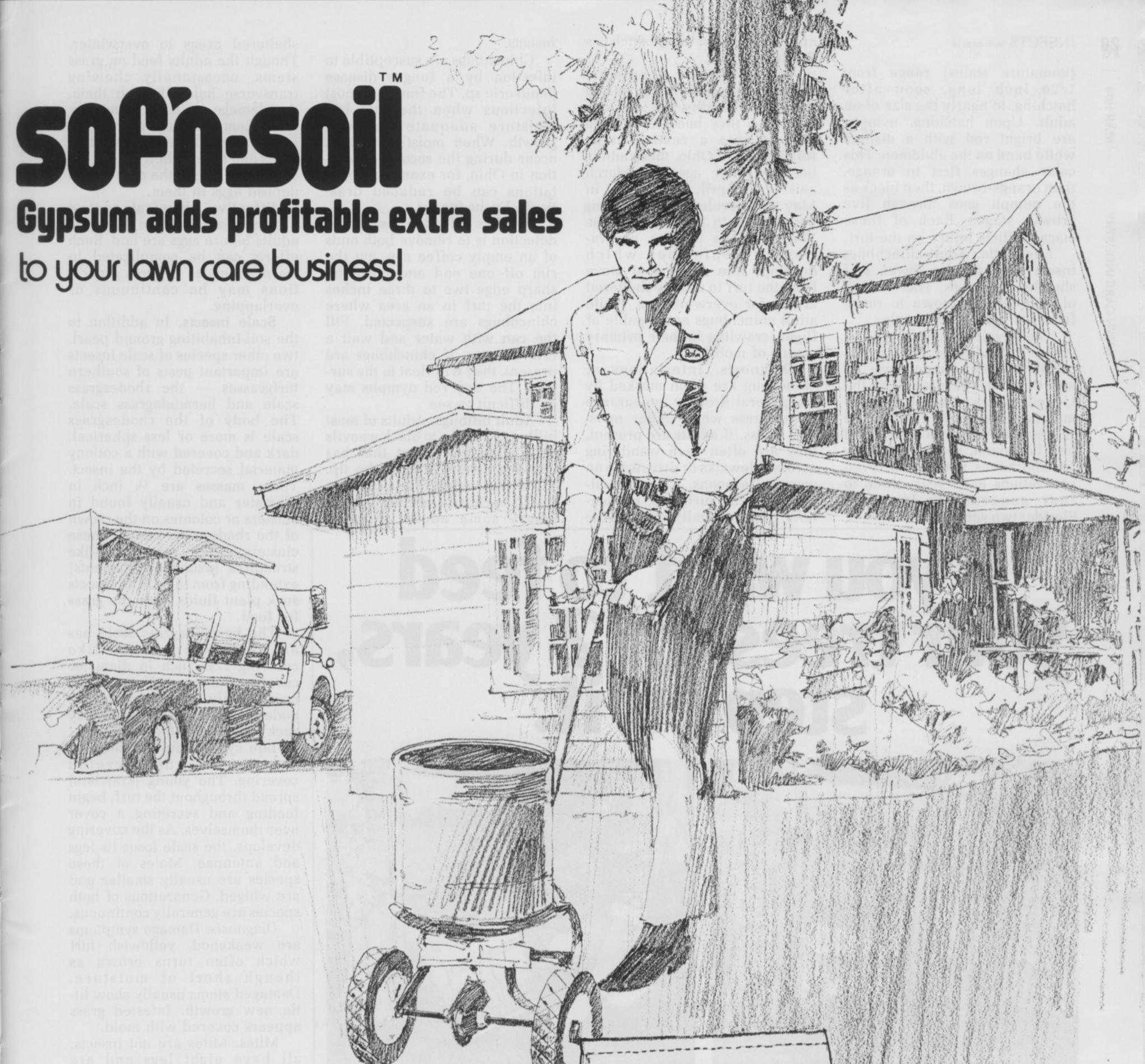
Suite 8, Township Square Building
Hook and Calcon Hook Roads
Sharon Hill, PA 19079

Phone: (215) 461-6331

Circle 148 on free information card

Sof'n-Soil™

Gypsum adds profitable extra sales to your lawn care business!



Sof'n-Soil™ Lawn & Garden Gypsum is a natural soil conditioner you can depend on to help boost your business two ways, two times a year.

In Spring, application of Sof'n-Soil gypsum helps make fertilizers work more effectively all season long by loosening up heavy clay. This allows root systems to develop normally to keep lawns thriving all summer.

In Fall, application of Sof'n-Soil gypsum works like health insurance to protect against the harmful effects of winter de-icing salt. Sodium chloride is toxic to most plants, causes heavy clay soils to tighten, keeps water from leaching out the salt. The available calcium in Sof'n-Soil gypsum replaces toxic sodium attached to the clay soil particles, permits new seed or sod to grow normally. Look into the multi-profit opportunities of adding Sof'n-Soil gypsum benefits to your services. Remind ecologically-conscious prospects that Sof'n-Soil gypsum is non-toxic, noncaustic, harmless to plants, pets and people. ■ For specifics, write to us at 101 S. Wacker Dr., Chicago, Ill. 60606, Dept. LC-39



Circle 124 on free information card

CHEMICALS DIVISION

UNITED STATES GYPSUM

PRIMARY SUPPLIER OF SECONDARY PLANT NUTRIENTS

(immature states) range from 1/20 inch long, soon after hatching, to nearly the size of an adult. Upon hatching, nymphs are bright red with a distinct white band on the abdomen. This color changes first to orange, then orange-brown, then black as the nymph goes through five growth stages. Each of these stages inflicts injury on the turf.

Life cycle. Adult chinchbugs insert eggs in the lower leaf sheaths of grasses. The number of eggs laid is known to range from 233 to 289 per female.

The development of eggs and stages thereafter is directly dependent upon temperature — and therefore location — in the United States. One generation may take six weeks at 83°F. and 17 weeks at 70°F. In south Florida and Louisiana, generations may be continuous with up to seven generations each year; three to four generations in north Florida; two generations in Ohio;

and one in an area such as Rochester, N.Y.

In southern regions, chinchbugs remain active during the winter months, but in northern areas they become inactive and go into a resting stage (diapause). In Ohio, these adults become active again in March and early April, laying eggs in May that develop into damaging populations in July and August. They produce another generation in September which develops into adults that move from the turf to nearby sheltered areas for overwintering. While adult chinchbugs are capable of flight, crawling is their primary means of mobility.

Diagnosis. Infestations of chinchbug are often masked by the general drouthy appearance of turfgrass when under moisture stress. If adults are present, they are often seen wandering across sidewalks or driveways on warm afternoons. Close examination of the turfgrass, particularly thatch, usually exposes the

insects.

Chinchbugs are susceptible to infection by a fungus disease *Beauveria sp.* The fungus is most infectious when the turf has moisture adequate for good growth. When moist conditions occur during the second generation in Ohio, for example, populations can be reduced drastically by the fungus.

Another effective method of detection is to remove both ends of an empty coffee can, cut the rim off one end and push the sharp edge two to three inches into the turf in an area where chinchbugs are suspected. Fill the can with water and wait a few minutes. If chinchbugs are present, they will float to the surface. The tiny red nymphs may be difficult to see.

Adult billbugs. Adults of most billbugs are gray to black weevils with a distinct snout that has chewing mouth parts at the tip. All of their adult life is spent in thatch except in northern areas where some adults move to

sheltered areas to overwinter. Though the adults feed on grass stems, occasionally chewing transverse holes through them, the damage inflicted is usually minor compared to that from the larvae. Some lay eggs in feeding holes and others chew slits in the stems, just above the crown, and deposit eggs in them.

Effective chemical control programs can focus on removing adults before eggs are laid. Such efforts can be complicated in warm climates where generations may be continuous or overlapping.

Scale insects. In addition to the soil-inhabiting ground pearl, two other species of scale insects are important pests of southern turfgrasses — the rhodesgrass scale and bermudagrass scale. The body of the rhodesgrass scale is more or less spherical, dark and covered with a cottony material secreted by the insect. These masses are 1/8 inch in diameter and usually found in clusters or colonies on the crown of the rhodesgrass plants. These clusters usually have hair-like structures (excretory filaments) extending from them. The insects suck plant fluids from the grass for food.

The bermudagrass scale has an oval, white paper-like covering 1/15 inch in diameter covering the insect. These scales are usually clustered at the nodes of grass stems, where they suck juices from the plant.

Life cycle. Adult females lay eggs within the secreted covering. The young (crawlers) spread throughout the turf, begin feeding and secreting a cover over themselves. As the covering develops, the scale loses its legs and antennae. Males of these species are usually smaller and are winged. Generations of both species are generally continuous.

Diagnosis. Damage symptoms are weakened, yellowish turf which often turns brown as though short of moisture. Damaged stems usually show little new growth. Infested grass appears covered with mold.

Mites. Mites are not insects; all have eight legs and are closely related to spiders. Though the winter grain mite has been known to cause some injury, serious damage from this is apparently uncommon on northern turfgrasses. In the South, the bermudagrass mite is a serious pest. This mite is extremely small, the largest being only 1/125 inch long. They are not visible to the naked eye and are often carried by other insects frequenting turf. Only bermudagrass is affected by this mite.

Life cycle. The life cycle of this mite requires about one week for completion. Eggs, laid under the leaf sheath, hatch quickly in warm weather. The mites feed in this area by the hundreds, sucking fluids from the plant. Infested stems turn yellow, then brown and die.

Diagnosis. Mite feeding causes shortening of the stem internodes, causing tufts or rosettes to appear at these locations. Examination of leaf sheaths with a high-magnification (10 power or more) hand lens reveals the creamy white, worm-like mites.

Greenbug. The greenbug is an

If you want to feed your trees for 2 years, step on it.



The Agriform fertilizer probe makes tree feeding fast and economical. It's simple. Take the probe and step on it. Just punch holes around the drip line of the tree.



Drop the Agriform Tablets down into the root zone and walk away, for two years. No fertilizer bags to mess with. No spikes to hammer (and break). And, they won't burn or leach away.



You can fertilize a 4" diameter tree for two years for less than \$1.00. And the money-off coupon that comes with each probe saves you \$3 to start with. Agriform Tablets — nothing could be faster, easier, safer, or more economical.



Order your Agriform fertilizer probe for \$6.99 and we'll give you a \$3.00 coupon for Agriform Tablets

Sierra Chemical Company
1001 Yosemite Drive
Milpitas, California 95035

Please send me _____ probe(s). I have enclosed a check for \$6.99 each. Don't forget the coupon worth \$3.00 toward my purchase of a case of Agriform Tablets for each probe I ordered. Offer expires June 1, 1980.

Name _____

Firm _____

Street _____

City _____

State _____

Zip _____



AGRIFORM®

Agriform (T) is used as a trademark of Sierra Chemical Company for its brand of controlled release fertilizers. ©1979 Sierra Chemical Company.

aphid, well recognized as a pest of small grains and sorghum in the central and southwestern states. Although scattered references to this aphid on perennial bluegrass date back to 1912, it was not considered a serious pest until the early 1970's, when noticeable damage was reported in Illinois and in Dayton, Ohio. Since then, severe injury has increased sharply in these states and damage has been reported in Indiana and Wisconsin.

Some lawn care firms in southern Ohio report that an average of two to three repeat applications of insecticide was required to keep damage under control last year. In cases where infestations were not controlled, damage was so severe that part or all of the lawn had to be replaced.

The greenbug is a soft-bodied insect, 1/16 inch long, light green with a darker green stripe down the back. The legs are green ex-

cept for the tips, which are black. Two short tubes extend out behind the aphid. Feeding is accomplished by insertion of the piercing mouthpart into the grass blade to suck out plant fluids. Salivary fluids are also injected into the plant, causing the tissue around the probe point to die.

Life cycle. The life cycle of the greenbug on bluegrass has never been studied, therefore, information on the overwintering stage, if any, is not known. Lawn care firms report populations begin to appear in late June and may continue to November if the fall is extended.

Greenbugs give birth to live young, most of which are female. Optimum temperature for development is 75°F. A newly born aphid can begin producing young after 7 to 10 days. Mating is not necessary for reproduction. Winged forms are produced in the fall.

Diagnosis. Although damage is frequently first noted in the

shaded areas under trees in the yard (however, it is not a tree aphid), it also often occurs in open, sunny areas of the lawn. Probing and injection of salivary fluids by the aphid causes dead leaf tissue to turn yellow to light orange, then darker orange, and finally to brown as the plant dies. Examination of infested turf reveals 20 to 30 or more aphids on the grass blade. Population of 2,000 to 3,000 aphids per square foot are common on infested lawns. Lady beetles, orange with black spots on the back, are often seen feeding on the aphids in such lawns.

Control: Application of the target principle

Control of leaf-, stem- and thatch-inhabiting pests is less difficult to achieve than control of those inhabiting the soil. The principle of controlling this group of pests is the direct op-

posite of that for soil pests.

In this case, the objective is to leave the insecticide on the leaves, stems and thatch. Control of the target pest is accomplished in the following ways: (1) *Initial contact* of the insecticide with the insect; (2) *Future contact* of the insect with insecticide residue left on the thatch, by the insect feeding on treated foliage, or a combination of both.

Initial contact. Liquid applications have the greatest impact on the insect population within the first 24 to 48 hours after application. Insects are either killed by initial contact with the insecticide the day application is made or the night following treatment by contact with residual and consumption of treated foliage. The latter is particularly important for chewing insects such as cutworms, sod webworms, armyworms, etc.

The initial impact of granular treatment is less than that from

to page 24



Embark® Plant Growth Regulator Puts You In Command—



*Read label instructions carefully before application.

Embark® is a registered trademark of the 3M Company.

Slows Turf Growth When and Where You Need It.

This spring and summer, you decide when to send your mowers into action!

"Embark" Plant Growth Regulator reduces turf growth without injuring grass or inhibiting root development. That means less mowing and more time for other jobs.

A spray application of "Embark" Plant Growth Regulator on actively growing turf lasts up to eight weeks.

For hard-to-mow areas—roughs, along fences, highway embankments—"Embark" Plant Growth Regulator keeps most commonly-grown species* of grass on hold. Saves equipment and labor. Plus takes the pressure off a busy season.

This year make "Embark" Plant Growth Regulator part of your turf management. It's the common sense way to cut mowing and trimming costs.

Distribution of "Embark" Plant Growth Regulator for commercial turf is planned for many areas of the country this season. For a listing of "Embark" Plant Growth Regulator distributors in your area, write:

Agrichemicals/3M
223-6SE, 3M Center
St. Paul, MN 55101

Embark® Plant Growth Regulator

is available at these locations:

Wilbur-Ellis Co.
696 Naplus Street
P.O. Box 935
Chula Vista, CA 92012
Attn: Ralph Cramer

Wilbur-Ellis Co.
P.O. Box 1286
Fresno, CA 93715
Attn: Don Niboli

VanWaters & Rogers
1363 South Bonnie Beach Place
Los Angeles, CA 90023
Attn: Paul Sanders

Moyer Chemical Co.
1310 Bayshore Highway
P.O. Box 945
San Jose, CA 95112
Attn: Donald Meyer

VanWaters & Rogers
2256 Junction Avenue
San Jose, CA 95131
Attn: Bevan Cates

Moyer Chemical
230 East Dyer Road Unit
Santa Ana, CA 92707
Attn: Pat Sano

Wilbur-Ellis Co.
14111 Freeway Drive
Santa Fe Springs, CA 90670
Attn: Mike Bell

Walter W. Fuchs
Turf Products Limited
2N255 County Farm Road
West Chicago, IL 60185

Riley Lawn & Golf Equip. Corp.
6810 Guion Road
Indianapolis, IN 46268
Attn: Robert Scobee

The Dalton's Incorporated
U.S. 30 East
P.O. Box 246
Warsaw, IN 46580
Attn: Don Dalton

W. F. Miller Co.
1593 South Woodward
Birmingham, MI 48011
Attn: Russ Hancock

R. L. Gould Company
3711 Lexington Avenue North
St. Paul, MN 55112
Attn: Gordon Miller

Turf Supply Company
2970 Dodd Road
St. Paul, MN 55121
Attn: John Kolb

VanWaters & Rogers
3950 Northwest Yeon Avenue
Portland, OR 97210
Attn: Romeyn Kruiswyk

Wilbur-Ellis Co.
P.O. Box 8838
Portland, OR 97208
Attn: Gordon Hidman

VanWaters & Rogers
8201 South 212th
Kent, WA 98031
Attn: John W. Barber

Wilbur-Ellis Co.
1200 Westlake Avenue North
Suite 10000
Seattle, WA 98109
Attn: Jack Fisher

Reinders Brothers, Inc.
13400 Waterwon Plank Road
Elm Grove, WI 53122
Attn: Ed Devinger

**That's extra profit
you in the face. Cash**





...t starting
...n in with

TERSAN[®]

fungicides

Most customers' lawns are targets for disease—and an opportunity for add-on profits—with the TERSAN disease control program.

It's like finding money in the grass. Because disease control is add-on business, an additional service to your basic lawn care programs, with your regular customers. And at higher margins than your other services, too.

But you have to spot the disease symptoms early, identify the disease, and treat it quickly with the right fungicide. That's where the TERSAN disease control program comes in.

The four TERSAN fungicides give you a specific, effective control for every lawn disease you're likely to spot. No guesswork. No spray-and-hope, cure-all treatments.

Plan now to pick up those extra profits right under your feet. Mail in the coupon for more facts on identifying and controlling lawn diseases.

E. I. du Pont de Nemours & Co. (Inc.)
TERSAN Lawn Products—Room N-2533
Wilmington, Delaware 19898

Please send me your literature on lawn disease control.

Name _____ Title _____

Company _____

Address _____

City _____

State _____ Zip _____

Services offered _____

No. of present accounts: _____ No. of employees: _____

With any chemical, follow labeling instructions and warnings carefully.

DU PONT Lawn Products

Circle 137 on free information card

INSECTS *from page 21*

liquids because the insecticide is applied dry. Contact begins only when the granule absorbs moisture, and releases the insecticide. For this reason, granular formulations are not effective against pests such as aphids or mites unless the insecticide is systemic.

Future contact. The residual activity of liquids and granules have their respective advantages and limitations in terms of control beyond the first 24 to 48 hours after application.

In addition to providing initial control of leaf and stem pests, liquids leaves residues that remain in the thatch, providing control of thatch inhabitants for some time. The length of this residual activity is, however, generally shorter than that for granules. The reasons for the longer residual with granules is: They are deposited in the thatch where, unlike liquids on the foliage, they are protected from light which rapidly breaks down the insecticide; also, insecticide is leached off granules over a period of time which usually exceeds the length of residual activity from liquids.

Generally, the length of residual varies considerably with the insecticide and environmental conditions under which it is used. For most insecticides, data expressing residual as parts per million (ppm) over time have been obtained. However, the practical meaning of these data, in terms of actual impact on insect populations in a lawn, is not understood, particularly where the influence of diminishing residues on insects that survive the initial impact of the treatment is concerned. Recent data taken from 17 Ohio home lawns treated by a lawn care firm shows these diminishing residues were important in removing chinchbug that survived the treatment and those that hatched 10 to 14 days after treatment.

Application objectives. The objective of liquid application is to deposit insecticide on the foliage and thatch to the depth frequented by the target pest. The volume of liquid applied must be adequate for complete and uniform coverage. Coarse sprays are best because they produce minimal drift. When the thatch or surface soil is very dry, irrigation the day before treatment helps facilitate movement of the liquid into the thatch.

The volume needed is also dependent upon the nature and density of the thatch. Thatch in southern turfgrasses such as St. Augustinegrass is dense and deeper than those of northern turfgrasses. In order to penetrate the deeper thatch, a volume of 20 to 40 gallons per 1,000 square feet is essential. Volumes less than that are simply inadequate. On northern turfgrasses, thatch is usually one inch or less. Under these conditions, three to four gallons per 1,000 square feet should be used.

The initial objective of granular application is to get the material as deeply into the thatch as possible. To do so, the foliage should be dry so the granules fall off easily.

Post-treatment irrigation. The

advisability of irrigation following liquid application depends upon the target pest. If the insect is one which lives on the foliage and stems (bermudagrass mite, greenbug) or one that consumes the foliage (cutworms, armyworms, sod webworms) irrigation and mowing should be delayed for at least 24 to 48 hours after application. This allows time for contact activity and consumption of treated foliage.

If the primary target is a thatch inhabitant (chinchbug, adult billbug) and the volume applied is four gallons per 1,000 square feet, a light irrigation is sometimes helpful if done before the spray dries. When large volumes of spray are applied, post-treatment irrigation is not necessary. Rainfall or irrigation a week or so after treatment can briefly reactivate the insecticide residue in the thatch.

Irrigation following application of granular insecticides is essential to move the insecticide

off the granules and into the thatch, therefore, only a light irrigation ($\frac{1}{8}$ inch or so) is needed. Excess irrigation only reduces the residual in the zone occupied by the target pest.

Insecticide selection. The initial decision whether or not to include an insecticide in the treatment program of a lawn care business, or to discontinue or change insecticides, is an important one. The basis for such a decision must be the occurrence of insect pests in the market area covered and the extent to which they are responsible for turf damage. In other words, will it really make a difference?

If the answer is "yes," the next step is to select an insecticide which is safe and effective against the target pests and yet is within the realm of economic feasibility. The question is which insecticide meets these criteria and is labeled for that purpose?

Much preliminary information can be gained on

this point from discussions with other lawn care firms, and pesticide sales persons in the area. However, once such local information is obtained, it should be discussed, preferably in person, with an entomologist familiar with turfgrass insects of the area and the principles of insecticides and their activity in turf. Such a consultation should provide the businessman with sufficient knowledge to form the basis for a decision on which material to use.

Insecticides and other means of insect control will change with new research findings and as use and label limitations permit. However, the principles underlying achievement of successful control will not change. Current information and lists of recommended materials are available from the state extension services. For this reason, reference or recommendation of specific insecticides was generally avoided in this article.

"I could sure use a rugged mid-sized rotary that really maneuvers."



VIRGINIA from page 1

is going to blame you anyway," Hall said.

Jerry Faulring, president of Gaithersburg, Maryland-based Hydro Lawn told the audience that many companies have actually specialized too far to the extent that they are not providing the full scope of the customer's

needs and expectations. In a survey his company conducted last year of his 10,000 customers, 49 percent said they would pay extra for mechanical thatch removal, 32 percent said they wanted chemical pest control for ornamental trees and shrubs, 36 percent said they wanted root zone fertilization for their trees

and ornamental plantings, and 14 percent said they wanted a mowing service.

Dr. John R. Hall III, extension turf specialist at Virginia Polytechnic Institute and State University (VPI) told the audience that by only providing fertilization, insect and weed control that too many lawn care companies are "providing only 30 percent of what the lawn needs to remain healthy." Dr.

Hall suggested that lawn care companies should better educate the customer as to what a lawn needs, provide those services, and charge for it.

Other speakers included Dr. Houston B. Couch, professor of plant pathology at VPI; Philip Catron, regional agronomist for ChemLawn Corp. based in Westminster, Md.; and Dr. Robert K. Reynolds, VPI extension specialist.



Catron: "Are you buying short-term customer satisfaction when you should be considering long-term customer education? Also, rigid programs aren't always right when you have so many factors — like weather — that don't cooperate. Your programs have to be flexible..."



Couch: "Your customers say they are not willing to pay for a preventive disease program? Ask them if they have a life insurance policy. Then ask them if they are mad because they haven't collected on it yet. It's just about the same thing..."



Officers of the Virginia Turfgrass Council posed for a picture after re-election. They are, from left: Kenneth P. Giedd, vice president; Rex H. Harris, assistant secretary-treasurer; Earl H. Odell, secretary-treasurer; and Gus Constantino, president.

PRODUCTS

Coated grass seed available in spring

Oseco, Inc., Brampton, Ontario, has announced that it will introduce a coated grass seed beginning this spring.

For further information, contact the company at Oseco, Inc., P.O. Box 219, Brampton, Ontario, Canada L6V 2L2, or call 416-457-5080.

REGULATION

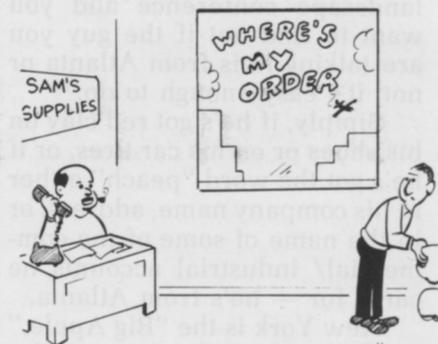
1,700 Ohio applicators certified; 14% of total

More than 1,700 commercial applicators were certified in Ohio through July of last year for turf pest control.

The total of 1,749 represents 14.8 percent of the 11,829 commercial applicators certified in the state, giving an approximate estimate of the amount of turf activity in the state.

The largest number of commercial certified applicators was in the agricultural pest control classification, with a total of 3,211. Second-largest classification was the domestic, institutional, structural and health-related pest control classification with 2,251.

Turf pest control was the third-largest classification. Fourth was ornamental plant and shade tree pest control with 1,163. Fifth was industrial vegetation control with 1,053.



It's Davis from Metro Lawns. He says to look out the window.

A lot of our customers have been wanting a mid-sized mower that's built tough to take it, and that's highly maneuverable at the same time.

So our engineers came up with the amazing Turfcats.

It's amazing because it's absolutely packed with features that help you get your medium-sized mowing jobs done faster and better than ever.

First, you have a choice of a 50" or 60" deck. (They're interchangeable.) Fully articulated, they closely follow ground contours so you get a smooth, even cut with practically no scalping.

Deck design lets you trim close, and also gives super clipping dispersion. The deck raises and lowers hydraulically for curb climbing and transport. And you can adjust cutting height from 1" to 4".

Then, the three-wheel, wide track design gives the Turfcats great stability on slopes. And the foot-operated hydrostatic drive lets you steer and maneuver while changing speeds or going from forward to reverse.

How about hill climbing? It's a breeze with the power delivered by the husky 18-HP Kohler overhead valve engine. And you can expect a long engine life filled with good fuel economy.

Plus, the Turfcats are quiet. All controls are within easy reach. And it might very well be the most comfortable riding rotary in the world.

Ask your Jacobsen distributor for a Turfcats demonstration. And have him explain about the many fine features that customers want.

The more you listen to what he has to say, the more you'll know we've been listening.

We hear you.

**JACOBSEN
TEXTRON**

Jacobsen Division of Textron Inc.

Circle 120 on free information card

LAWN CARE INDUSTRY Marketplace



Atlanta

If you had a dollar for every street, business, restaurant, bar or boutique in Atlanta that has the word "peach" in its name somewhere, you'd have a pretty healthy net for a typical chemical lawn care or lawn maintenance businessman in that city.

Also, if you're at a turf or landscape conference and you want to find out if the guy you are talking to is from Atlanta or not, it's easy enough to do.

Simply, if he's got red clay on his shoes or on his car tires, or if he's got the word "peach" either in his company name, address, or in the name of some of the commercial/ industrial accounts he cares for — he's from Atlanta.

New York is the "Big Apple," we have referred to Los Angeles as the potential "Big Orange" in lawn care, and Atlanta has to be

the "Big Peach."

For one thing, it is "ChemLawn South" to Columbus, Ohio's "ChemLawn North." The company established itself as a force in Atlanta in the late 60's, and there have been others:

At one time, Lawn-A-Mat, Westbury, N.Y. had five franchisees working the territory; Lawn King, Fairfield, Conn. two; Lawn Doctor, Matawan, N.J. six; and National Turf Service out of Washington, D.C. also tried to cash in on the chemical lawn care market.

Of the originals in chemical lawn care, ChemLawn is stronger than ever with what its competition estimates at 12,000 to 14,000 home lawns on the books, and Lawn Doctor has two successful franchises. Add to this Rollins Lawn Care, a growing

factor in the industry using Atlanta as its base, Green-Lawn out of Louisville, Ky., and spice it with the entrance of Amoco Liqui-Lawn in suburban Conley this lawn care season, and you have a competitive and lucrative chemical lawn care market in Atlanta.

Atlanta is also the home of ChemLawn's Commercial Division, which services commercial/industrial accounts. This market is also very competitive, with AAA Lawn Industries Inc., CLDM, Inc., and many others bidding against each other on landscape maintenance jobs.

A cup of coffee and a late afternoon on a not-too-busy January Thursday is all that George Morrell needs to get cranked up and talking about lawn maintenance.

He is co-owner of **CLDM, Inc.**,

Decatur — it stands for Comprehensive Landscape Design and Maintenance. And once the 34-year-old former New Jersey all-state high school tailback does get talking about his business, two things he talks about are "cold calls" and "face contact."

"When I make a cold call on a commercial or industrial account," he told LAWN CARE INDUSTRY recently, "the first thing I do is look around for a place that obviously needs help with their lawn maintenance."

He often does not make appointments, but rather just walks in, finds the right person, and begins to explain what he has to offer.

"Probably 49 out of 50 are not initially interested," he said. "But my main objective at that point is to simply introduce myself rather than get the job on the spot. If just by knocking on the door I can get my business card into their hand, I feel successful. Then I try to get our form contract into their hands, again not to necessarily sell them, but just mostly to outline what we do and our performance, to try and impress upon them that we are not a fly-by-night company. It's soft sell all the way, I try not to come across as a salesman."

Morrell says that one of the hardest things for him to do is to go into an account and ask for more money. But he recently had a 75 percent success with his accounts asking for a 10 percent hike. And he did it because he believes in "face contact."

"Public relations is so important," he said. "Face contact a couple times a year to make sure the account is happy, to get all of his problems straightened out. With this kind of relationship, it's not hard to go back and ask for more money. If we hardly ever see each other, the job becomes more difficult."

When he does have to ask for a price increase, he again uses the soft-sell approach of "can you help us out?" He reminds the account that inflation is continuing, the minimum wage is going up, the price of say, pine straw, is up 21 percent, along with higher costs in many other areas.

Morrell and his partner started CLDM three years ago. After the first year they had \$40,000 worth of business on the books, the second year \$210,000, last year \$385,000, and they expect to gross almost a half-million dollars this year, about half design/build and half maintenance. His maintenance business breaks out to about one-

by Bob Earley, editor
and Dan Moreland, assistant editor

third apartments, one-third condominiums, and one-third small commercial sites.

"We lean away from apartments as much as we can," he said. "The reason is because you are dealing with too many people — the owner, the management, and the residents themselves. That's three levels of people to make happy. If occupancy is down, they start thinking about cutting down on their maintenance. Also, there is often a new resident manager every year, and you often have to sell the account all over again."

He says that condominiums are more image-conscious, "they want to keep up the appearance of the landscape so they can please the residents, and sell new ones."

He utilizes four 72-inch Hustler mowers manufactured by Excel Industries, Hesston, Kan., and is also happy with his 60-inch commercial mower manufactured by Jacobsen Div. of Textron, Inc., Racine, Wis. He also uses a 36-inch Bobcat, manufactured by Wisconsin Marine, Inc., Lake Mills, Wis. for the smaller jobs. He uses 20-inch Jacobsen commercial mowers, and says he has fewer breakdowns because the unit has 30 percent fewer moving parts, and maintenance is easier too. He replaces the engines every three years and the wheels every year.

As far as fertilization goes, Morrell says that his philosophy is to keep the grass as green as he can on his commercial accounts, but cut it as little as possible. "This is not a home lawn situation," he said. "We use about 3/4 to four pounds of nitrogen on the bermudagrass we care for, and up to 4 1/2 pounds of nitrogen for the fescue."

Morrell starts his workers out at \$3 an hour, and bumps them up to \$3.75 after a couple of weeks if they seem to have promise. Crew leaders earn a minimum of \$4 an hour, his spray truck operator about \$11,000 or \$12,000 a year, and his manager \$13,000 a year.

"It used to be that we would send out a crew to do the whole job," he said, "but now because of the labor and technical situation, we are beginning to break jobs down and specializing." He is custom-applying fertilizer with a spray tank truck manufactured by Strong Enterprises, Inc., Miami, and also will be doing the same with his insecticide applications.

The same concept applies for trimming shrubs. "We can't af-

ford to have two or three \$250 trimmers on a crew truck," he said. "This year we will be going to having just one crew handling all of the trimming.

"There are too many supervisory hours with the big crews," he said. "If you can cut down on management, it makes you more efficient, and you produce a better end product at a better profit." He said that he feels good if he nets 10 percent profit on his gross receipts.

"Atlanta is a funny market," says ChemLawn Corp. vice president Dr. Robert Miller. "The growth potential for a city of this size doesn't equal what it might be for a midwestern city. It is a more difficult city to service because of rolling terrain, larger lots, with much natural and planted vegetation to work around, although the average lawn area is only 7,500 square feet."

Atlanta is the company's southern base of operations, although Dr. Miller said that he and some other Atlanta-based personnel will be moving back to ChemLawn's original Columbus, Ohio offices soon. ChemLawn operates two residential lawn care branches in Atlanta, and the city is also headquarters for ChemScape, Poseidon and its Commercial Division. ChemScape is the company's ornamental and tree spraying division, Poseidon is its irrigation division, and the Commercial Division handles commercial/industrial maintenance, including mowing. The Commercial Division is headed up by Phil Christian, and will be expanding to Indianapolis this lawn care season.

Dr. Miller said that 80 percent of the lawns ChemLawn services are K-31 tall fescue. The rest is bermudagrass, zoysiagrass and centipedegrass.

He said most of the tall fescue lawns have to be overseeded each fall, and that ChemLawn provides information about seeding and offers specific ChemLawn recommended seed shipped from Seaboard Seed Co., Bristol, Ill. *Rhizoctonia* brown patch is a problem on tall fescue lawns; armyworms and grubs are the major insect problems, although they can usually be handled by insecticide treatments. Weed problems are not as great in Atlanta as they are in the north, although purslane, spurge and crabgrass are common on Atlanta lawns, Dr. Miller said.

ChemLawn is on a five-application program from January through mid-December,

four of them liquid applications.

Because the lawn care industry has grown so fast in the last five to six years, one of the problems many lawn care companies have had is that they expanded before they were really ready to. A little too much ambition, coupled with not enough experience, has caused serious problems for more than one lawn care company.

Rollins Lawn Care, a division of Rollins, Inc., a \$300 million, Atlanta-based company, is not going to have that problem, and its because of people like president Fred Rowley and 38-year-old division operations manager Floyd Franklin.

Rowley, Franklin and their staff people have put together one of the most deliberately developed programs and plans for expansion in the industry. Franklin signed on with the company well before the first Rollins customer lawn was sprayed two lawn care seasons ago, and set up his program based on research of the competition and interviews with industry experts and manufacturers.

Franklin is built like a college linebacker, and has the tenacity of one when it comes to attending as many conferences as possible, talking to as many people in the industry as possible to gain information that will help his business, shopping around for new materials or old materials at better prices — and is to a great extent willing to share basic information with newcomers in the industry.

Rollins presently has one branch to the northeast of Atlanta, and will be opening a second one in the northwest section of the suburbs this lawn care season. The company also has branches in Memphis, Tenn., Augusta, Ga. and Charlotte, N.C. Franklin said the company is "fine tuning" its lawn care operation this lawn care season, but will most likely move into three new cities in 1980, most likely in the Southeast.

To spend a day with Franklin is, to say the least, a lawn care experience. A visitor gets the feeling Franklin could talk lawn care well into the night. The following is a capsulization of some of his thoughts on the lawn care industry:

"Scheduling and routing is so important, you have to watch that you don't get spread out too thin," he told LAWN CARE INDUSTRY. "Concentration is the key, and we rely on our people to route themselves the way they feel is most efficient." Franklin

said that if a man can handle between 20 and 25 lawns a day, the lawn care company is not too spread out.

"We've tried just about every form of advertising and promotion that you can think of," he said. Although the company has found direct mail and newspaper advertising the most effective in obtaining leads, other forms of promotion Rollins has tried include: home shows, shopping center promotions, offering discounts to clubs, offering free service to a church for a mention in the church bulletin, billboards, paying for referrals, "cloverleafing" neighbors of existing customers, door hangers, offering free service to high school football fields for a mention in the program.

Franklin even tried an airplane banner on a Saturday afternoon. The only call he got was a person complaining that the plane was flying too low over his home. He feels that home and flower shows are not worth the time and money because "at that time of the year (spring) we can't afford to staff a home show."

He feels strongly against using phone solicitations, because "the quality of phone leads is bad. You waste time and equipment, and more importantly, it hurts your applicator/salesman's morale."

Response rate is variable on direct mail, Franklin said. He feels it has more to do with the time the piece is mailed rather than the number of times it is mailed to a person. "You hear response figures all the way up to four or five percent," he said, "I think if you can get two percent that you are doing well." He said the company averages a sale on about 50 percent of its leads.

"Cloverleafing" is a handy term for the practice many lawn care companies across the country do when they try to get neighbors of their existing customers signed up for a lawn care program. Rollins mails special promotions to next-door neighbors, and the two homes directly across the street from an existing customer.

The Atlanta branch utilizes seven spray tank trucks manufactured by Strong Enterprises, Inc., Miami, with fiberglass, 1,200-gallon tanks manufactured by Tuflex Mfg. Co., Fort Lauderdale, Fla. The units also have 200-gallon "drop" tanks for pesticide mixing. The unit also utilizes John Bean 20-20 pumps and John Bean spray guns, manufactured by FMC Corp., Agricultural Machinery

Div., Jonesboro, Ark.

The Rollins program calls for five trips from January through November. The late winter trip includes preemergence herbicide for control of crabgrass, goosegrass and other grassy weeds. It also includes a broadleaf herbicide and a complete fertilizer application. The spring trip (mid-March through April) includes a broadleaf herbicide and a complete fertilizer including slow-release nitrogen.

The late spring (mid-May through June) trip includes a complete fertilizer using slow-release nitrogen. The early (September through mid-October) trip includes a complete fertilizer including slow-release nitrogen, and an insecticide for control of armyworms, sod



Miller



Christian

webworms and grubs. The early fall (September through mid-October) trip includes a complete fertilizer including slow-release nitrogen, and an insecticide for control of armyworms, sod webworms and grubs. The late fall (mid-October through November) trip includes a complete fertilizer and broadleaf herbicide as needed to control broadleaf winter annuals. This is a cool-season grass program. There is a separate program for warm-season grasses. Cost for an 8,500-square-foot lawn is \$138. Franklin says the average Rollins charge is \$143.30.

Before we get to the facts and figures to explain how 36-year-old Herman Carruth grossed \$2.4 million last year with Atlanta's AAA Lawn Industries, Inc. — \$1.4 million in maintenance and \$1 million in design/build — here are two short vignettes to explain a little bit about the man.

Recently a visitor pulled up to "Triple-A's" offices in suburban Tucker two hours late for a meeting, cringing at the thought of having to face a two-hour behind-schedule Carruth. The visitor walked in the door to be greeted by a "how the hell you doing?" and a grand tour of Carruth's impressive facilities.

Another story. Four years ago, George Morrell was up in New Jersey, out of a job and wanting to get back to the South, where he went to college, and in the landscape maintenance business. He called Carruth for a job. No openings, but Carruth told him to come down anyway, lent him a truck and materials and equipment, until Morrell could line up his own accounts to go into business for himself. Morrell's CLDM, Inc. is now one of Carruth's competitors, but on a friendly basis.

Carruth has been in business since 1971, and has a few areas of the business he feels strongly

about:

- "Anything to be different to get the account."

- "You've got to have a good shop to back you up to make money in the maintenance business."

- "You get new accounts by having satisfied customers that are willing to give you referrals."

- "Once you get a referral, it's very easy to blow it because of overconfidence. Treat it just like a cold call."

- "Sell maintenance 'small.'"

- "You can expect no contract to carry more than a 30-day cancellation clause. Anyway, contracts should be used more as a marketing tool."

- "Know who your key accounts are and keep them happy." Carruth and maintenance supervisor Rick Baird, 36, say that they will put their shop up against any in the country — including its \$10,000 parts inventory. "It's very important to have full-time mechanics and the tools and inventory to keep your equipment running," Baird said. "Downtime will kill you in this business."

Baird oversees 22 crews of three to seven men during peak times of the season. This year he will be going to a system of having seven or eight supervisors for about three crews apiece. "The crews were running me last year," Baird said, "and I didn't have any time for planning." This year the company is also doing away with a time clock and going to what Baird calls a "ticket system" where the crew foreman fills out a ticket for each job done and amount of hours worked. He feels it will be more efficient.

Bill Poythress, 33, is in charge of marketing for AAA Lawn Industries. He says he spends about 25 percent of his time on new accounts, and about 75 percent of his time on public relations with existing accounts. On some of the larger maintenance contracts, he is in daily communication with the principals.

"We believe in selling maintenance 'small,'" Poythress told LAWN CARE INDUSTRY. "You never tell them what it is going to cost them a year, but rather what it will cost them per month, or even per week."

Carruth has \$1,000 in his yearly budget for camera film, and he uses most of it before he gets ready to go in and sell a job.

"We take pictures of what the account's grounds look like at present, and then we balance that off with pictures of what our exiting accounts look like," he said. "When we get into a sales situation, we insist that the people look at what we have done in the past. Sometimes Bill even packs lunches and we drive them around to check our work."

Carruth said that five percent of his 100 accounts represent 40 percent of his business, and that he never forgets it. "These accounts, plus about 15 others, are on what we call our 'key account' list," he said. "These are the people we stay in close contact with, although we have routine inspections of all of our accounts. But on the big ones, we inspect them with the customer and explain where their money is

going."

Carruth utilizes about 20 commercial 60-inch mowers manufactured by Jacobsen Div. of Textron, Inc., Racine, Wis. and Excel Industries, Inc., Hesston, Kan. He also uses diesel-powered tractors manufactured by Kubota Tractor Corp., Compton, Calif. For hand work, each crew has three push mowers, most of them manufactured by Jacobsen.

This year AAA Lawn Industries will be going to liquid application of fertilizers and pesticides with three spray units manufactured by Strong Enterprises, Inc., Miami. They will be using a 1,200-gallon unit with a 200-gallon "drop" tank for fertilization, and two 300-gallon units for pesticide application. Baird said this will cut down on overtime for 22 crews trying to put down applications in granular form at the necessary times of the year. The company will be using Dacthal, marketed by Diamond Shamrock Corp., Cleveland, for much of its weed control.

Richard Needle, 41, owner of Lawn Doctor of North Atlanta, has been in the lawn care business since 1971. At one time in the early 70's, his franchise was one of the fastest-growing in the Lawn Doctor network.

As he relates, things were rosy in the early 70's. He and other lawn care businessmen were working a virgin Atlanta territory with homeowners who had money to spend on a unique



Morrell



Carruth

new service.

Then the 1974 recession hit, and many of the green dollars that resulted from making lawns green began to disappear, and only the strongest companies were able to weather it.

Needle was one of those lawn care businessmen, and he has some thoughts on what another recession would do to the lawn care industry — a subject that is often discussed by lawn care businessmen in these days of near double-digit inflation and foreboding forecasts by the likes of the *Wall Street Journal* and *Business Week*.

"Even though we are at a cheaper price than when I started with Lawn Doctor, if a major recession it, I would have to say that homeowners would view lawn care as a luxury service and drop it," Needle told LAWN CARE INDUSTRY recently.

He feels that high-income-bracket homeowners would keep a lawn care service, but that medium-income people would cut lawn care out of their budget.

"I would really like to feel positively that lawn care is not a luxury, but down deep I still think it is," he said. But he does have some positive feelings about what things will be like in



Franklin



Rowley

the future. As more and more reputable companies enter the industry, consumers will become more aware of what the lawn care industry has to offer.

"25 years ago, Orkin Exterminating sold its inside pest control services as a concept of necessity," Needle said. "As the years go on, I hope that our industry will be able to sell this concept too."

He, along with many other lawn care businessmen across the country, feels that this will be possible.

"As people spend more and more for sodding and landscaping, they are beginning to realize that they have a lot of money invested in their lawn, shrubs and trees," he said. "This is one of the things that we are trying to sell our potential customers on."

And speaking of selling customers, Needle also has some definite ideas about doing it — the main one being that it costs more money now than when he first got into the business.

He used to spend 10 percent of his annual gross receipts on advertising and promotion; now he pegs the figure at about 15 percent.

"With the increased competition in Atlanta today in the lawn care business, you can't get away with only spending 10 percent of your gross to get the numbers you are looking for," he said.

An example of his increased costs would be the fact that he now spends 15 cents for first-class mail handling of each of his 5,000 mailings done periodically throughout the year. Using bulk mail rates would cut this almost in half, but he explains why he pays first class rates:

"We mail our brochures in a window envelope with no return address, so people can't say 'hey, here comes some junk mail' and throw it out first thing," he said. Direct mail is just the beginning of his contract with potential customers.

He follows up the mailings with phone solicitations, even though he "personally fought phone solicitations for awhile, because I resented people calling me on the phone."

But he finally "took the plunge out of necessity," and has found that it is a useful sales technique, and that homeowners do not find it distasteful.

He now says that direct mail doesn't produce the necessary leads unless it is followed up with a phone solicitation (as an aside, it is interesting to note that many Lawn Doctor dealers this year will be using a company contracted by the home office to provide lists, labels and phone numbers through computer in place of the typical cross-indexed directory used in the past).

Between February and May,

Needle puts out two mailings to 5,000 potential customers. In two five-week periods, mailings are staggered 1,000 per week, with four girls making follow-up calls no less than three days, and no more than five days after the mailing is received by the potential customer. Needle pays a base three dollars an hour for his phone solicitors.

For bonuses, he has tried both paying for total number of leads and number of closes, but says that emphasizing closes "seems to work better" in producing quality leads. He pays one dollar per close. On 1,000 calls a week, he says he gets about 150 leads.

Once he gets the leads, he and his two part-time salesmen begin work. His salesmen are paid six percent of their gross receipts sold, or are guaranteed six dollars an hour, whichever is highest.

"This keeps the salesman from getting discouraged if he has a bad night," Needle said.

Needle was in department store retailing for 10 years when he saw an ad in the *Wall Street Journal* for a Lawn Doctor franchise. He started in the fall of 1971, and by the end of the



Baird



Poythress

year had 100 customers on the books. His business grew to the point where he was grossing more than \$150,000 annually, as the 1973 "Blue Grass Club" plaque on his office wall awarded by Lawn Doctor headquarters attests.

This was under the old Lawn Doctor program that included seeding and aerating. At that time, his average charge was \$180 a year, with some as high as \$450. His average lawn size now is about 7,500 square feet, and his average charge \$133.

This is for the newer streamlined Lawn Doctor program that does not include aerating and seeding. The basic program calls for fertilizer and insecticides, and liquid herbicides and fungicides. Fungicides are applied only on an "as-needed" basis.

Needle feels strongly that the non-seeding approach is better for a volume lawn care operation, and notes that of the six Lawn Doctor franchisees that were working Atlanta at one time a few years ago, four did not switch to the streamlined program, and those four are no longer in business.

"We compete in price with ChemLawn and others, but we feel that we can offer better service because we are more concentrated," he said. Most of his accounts are in a six-mile by three-mile square area.

His customer lawns are mostly Kentucky 31 tall fescue, but he also cares for common and hybrid bermudagrasses, and some zoysiagrass and centipedegrass. Insect problems in-

clude armyworms ("two years ago they damaged a lot of fescue, and made us some money with the fall seeding that we still do") and sod webworm. The insecticide he uses most is Dursban, marketed by Dow Chemical Co., Midland, Mich.

Weed problems include dandelion, chickweed and pennywort, and he exclusively uses Trimec, marketed by PBI/Gordon Corp., Kansas City, Kan. for control. Leaf spot is his most common disease problem, and he charges five dollars per 1,000 square feet for a fungicide spray.

Morton Fuchs started his **Lawn Doctor of Northeast Atlanta** business in 1972, and wrote \$27,000 worth of business the first year and \$75,000 the second. He built the business from there, and then sold it almost two years ago. It was not handled well, and this year he assumed his old territory and is making another go of it with his



Fuchs



Needle

son Wayne.

His basic program calls for five trips a year, with a minimum charge of \$80 for a 4,000-square-foot lawn. This is broken down to six monthly payments during the lawn care season of \$10 after an initial payment of \$20. His average lawn is about 7,000 square feet, which breaks down to six monthly payments of \$15.75 after an initial payment of \$31.50. The total is \$126. For a 10,000-square-foot lawn, the total charge is \$165 a year, broken down into six payments of \$20.62,

after an initial payment of \$41.28. These are 1978 prices.

Fuchs uses direct mail, followed up by phone solicitations. He mails 5,000 pieces at a time, and gets 250 leads, or about five percent response with the phone follow-up. He pays his phone solicitors \$3 an hour and 25 cents for each lead ("You can't fault the girl if you don't make the sale"). He estimates that he closes between 75 and 80 percent of his leads once he goes out to sell them.

He provides seeding and aerating on an "as-needed" basis. Seeding is done at a charge of one cent per square foot. If he can handle a fungicide treatment during his regular trip to the lawn, he charges between \$3 and \$5, plus the cost of the material. If it calls for a separate trip, he charges 20 percent of the customer's yearly charge, plus the cost of the fungicide.

to page 30

thick, thick, thicker

THE BEST SEED SHOULD DO MORE THAN GROW GREEN GRASS

ADELPHI Kentucky Bluegrass averaged *best over 35 other blue grasses for uniformity in turf growth and density, disease resistance, drought, heat, cold . . . and is completely free of noxious weeds.*

ADELPHI, a first generation apomictic hybrid, has been chosen by the Plant Variety Protection Office in the U.S. Dept. of Agriculture as *the standard dark green color which all other bluegrasses applying for plant protection will be compared to.*

For a thicker, greener turf insist upon the BEST. ADELPHI

For information, contact:

J & L ADIKES, INC.
Jamaica, N.Y. 11423

JONATHAN GREEN & SONS
Farmingdale, N.J. 07727

NORTHROP KING CO.
Minneapolis, Minn. 55413

VAUGHAN-JACKLIN CORP.
Bound Brook, N.J. 08805
Downers Grove, Ill. 60515
Post Falls, Idaho 83854

Canadian Inquiries: ROTHWELL SEEDS LTD., Box 511, Lindsay Ont. K9V 4L9
Other International Inquiries: NORTHROP KING CO., Minneapolis, Minn. 55413



University of Minnesota

Adelphi

(U.S. Plant Patent NO. 3150)

THE GREENER KENTUCKY BLUEGRASS

"Most backyard operators are using employes that really don't know anything about lawn care and couldn't care less," according to Larry Holtzman, owner of **Lawn Growers, Inc.** "The result is inexperienced workers are liable to go out and treat for the wrong problems and you end up with dead sod and unhappy customers."

Therefore, Holtzman, 35, trains all of his employes before they enter the field. "We hold educational clinics and seminars with our people so they feel confident when they go out and talk to the customers," he said. "We don't just hire someone to work on a truck."

He also provides continuing education programs to keep his more experienced employes abreast of new developments in the lawn care industry. According to Holtzman, the programs not only instill confidence in employes, but also help combat the high employe turnover rates experienced by many small businesses.

"We really haven't turned over many employes since I started the business in 1976 I've only had one employe leave the company," he said. Holtzman currently employs six full-time workers.

Lawn Growers is a modest-sized company which provides both liquid and granular fertilizer services, along with mechanical aeration to its approximately 1,000 accounts. About 60 percent of its business is residentially based while the remaining 40 percent is commercially based.

Holtzman, who has worked in the lawn care field almost 15 years, said the company uses a number of different chemicals to combat a wide variety of lawn care problems. "We don't use general categories of materials," he said. "We blend our fertilizers depending upon the grass being treated and the time of year." The company also uses a number of different insecticides with the most popular being Dursban and Diazinon.

Armyworms and drought have been the most difficult lawn care problems Holtzman has encountered in recent years. "Two years ago we had a terrible problem with armyworms which we solved strictly through chemical application," he said.

"We tried to combat last year's drought by working with the customers to try and get some sort of moderate application of water on the turf, but the problem was compounded by the fact that there was a water shortage in the Atlanta area during that time," Holtzman said.

Lawn Growers utilizes a variety of advertising mediums including newspapers, direct mail, and the Yellow Pages, but word-of-mouth advertising has been the most successful. The company has traditionally received only a one-half to two percent return on its direct mail ads.

Holtzman described the Atlanta area as a "growing lawn care market" with excellent potential. "It has really just started here. There is a lot of

room for the big operators like ChemLawn as well as the small one- and two-man operations.

"I expect our business to grow in the future primarily because we are small and can still provide a lot of personalized service to our customers," he added.

The expansion of the Atlanta market is virtually inevitable, but Holtzman does not view the next few years as merely a way to "cash-in" on new accounts. "I would rather not take on more customers until I had enough trained employes to handle the new accounts," he said. "Otherwise the quality of our work would decline."

There are scores of success stories concerning individuals who have made a substantial profit in the rapidly developing lawn care industry. But for each success story there is another which features individuals who envisioned themselves as

successful businessmen, but were unable to make a go of it in the highly competitive lawn care market. Dan Hollingsworth, former owner of **Lawn Consultants** in Lilburn, Ga., falls into the latter category.

Hollingsworth, 33, recently sold his business because of a combination of financial and management problems. "Actually, I did fairly well, but I just didn't have enough capital to finance a business," he said. "Rather than try and fight it another year I just decided to sell out."

Finances were not Hollingsworth's only problems. "The primary reason for selling the business, other than financial which I think I could have licked, was management," he said. "I just didn't have the feel for running and managing a business."

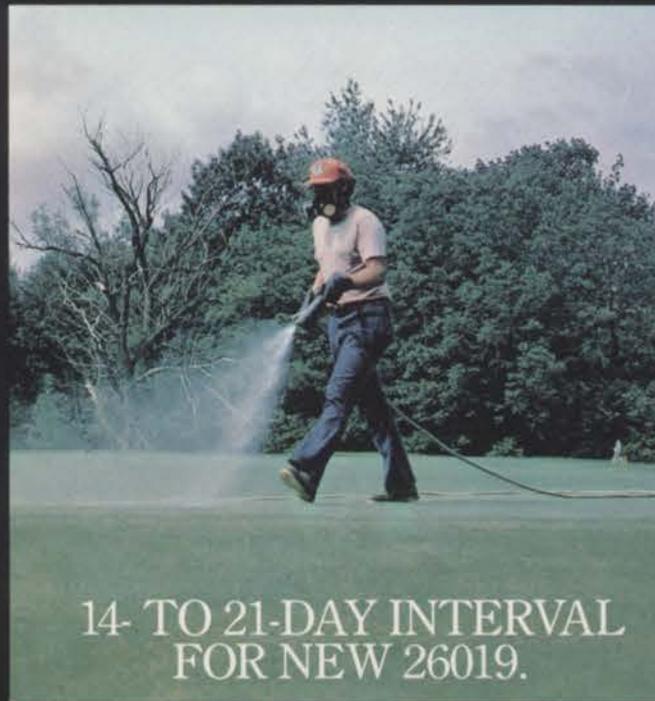
Hollingsworth, formerly a manufacturer's representative for Amchem Products, Inc., Am-

bler, Pa., added, "I can sell the heck out of anything I have to sell, but when it comes to actually managing a business I seem to be lacking the necessary talents."

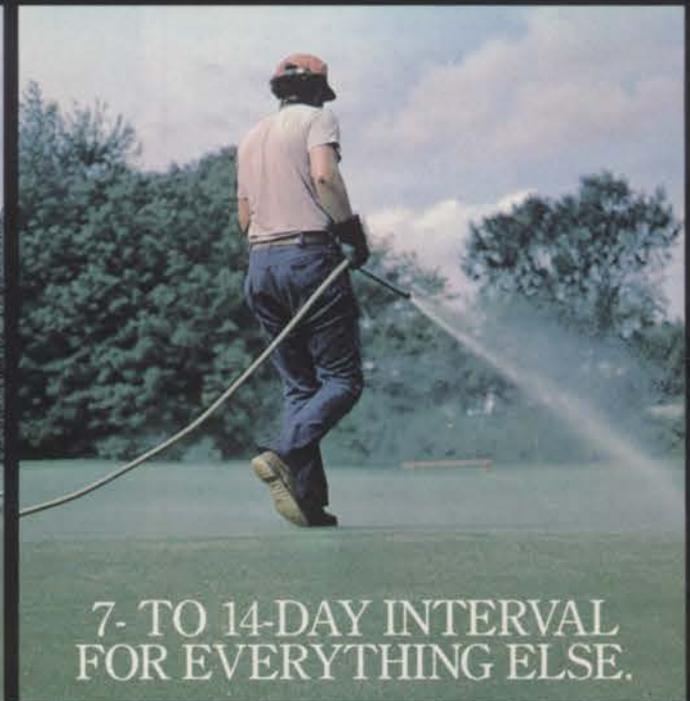
He said the primary reason he initially entered the lawn care business is he got tired of being on the road. "I figured the time to try it was while I was still young so in case I failed I could get back into sales." Hollingsworth plans to work for O.M. Scott & Sons, Marysville, Ohio after selling the business.

Lawn Consultants was formed in 1977 and this year the business was expected to gross about \$120,000 from its 600 accounts. All accounts were based on yearly contracts. Hollingsworth said the company specialized in dry fertilizers because he didn't have enough money to go into the liquid fertilizer business, although he did have a number of liquid fertilizer accounts.

INTRODUCING CHIPCO[®] 26019 THAT WILL OUTPERFORM WITH ABOUT HALF THE



14- TO 21-DAY INTERVAL
FOR NEW 26019.



7- TO 14-DAY INTERVAL
FOR EVERYTHING ELSE.

Here's a new fungicide that could change your whole way of thinking about broad-spectrum fungus control *and* spray intervals. Because new Chipco 26019 gives more control with fewer sprays than any of the old fungicides you've had to use.

It stops the major turf diseases—dollar spot (including benomyl-resistant dollar spot), brown patch and Helminthosporium (leaf spot). And it does it for up to three weeks, at low, economical rates.

It's a nice material to handle, too. It mixes well, with no residual left in the tank. It also presents no problems of phytotoxicity to turf.

Last year was a wet one, with unusually high disease pressure in most areas. Yet, Chipco 26019 performed beautifully in wide-spread tests. This year, you'll have the chance to see how well it can perform for you. So ask your chemicals distributor for this welcome addition to the popular Chipco

Company equipment included one tractor-drawn, hydraulically operated spray unit, three portable sprayers, two large hand units, and a number of Scott spreaders.

One would expect Hollingsworth to be less than enthusiastic in his evaluation of the Atlanta lawn care market, but the contrary is true. "I think it's a tremendous market. There are lots of homes in the area and people are aware of lawn care companies and willing to spend the money for the service," he said. "They also have huge lawns here so the prices are high. The average front lawn here is 8,000 to 9,000 square feet."

However, the climate often has a detrimental affect on Atlanta lawn care companies. Hollingsworth said fescues, which compose a substantial segment of Atlanta lawns, are easily infested by weeds and insects during "drought stress" conditions.

"It doesn't seem to make any difference how good of an application of fertilizer you make in the spring, if you have a drought in the summer, like Atlanta had last year, the lawn will suffer," he said. "The problem is the customer seems to equate it with a poor job on your part and everyone plays musical lawn accounts in the fall. I don't care who fertilizes the lawn it's not going to look good if there is a drought in the summer."

There is a great deal of money to be made in the lawn care market, but it's obviously not as easy to turn a profit as it may initially appear. Just ask Dan Hollingsworth. "I could make a lawn green, but I didn't have the feel for the other aspects of the business," he said. "There is more to running a business than just squirting some fertilizer on a lawn."

The most troublesome lawn care problem for William K.

Moore, owner of **Green-Lawn of Georgia, Inc.**, has been Atlanta's dry hot summers.

"The weather the past two years has been very bad and there were a lot of sprinkling bans. The result is a lot of customers cancelled saying they tried the service and it didn't work," he said.

Moore added, "The biggest problem has been a lack of water and there is absolutely no way to solve it. There really is no secret to this game. If you put down fertilizer and it rains or the grass is watered, it's going to work."

Moore started Green-Lawn in 1977 and currently has approximately 800 accounts, about 85 percent residential and 15 percent commercial. "It took a little time to get started, but it wasn't terribly difficult," he said. "You don't jump right into a successful business the first day. In fact, I still have problems, but nothing insurmountable."

Green-Lawn specializes in

liquid fertilization and its program consists of five applications of fertilizer per year along with periodic applications of insecticides, broad leaf weed killers, and pre-emergence treatments.

Moore, 54, said he looks for the Atlanta market to continue to develop in the future. "The market's not saturated by a long shot and I think there are several good years of growth left," he said.

Residential lawn care maintenance has often taken a back seat to the sometimes more popular commercial market, but Ponder A. Hunt, owner of **Green Acres Lawn Maintenance**, looks for that to change.

"In my opinion, there is as much money to be made in Atlanta in the residential lawn maintenance field as there is in the commercial field," he said. "That's not to say the commercial market is bad, but I think the residential business is going to get better."

Hunt, 42, said the key to securing residential accounts is to actively seek out the homeowner's business. "You just have to get out and get it," he said. "You have got to beat the bushes to make any money and that is what we are trying to do."

Hunt added he is surprised that many lawn care companies are shying away from the residential market, but he can understand their motivation. "It's hard to explain, but it could be that a lot of residential customers are hard to work with. In commercial work you only have one person to satisfy, but you have to satisfy both the husband and the wife in residential work," he said. "To be honest, I've run into more people who are harder to please in residential work than I have in commercial work."

He also predicts the residential market will continue to grow as the Atlanta area develops. "The entire metropolitan Atlanta area is growing in leaps and bounds and therefore the lawn care market will continue to grow."

Green Acres Lawn Maintenance was formed in 1975 and provides complete lawn care service including fertilization, trimming, shrubbery care, along with some landscaping services. About 60 percent of its \$25,000 a year business is commercially based while the remaining 40 percent is residentially based. Hunt employs three to four workers throughout the year.

Company equipment includes a number of rotary push mowers from a variety of different manufacturers, two Roper riding mowers, two Snapper high back mowers, and a variety of gas and electric string trimmers.

Green Acres uses a number of different fertilizers, but the most popular are Sta-Green, Sta-Green Plant Food Co., Sylcauga, Ala., and Scotts, from O.M. Scott Co., Marysville, Ohio.

All lawn accounts are based on contracts. "They are mostly yearly contracts, but it's really based on what the customer

6019. A TURF FUNGICIDE ANYTHING ELSE YOU CAN USE, THE NUMBER OF SPRAYS.

line of turf fungicides and herbicides. It will outperform anything else you can use, with about half the number of sprays.

"YOU FOLKS HAVE SOMETHING GOOD HERE."

"The main reason I'll use Chipco 26019 is to control dollar spot. Picking up brown patch and the others is gravy, as far as I'm concerned. This is a real good new chemical."

—Bob Dickison, golf course superintendent
Upper Montclair Country Club, Clifton, N.J.

"I feel very good about this product. We tested it during one of the roughest summers in my memory. I think, over a 14-day period in August, we had very close to 10 inches of rain. It was an acid test for the material. These chemicals come and go, and some of them are short-lived. But you folks have something good here. The sprayability of Chipco 26019 is very impressive. And you only need six to 10 hours of drying time, which helps a lot during rainy periods. Some other materials require at least 12 hours."

—Paul Boizelle, golf course superintendent,
and John Fenwick, foreman,
Fiddler's Elbow Country Club, Far Hills, N.J.

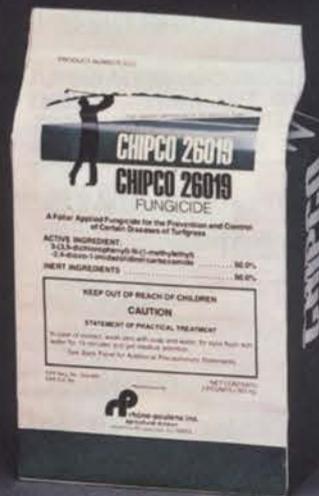
"We started using Chipco 26019 in June of 1977. Before we started using it, we had very little luck with our other contact and systemic fungicides in certain areas. We were applying some contact fungicides at preventative and curative rates, and still only getting two or three days control, with the usual cold fronts coming through, followed by large outbreaks of dollar spot. Since we started using Chipco 26019, we haven't found dollar spots in these areas at all."

—Randy Wahler, golf course superintendent
Glen Flora Golf Course, Waukegan, Ill.

Rhône-Poulenc Inc. Agricultural Division,
Monmouth Junction, New Jersey 08852.



rhône-poulenc inc.



Please read labels carefully, and use only as directed.

Circle 150 on free information card

to page 32

prefers," Hunt said. "There are some homes we visit four times a month and others we visit only two times. It varies, but it would probably round off to three visits a month on a regular basis."

Hunt relies primarily on word-of-mouth advertising, although he also advertises in the phone directory. "I really don't have to do a lot of advertising. If you do a good job people will call you."

In 1978 Hunt encountered one of the more unique lawn care problems of all those operators interviewed by LAWN CARE INDUSTRY. "I don't know if you have ever heard of this, but this past summer we had a lot of trouble with chipmunks getting into the yards and killing the grass and shrubbery." Hunt could do little but hope chipmunk damage to lawns would be minimal.

"We also had a lot of problems with wild onions and dandelions," Hunt said. "It takes a lot of time to combat these two particular weeds. If you don't get rid of them right quick then you have problems." Hunt said Weed-Be-Gone was helpful in controlling the weeds.

Hunt considers the Atlanta area a good lawn care market and looks for continued growth in the future. "Atlanta is absolutely full of lawn care companies," he said. "I would guess the number of companies has doubled since last year and I expect the market to continue because there is an awful lot of big business here as well as a large residential area."

Charles Baird, owner of **Green Thumb Chemical Lawn Care**, started his own business because he thought there was a need for more "personalized" lawn care service in the Atlanta area.

Baird, a ChemLawn employe from 1970-73, said, "The main reason I left ChemLawn is I felt they were getting too big and losing that personal touch with the customer and their service.

"My wife and I discussed it for about two years and we thought there would be a good market for a smaller company with a more down-home type attitude," he said. "It was a big decision because ChemLawn is a very high paying company."

Baird started Green Thumb in 1974 with about \$11,000 in capital, while he was still working at ChemLawn. "We started the company on a shoestring and so far we are still hanging on to that shoestring," he said. "Since we started the business we have obliterated all of our savings" (\$3,000 in cash and \$8,000 in stocks).

Green Thumb specializes in liquid chemical lawn care and provides a variety of services including fertilization, weed and insect control, fungicide treatment, and preemergence crabgrass control. "We're also on the process of putting down a liquid lime application," he said.

About 95 percent of Green Thumb's \$60,000 a year business is from the residential market with an additional five percent

commercial based. Baird, 35, said he currently has about 400 accounts and expects to secure an additional 200 accounts in 1979. "My future plans are very small scale compared to other larger companies. I would like to get up to about \$500,000 worth of business a year," he said.

Green Thumb's only medium of advertisement is hand-distributed fliers in selected neighborhoods. "Even if I had adequate financing I don't believe I would change my method of advertising," he said. "We get about a three percent inquiry return on what we pass out and we sell perhaps one percent of those who contact us."

Baird added that he does service several commercial clients although he does not "actively solicit" their business. "My commercial clients are residential customers who also happen to own commercial property."

All contracts are based solely

on vocal agreements and billing consists of leaving an invoice and a self-addressed stamped envelope at the customer's home at the time of the application. "The payment terms are 30 days, but that doesn't mean anything. They'll send the money in when they get ready to," he said.

Company equipment includes a recently purchased C-60 Chevrolet Truck with an 800-gallon tank. The truck also features a power rewind reel, PTO drive, a Hydra-Cell pump, manufactured by banner Engineering, Inc., Minneapolis, along with a mechanical agitation unit.

Baird said the most significant lawn care problem he has encountered is the "hot, dry Atlanta summer" which is impossible to combat "unless you get the people to water their lawns. Once every five years we will also have a fairly severe armyworm problem," he added.

Two years ago the problem

was so severe that most operators were only getting insecticide residual periods of between four days and two weeks. Baird used Dursban to fight the armyworm problem and had a residual period of about two weeks. "But I heard of others who used Diazinon and only got a four to seven day residual period," he said.

"The armyworm problem also created a lot of ill will between the operators and the homeowners because the customers couldn't understand why we were treating the lawn and it wasn't doing any good," he added.

Despite its troublesome lawn care problems, Baird said the Atlanta market is "extremely good. There are 17 companies in the area that I know of and I don't think the market is anywhere close to being saturated yet. I would say it would be maybe five years before the



Control 15 major lawn pests with versatile SEVIN® carbaryl insecticide.

They nip, munch, burrow and bite. As sure as grass is green, lawn pests will try to make life miserable.

You can minimize the misery with SEVIN carbaryl insecticide.

And protect lawns from as many as 15 different problem pests.

Both the most common ones and the worst: ants, bluegrass billbugs, chiggers, chinch bugs, cutworms, earwigs, European chafer, fall armyworm, fleas, green June beetle, leafhoppers,

millipedes, mosquitoes, sod webworms (lawn moths) and ticks.

Broad registration only starts the list of SEVIN benefits.

It's also compatible with many other commonly used insecticides, miticides, fungicides and foliar nutrients. And residents can resume using the grounds or yard as soon as the spray dries. There's a choice of

STOP! ALL PESTICIDES CAN BE HARMFUL TO HEALTH AND THE ENVIRONMENT IF MISUSED. READ THE LABEL CAREFULLY AND USE ONLY AS DIRECTED.



market even begins to get saturated."

Educating the consumer about the lawn care industry is a major concern of Joel Bewan, 37, owner of **All Seasons Lawn and Landscaping Service** in Tucker, Ga., a suburb of Atlanta.

Bewan said providing customers with information about proper lawn care and the cost of running a lawn care business is necessary if the industry is going to continue to develop.

"People want to get out of the physical labor of taking care of their lawns, but they aren't really educated about what it entails," he said. "It costs somewhere between \$15 and \$18 per man, per hour on the job to provide proper lawn care service and people just don't realize that."

He added that lawn care operators would also have less difficulty servicing lawns if con-

sumers were better educated about how to take care of their lawns between treatments.

Bewan, a former undertaker in Miami, Fla., started All Seasons "about ten years ago" along with a partner who has since left the business. Bewan said he initially entered the lawn care market because, "It just impressed me that there was a lot of money to be made in the business."

All Seasons provides lawn maintenance and landscaping services and it sub-contracts its chemical lawn care services to several companies in the Atlanta area including ChemLawn, Green-Lawn of Georgia, Inc., and Lawn Consultants. "We used to put down a dry application ourselves until ChemLawn started their business about three or four years ago," Bewan said. "But we found it was less expensive to use ChemLawn than it was for us to do it ourselves. And the fact is they keep a better eye

on it and do a better job."

About 75 percent of All Season's \$65,000 a year business is in the residential market while the remaining 25 percent comes from commercial work. The company currently carries about 35 accounts based primarily on yearly contracts. Initially yearly contracts were not used and the quality of the work suffered, according to Bewan. "Years ago is someone called and wanted their grass cut I would run out and do it with a bunch of kids, but it was just tearing up the equipment," he said. "When I switched to yearly contracts the number of my accounts went down, but I saved money because I cut my crews and was able to service my customers more efficiently."

Bewan employs three full-time workers along with several part-time employees during the busy season, primarily college students. He pays his workers about \$4.50 an hour and has had "exceptionally good luck" in

hiring quality employees.

However, Bewan does not attribute his success with hiring good workers to the fact that he pays fairly high wages. "I've paid some exceptionally well and they didn't produce and others I've paid average salaries and they've performed well. Employees have not really been a problem for me."

Company equipment includes seven Jacobsen commercial mowers, five Snapper riding mowers, one Sears tractor with a 48-inch cutting swath, a Wheel-horse tractor, and several vacuums and blowers. "I am very pleased with the Jacobsen commercial mowers. You can't tear up the 21-inch push type and I've had some really tough people handling them," he said.

Although Bewan said the Atlanta market is "saturated" with backyard operators, he expects the market to continue to develop. "As long as the building business continues to grow and the economy remains stable I think the market will continue to be wide open."

For Dr. Tobias F. Dirks, 39, owner of **Dirks Indoor-Outdoor Services**, lawn care is only a part-time business which augments his pest control operations. Dirks, the smallest operator contacted by LAWN CARE INDUSTRY, services only seven accounts in Dalton, Ga., a small city about 90 miles outside of Atlanta.

When he started his business in 1976 his primary emphasis was on lawn care, but he changed his focus to pest control in 1977 because he didn't have the resources to "dive into the lawn care market full time."

"Originally my major emphasis was on outdoor spraying because I thought there was a need for it in Dalton, but I changed my emphasis to pest control because I had an easier time selling pest control accounts," he said. "Sometime in the future I might pursue the lawn care market, but right now I just can't do it."

Dirks, an assistant professor of Biology at Dalton Junior College, Dalton, Ga., provides commercial weed control and fertilization on a low-volume basis. "I just don't have the big equipment to do it like the big lawn care companies." About 15 percent or \$3,000 of his \$20,000 a year business comes from lawn care clients with the remaining 85 percent coming from pest control accounts. He treats the lawns an average of four times a year.

Dirks employs two part-time workers, advertises little, and bills his customers quarterly. "I don't have any trouble with my billing because I can keep track of my customers real well," he said with a laugh. His only equipment is a high-pressure piston pump with a 100-gallon tank.

"Right now I would just like to maintain the number of accounts I have and learn more about the business," he said, "but sometime in the future I would eventually like to get a franchise and really develop the market. It's really all contingent on getting a franchise."

BACK.



four formulations—
sprayable, wettable
powder, flowables and
SEVIMOL® 4, a liquid blend of SEVIN
and molasses. Granules, dusts and baits
are also available for certain specialized
uses. Plus, SEVIN isn't harsh on the
environment. It is bio-

degradable; and when compared with
other insecticides, it ranks low in toxic-
ity to people, animals, birds and fish.

So it's probably no surprise to hear
that SEVIN carbaryl is one of the largest
selling insecticides in the United
States today.

For more information about SEVIN,
contact your pesticide supplier or
Union Carbide at the address below.

Make SEVIN carbaryl insecticide
your answer to pest control too.

SEVIN 
CARBARYL INSECTICIDE
IS THE ANSWER.

SEVIN and SEVIMOL are registered trademarks of Union Carbide Corporation for carbaryl insecticide. Union Carbide Corporation, Agricultural Products Division, 7825 Baymeadows Way, Jacksonville, FL 32216

The number of lawn care businesses across the United States will continue to grow as consumers turn to commercial, industrial, and residential lawn care companies to provide economically-priced, high quality lawn service.

While many people are forming lawn care companies to "cash-in" on this rapidly developing consumer market, Max G. Graham, owner of **Graham Lawn Care Equipment**, recently formed his own company to "cash-in" on the lawn care company market.

Graham, 37, is a former ChemLawn employee who decided to make a living off those who are making a living off the consumer lawn care market. He manufactures and sub-contracts the construction of a number of lawn-related products including spray nozzles, measuring devices for spray trucks, soil probes, and other custom-made equipment. He carries about a half-dozen products in all.

"I talk with my customers and find out what they want and what they need and then I try to design a piece of equipment which will meet those needs," he said.

"I've always had a desire to have my own business and it seemed like there was a definite need for good equipment for people in the lawn care field," Graham added. "It's really a

pretty good market because there are a lot of new people in the business."

Graham currently has about 15 customers and he expects to do about \$125,000 in business in 1979. "Atlanta right now is not big enough to support a business like this so I had to go nationwide," he said. "My business is spread out over about four different states and I have customers in Birmingham, Ala., Columbus, Ga., and Montgomery, Ala., along with several other cities." However, he added that metropolitan Atlanta is a good national base for selling equipment. His business is located in Douglasville Ga., a suburb of Atlanta.

A significant segment of Graham's business also comes from the custom modifying of traditional trucks into trucks equipped with spray units. Customers purchase a truck of their choice and Graham constructs a bed, secures a spray tank, and adds other features the customer requests.

He said fiberglass tanks are currently the most popular for a number of reasons. "Fiberglass tanks are less costly to maintain, don't rust, are easy to clean, and they look better," he said.

Graham does absolutely no advertising because he has been able to secure all the business he can handle through personal contact. "I will be doing some advertising in the future, but there isn't much point to doing it now if I can't do the work."



Banvel
tough on weeds,
easy on turf.

Beautiful results!

How often have you tried a herbicide only to end up with poor control or damaged turf? No longer. Banvel® 4S, and Banvel® +2,4-D give you economical control of more than two dozen difficult weeds. Weeds that other herbicides often miss. The translocating action of Banvel® attacks the entire weed, roots and all, to get at deep root and regrowth problems. True season-long herbicides, they can be used in warm or cool, wet or dry weather, and store through the winter without loss of potency. They mix readily in hard or soft water, and may be applied with conventional spray equipment. **Banvel® 4S for tough weeds, Banvel® +2,4-D for pre-mixed chemicals and broader spectrum control of broadleaves.** You get beautiful results, at a cost you'll find pretty attractive, too!



Before using any pesticides, read the label.

Velsicol

VELSICOL CHEMICAL CORPORATION
"The turf chemical specialists"
341 East Ohio Street, Chicago, IL 60611
(312) 670-4592

Circle 129 on free information card

MONEYWISE

Size differs, price same for East, West lawns



In spite of the vast difference in the size of an average serviceable lawn between the East and West, the typical per treatment price is about the same, according to Bob Cohen, owner of The Green Scene, Los Angeles.

"10,000 square feet of eastern lawn is done for about \$30," he told **LAWN CARE INDUSTRY**, "and this is supposedly the 'average' eastern service. In the West, the average lawn is 2,500 square feet and the service is between \$27 and \$33 depending on lawn type — dichondra is additional because of special treatment.

"The actual materials cost is within a few dollars," he said, "because treatments here involve a lot more and different materials. Because of the intricacies of the lawns here, the actual service time per 1,000 square feet is greater than in the East. So all-in-all, the number of jobs per day is quite similar — 12 to 18 lawns a day."

What Cohen wonders most about is whether or not the price/demand curve is as "elastic" in the West as it appears to be in the East. Also, in his own market tests, he says he has not found much advantage in pricing lower as a means of market penetration in California. "Keep in mind," he says, "that at this point there is very little price comparison going on."

ASSOCIATIONS

Green industry groups meet in Washington

The Landscape Industry Advisory Council (LIAC) met recently at the Washington, D.C. offices of the American Association of Nurserymen to discuss common problems, share information and coordinate activities.

Present at the September meeting were: Robert F. Lederer, representing the American Association of Nurserymen and its five family organizations, Garden Centers of America, Horticultural Research Institute, National Association of Plant Patent Owners, National Landscape Association and Wholesale nursery growers of America; Pat Gushue, American Institute of Landscape Architects; John

Shaw, Associated Landscape Contractors of America.

Also, Conrad Scheetz, Golf Course Superintendents Association of America; Cal Bundy, International Society of Arboriculture; Tom Schiltz, Irrigation Association; Robert Felix, National Arborist Association; Allan Shulder, Professional Grounds Management Society; and Darryl McEwen, Society of American Florists.

Associations also members of LIAC but not represented are: American Horticultural Society, American Seed Trade Association, American Society of Landscape Architects, American Sod Producers Association, Bedding Plants, Inc., Lawn & Garden Manufacturers Association, Mailorder Association of Nurserymen, Roses Incorporated and Sod Growers Association of Mid-America.

Use the
HERBI

for better, cheaper, easier weed control
along fences, roadways, irrigation ditches,
around buildings and structures.

The HERBI gives Controlled Droplet Application... a revolutionary approach to the application of herbicides. Its spinning disc produces a consistent 250 micron droplet, meaning ultra low volume spraying, eliminating the need for high volumes of water. Gives exact and thorough coverage, with less chemical. Startlingly economical in cost and use.

HERBI™

Micron West, Inc.

8582 Katy Freeway Houston, Texas 77024 (713) 932-1405

Circle 142 on free information card



DERBY

Turf-Type Perennial Ryegrass

Setting a New Standard of Excellence

Derby is the dark green beauty which joined Manhattan and Pennfine on the "highly preferred list of ryegrasses." That was last year. Now Derby is setting a new standard of excellence.

In the eyes of many Golf Superintendents it reigns supreme among the turf-type ryegrasses today. Why? Because it performs! And a Superintendent knows that claims are great, but performance counts.

- Consistently performs better than other leading varieties from California to Florida
- Durable, dark green and has excellent mowing qualities
- Tolerates a variety of soils & responds rapidly to fertilization
- Germinates in a week (or even less) under ideal conditions
- Better-than-average heat and drought tolerance
- An adaptable and disease resistant cool-season turf grass
- An excellent record as a Southern winter grass
- Thrives when close-cut



INTERNATIONAL SEEDS, INC.

P.O. Box 168 • Halsey, Oregon 97348
(503) 369-2251 • TWX 510/590-0765

Lawn & Turf Landscaping, Inc., Fort Wayne, Ind., was chairman of the lawn care workshop.

Also elected at the annual meeting were: Wallace SaBell, SaBell's, Inc., Denver, president-elect; Ritchie B. Skelton, Duncan Landscape Associates, Vienna, Ohio; and Allen Keesen, Allan Keesen Landscape, Inc., Denver, vice presidents; Ray Gustin III, Gustin Gardens, Inc., Gaithersburg, Md., treasurer; and David R. Pinkus, North Haven Gardens, Dallas, secretary. 1978 president Ron Ahlman moves to the post of immediate past president.

Speakers on the landscape maintenance specialty workshop panel at the conference included Frank Timmons, Ladybug Industries, Inc.



The passing of the gavel from immediate past president Ron Ahlman (right) to new ALCA president Bill Thornton at the association's annual meeting last month in Houston.

Brandt: "Our spray program calls for four applications and four checkback calls. If the lawn needs a respray, we schedule it after the checkback call. We have eliminated an awful lot of customer call-ins, because if they learn to expect you out for the checkback call, they will hold up on calling you if they have a particular problem. If the lawn needs disease or grub control, we'll suggest it and charge for it..."

Latting: "The key to a good spray system is the pumping system... most companies use positive-displacement type pumps because of the friction going through a small-diameter hose... you need 150 to 175 pounds of pressure to get through a 300-foot hose, so you can have 10 to 15 pounds of pressure at the tip... low-volume, high-pressure... for the deliver system to the lawn, most companies are using a shower-head-type nozzle, and some single-flood or V-jet nozzles..."

Denig: "We just finished calling every homeowner who cancelled our service within the last three years, and picked up 50 new — or should I say old — customers... we have a radio in every truck, and the applicator wears it on his hip when he is spraying... each unit costs us \$1,200, but we feel they have paid for themselves in the satisfied customers we have been able to follow-up quickly with..."



FLORIDA LAWN CARE

Sarasota's Sassaman expands into lawn care

After 14 years in the engineering department of J.B. Foote Foundry, Mansfield, Ohio, Hans Hauser wasn't sure if he was ready to change locations and careers — all at the same time.

Foote manufactures transmissions used by many manufacturers of lawn mowers. Hauser had been very active with the Outdoor Power Equipment Institute in Washington, and served on the safety committee of the federal Consumer Product Safety Commission, which is now reviewing mower safety standards.

In his travels in the mower industry, Hauser had spent quite a bit of time with Dave Sassaman, who had been chief engineer with J I Case's Outdoor Power Equipment Division, Winneton, Wis. Sassaman had earlier left Case to start up a business testing mowers and other products for the lawn and garden industry, including Wheel Horse and Snapper among his accounts. His business is based in Sarasota, Fla.

Earlier this year, Sassaman decided to branch out into the professional lawn care market, and wanted Hauser as his partner because of his background in the industry, and because of his experience running a small nursery in Mansfield.

Hauser still wasn't sure, but when he spent a week with Sassaman in Sarasota last year and together they sold \$106,000 worth of yearly lawn care contracts, he became a believer.

They started the Lawn-Pro Lawn Care Services Division of Sassaman Enterprises June 1, and already have 20 people on the payroll, a full-time mechanic and more business than most nine-month old firms can usually hope for.

An additional advantage to their backgrounds is that they have had many offers of use of free equipment from manufacturers so that tests can be run on it under tough field conditions. The manufacturers depend upon Sassaman and Hauser to pin-

point problems rather than, as Hauser says, "just say that something went wrong and not be able to explain why."

The division employs 10 persons that strictly handle cutting, and nine persons that do additional cutting, bagging, spraying and fertilizing grass, as well as maintaining trees and ornamental plantings.

The company handles strictly commercial maintenance, mostly condominiums. One condominium they have under contract is "immaculately landscaped," Hauser told LAWN CARE INDUSTRY, with 334 individual units. We have six full-time men that do nothing but work on it."

They handle business only on a 12-month contract, and Hauser feels his main competition is the "onesies-twosies" — companies that come on the scene one year, underbid and make some easy money, and then are never heard from again. He laments the fact that the industry has "so little professionalism" and is advertising now for a full-time horticulturalist to troubleshoot.

KNOCK OUT Crabgrass



ROCKLAND PROFESSIONAL Betasan®

Selective Pre-emergence Herbicide

ROCKLAND BETASAN is available in three different strengths, — 12.5% granular, 3.6% granular and 4 lbs. Emulsifiable Concentrate.

(R) Betasan is a registered Trademark of Stauffer Chemical Co.

ROCKLAND has a complete line of granular insecticides, herbicides and fungicides for Professional Turf Maintenance.

ROCKLAND Fertilizers contain combinations of IBDU, NITROFORM and new SULFUR COATED UREA. Some available formulations — 25-5-15, 30-2-5 and 20-4-10.

All products are formulated with the highest quality ingredients and carriers.

ROCKLAND PROFESSIONAL lawn and garden PRODUCTS CATALOG

Ask your supplier or write



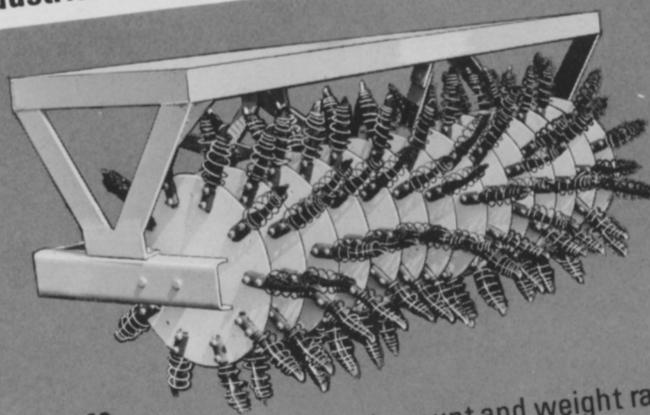
ROCKLAND CHEMICAL CO., INC.
PASSAIC AVE., WEST CALDWELL, N.J. 07006

Circle 121 on free information card

Hahn

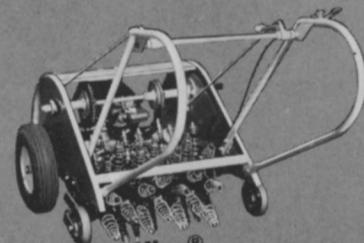
THE TURF PROFESSIONALS

A complete line of Aerifiers for fairways, athletic fields, industrial and institutional lawns... at prices you will like!

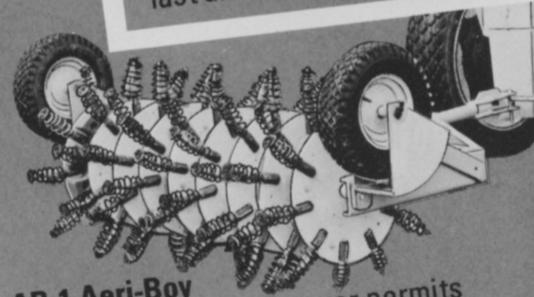


TM-140

6 ft. swath. Three-point hitch mount and weight rack. Also available with wheels and hydraulic lift.



JR-3 Aerifier®
2 ft. swath. Self-propelled, fast and maneuverable.



AB-1 Aeri-Boy

4 ft. swath. Simple flip-over permits quick transport.

Optional Spoons and Blades for double utility.
Also available — a complete line of Thatchers.

Hahn 1625 N. Garvin St., Evansville, In. 47711

DEALERS WANTED (812) 424-0931

Circle 113 on free information card



Before you do anything to your lawn this spring, the following should be of interest and great help:

NATURE'S METHOD $\xrightarrow{\text{produces}}$ THE GREEN MAGIC SYSTEM

TO REINFORCE WHAT YOU ALREADY KNOW...

1. Nature has a method and a rhythm that makes plants (lawns) grow healthfully & beautifully.
2. Man has a distinctive ability that quickly destroys Nature's positive responses. For instance, it is common knowledge that:
 - A. Chemical fertilizers create lush growth and make the plants more susceptible to infestations of insects, diseases and other undesirables — plus reduce the plants ability to withstand unfavorable weather and environmental conditions (heat, cold, drought, excessive wet spells, etc.)
 - B. Continual applications of chemicals and pesticides kill the beneficial soil bacteria that decompose Mat and Thatch which convert this accumulation into the necessary organic matter (humus) that builds a more productive soil. Stopping this natural beneficial process creates excessive Mat & Thatch accumulation that makes an ideal media for fungus disease and insect growth that quickly invade and weaken the grass.
 - C. Misapplications and applications of the wrong products destroy the soil, make the soil more compact, so compact that air, water and nutrients cannot penetrate, causing short shallow root growth of desirable grasses making the grass weak and unable to cope with undesirable conditions and unable to heal from the wounds.
 - D. The list is endless . . .

YOU CAN STOP THESE AND OTHER DESTRUCTIVE ACTIONS

by converting your operations into a more simplified and exacting program that will produce better and more beautiful results with the assistance of Nature.

Agro Chem's GREEN MAGIC SYSTEM is NATURAL and far more exact than anything you have done to date and anything that is currently available to you.

LEARN HOW YOU CAN BENEFIT FROM NATURE.

Call or write us today for complete literature and details of how you can start working with nature.

This program is ideal for Large and Small Lawn area Managers and is The Most Complete Program for companies offering lawn spray services to residential and commercial firms.

Programs and packages are available for all types of lawn areas. Dealerships are available for custom spray operators.



Phone: 312-455-6900

11150 Addison
Franklin Park, Ill. 60131

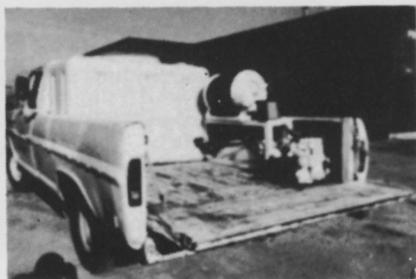
YOUR TOTAL SOURCE FOR PROFESSIONAL MANAGEMENT

AGRO CHEM'S
Professional spray unit
for the small area,
and — it is expandable
for the larger area.

The basic unit includes
(as pictured)



- 1—Rectangular 300 gallon holding tank — 110 lbs. w/4" fill cap & man way
- 1—250' light weight pressure hose
- 1—Electric hose reel
- 1—Gas engine & special Pump
- 1—Lawn gun with assorted nozzels
- 1—Pressure regulator and bi-pass unit
- 1 each—Suction & Bi-pass hose
- 1—Root feeder



This basic spray rig is designed to fit in a pick-up truck, the tank situated between the rear wheel well and cab of truck. The motor, pump and hose reel on the right side leaving the remainder of the truck bed for other equipment and supplies.



Van pictured shows the basic spray unit in the van, leaving the entire rear area for storage of products.

As you will see, these sprayer units have been designed with a great deal of thought, research, and years of experience. They are designed and built by professionals, for professionals. For more details, either call or write Mr. Joseph.

This basic 300 gallon unit can be expanded to whatever size spray rig desired by simply adding more tanks — eliminates purchasing new equipment as business expands.

Pictured:
16' Flat bed truck carrying 5 — 300 gal. tanks + 1500 gals.

2 — 500' hose reels & ability to apply as many as 5 different products or any combination required.



Phone: 312-455-6900

11150 Addison
Franklin Park, Ill. 60131

Lawn-A-Mat introduces new logo and trademark

Lawn-A-Mat Chemical & Equipment Corp., Westbury, N.Y., has changed its company logo and trademark.

The original identifying insignia, which has been in use since the company was established in 1961, included a silhouette of its multi-purpose tractor-drawn combine.

According to Pat Lore, executive vice president: "The old identifying logotype has served us well over the years. Through constant repetition in print throughout the country, it helped us to pioneer the message to the public that a professional lawn service equipped with such labor-saving equipment could do the job faster, better and almost as economically as the homeowner himself."

Lawn-a-mat

Old Lawn-A-Mat logo

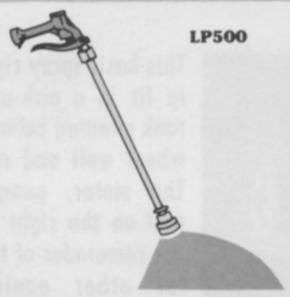


New Lawn-A-Mat logo

The new logo emphasizes a symbolized Lawn-A-Mat man, in line with rapid changes in the lawn care industry in recent years, with greater emphasis on the professional stature and ability of the lawn care businessman. The company colors — blue and orange — will be retained in the new logo. Lawn-A-Mat dealers throughout the country have received new decals and other promotional and display materials, to facilitate the changeover on their trucks, signs, literature, etc.

LAWN PRIDE LAWN SPRAY GUNS

Regulate flow with finger tip control



LP500

LAWN PRIDE 500

Sprays coarse droplets low and wide for control of drift and volatility
Covers wide areas AND goes low under shrubs
Lightweight and maneuverable

LAWN PRIDE 250

Standard lawn care industry oval pattern with a diameter of 40"



LP250

BOTH FEATURE

- Regulate flow with finger tip control
- Corrosive resistant-easy maintenance
- Viton O-Rings for lasting performance
- Flow rate from 2-10 gallons per minute including urea-formaldehyde and other coarse material

PRICE: \$7.95 each-includes gun, extension and exclusive nozzle

For further information contact: Lawn Pride
223 Big Run Road
Lexington, Kentucky 40503
Phone (606) 277-1112

Circle 114 on free information card

MEET YOUR SPRAYER NEEDS EXACTLY!



TRAILER MOUNTED

SKID MOUNTED

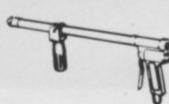
ACCESSORIES



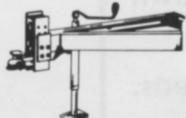
GREENS BOOM



HOSE REEL



G-GUN



SCREW TYPE JACK

ALSO CHOOSE FROM FIBERGLASS TANKS/MECHANICAL AGITATION/PUMPS AND ENGINES/BOOMS/HAND GUNS, ETC. WRITE OR CALL:

Special Products Division
HANSON EQUIPMENT CO.

301 CHARLES ST., SO. BELOIT, IL 61080
815-389-2261

Circle 128 on free information card

PRODUCTS

Commercial mower has quick-response governor

A quick-response governor, which maintains power even in tall or thick grass, is featured on Ryan's new 20-inch commercial lawn mower. Charlie Hines, engineering manager, told LAWN CARE INDUSTRY the air-vane governor eliminates linages by operating directly from the air flow off the flywheel cooling fins. As a result, he explained,



governor "lag time" is reduced in responding to suddenly higher grass. "Our governor functions very smoothly," Hines said. "It appears to anticipate the need to open the throttle to maintain a nearly constant blade tip speed." The mower's 7.7-cubic-inch engine is framed with tubular steel to protect it while mowing under shrubs, bushes or fences. The two-cycle engine provides constant lubrication without danger of oil starvation when mowing on slopes. Hines said the mower's two-speed engine has needle bearings at four critical points along the crankshaft and connecting rod. He said this feature is designed to increase engine efficiency by "coming as close as possible" to frictionless operation. Other features include five adjustable cutting heights ranging from 1½ to 3½ inches, a 1.25-gallon fuel tank for longer running and 12-gauge steel housing.

Circle 208 on free information card

Spray tank mounted to frame or flatbed

New 800- and 1,200-gallon lawn care units from Strong Enterprises, Inc. can be mounted either directly to your truck chassis or on a standard-size 14-



foot flatbed (12-foot for 800-gallon unit). The fiberglass tank units are designed to pump liquids or non-soluble fertilizers. The units are baffled to reduce liquid surge. The units feature a FMC John Bean pump, matching fiberglass engine and pump cover, hose reel, suction strainer and other options and custom fabrications.

Circle 201 on free information card

Save costly chemicals remaining in container

Lawn care businessmen can save loss of costly chemicals remaining in containers, or prevent reuse of pesticide containers, and more easily dispose of containers with the new E-Z Rinse can rinser from Phill-Worth Mfg. Features include: Use on plastic or metal containers of any shape and size; use from a water hydrant or T into outlet side of pump on a holding tank; use with water or liquid fertilizer solutions; rinse solutions go directly into spray tank; chemical container is punctured to prevent reuse; retail price is \$29.20.

Circle 203 on free information card

High-pressure, low-volume lawn pump

Wanner Engineering, Inc. introduces its new, high-pressure, low-volume Hydra-Cell pump for the lawn care industry. The pump is gaining acceptance by many major lawn care companies across the country. The



FROM WANER ENGINEERING COMES THE FIRST MAJOR PUMPING BREAKTHROUGH IN 25 YEARS.

INTRODUCING THE

hydra-cell

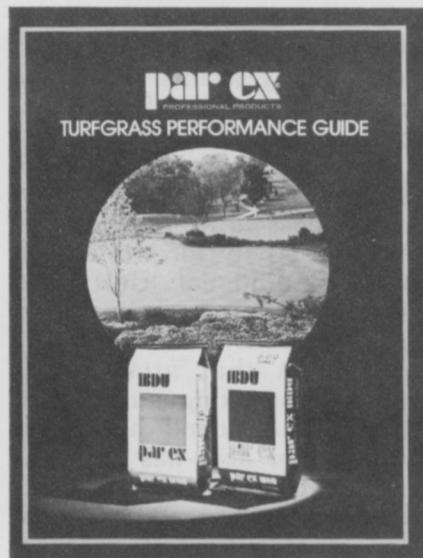
HIGH-PRESSURE LOW-VOLUME PUMP

pump eliminates friction packings and sleeves to minimize maintenance, reducing costly downtime. Pumping is done with oil by means of hydraulic cells transferring pumping action to the solution in the system. Features include: Variable volume from one to 10 gallons-per-minute by varying speed; pressures to 1,000 pounds-per-square-inch; no cups, no packings, no sleeves, no greasings, extremely quiet operation; pump solution end can run dry indefinitely with open line. A free data sheet with detailed information is available.

Circle 209 on free information card

Turf guide available from Par-Ex

Slow-release IBDU (31-0-0) fertilizer is the subject of a new 24-page booklet entitled *Par Ex Professional Turfgrass Performance Guide*. This guide con-



tains articles from university and private research plus other trade data detailing many aspects of slow-release nitrogen materials, important in any lawn care program. Also included is a fertilizer program planning guide and a handy data sheet for figuring fertilizer application and spreader calibration. The booklet is free.

Circle 205 on free information card

Catalog on hose, hose reels, spray guns

FMC Corp., Agricultural Machinery Division offers a broad spectrum of hose reel sizes and features for the lawn care businessman. The units are explained in a free, four-page catalog available from the company. Reel capacities range from 100 to 500 feet. Manual or power rewind may be selected, although power rewind is favored by most lawn care companies across the country.

Circle 202 on free information card



Pelletized Profit?

Now, big limestone & gypsum profits in a virtually dust-free pellet form. ■ Opens up a whole new market segment for your lawn care business... without the mess of dusty, uncontrolled spreader applications. ■ Economical, yet highly profitable. ■ Works with any type spreader, including broadcast. ■ Lets you increase customer service plus decrease your fertilizer costs. ■ Ideal for slack periods because REVEILLE can be applied practically year 'round. Available in bag or bulk, both REVEILLE Limestone and Gypsum fit perfectly into liquid or dry lawn care operations.

REVEILLE
LIMESTONE & GYPSUM PELLETS
American Pelletizing Corp. • P.O. Box 3628 • Des Moines, Iowa 50322

Circle 139 on free information card

High-pressure vinyl hose resists kinking

High-pressure vinyl hose from Robco is lightweight, non-marking and strong. Features include: Less than half the weight of conventional hose; glides over ground and around corners and trees; light yellow color cannot mark patios or curbs; resists kinking, handles easily; made in 400-foot continuous lengths without splices; comes in sizes of 1/4-inch, 5/16-inch, 3/8-inch, 1/2-inch, 5/8-inch, and 3/4-inch. Free data sheet available.

Circle 210 on free information card

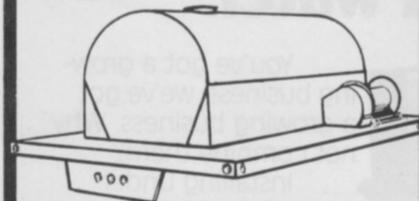
New sprayer requires no operator chemical mixing

Yard Mate Mfg. Co. early this year began marketing a new generation sprayer that requires no mixing of chemicals by the operator. Inspiration for the



sprayer came from the fact that it seemed a waste of time and money to haul water around all day when each homeowner has an unlimited supply at his house. Yard Mate's Donald B. Forbes told LAWN CARE INDUSTRY recently. He said it has been developed especially for the lawn care industry after much field testing and use. "We have used it exclusively for spraying lawns in our own business," Forbes said. "We have found savings in time of from 30 to 75 percent. Features include: Uses homeowner water supply (eliminates need for truck and spraying equipment); extremely accurate, adjustable, proportions a fraction to 11 ounces per gallon of water, house-to-house changes in pressure have no effect on fin-

Custom Designed for



Lawn Care

Consolidated Services, makers of quality lawn care equipment, offers you two standard units or we will custom-build to your specifications. These features and more are available. Contact us direct, today.

- Choice of tanks, sizes & material
- Low center of gravity & clearance
- Powered rewind reels
- One-piece welded construction
- Mechanical or sparge line agitation



Consolidated Services
401 South College St.
Piqua, Ohio 45356
PH: (513) 773-3109

Circle 141 on free information card

ished spray; it weighs only 15 pounds; simply connect water hose to unit, turn on water and spray; sprays at a rate of 1,000 square feet per minute, standard in the industry; metered, tells you how much material you have sprayed; can be used to spray trees and shrubs as well as the lawn; drift is minimized due to large droplet size; only has to be cleaned once a week; no measuring, mixing, spilling or waste of chemical; minimizes applicator exposure to chemical. Cost is \$215.

Circle 207 on free information card

Prolonged engine life on commercial mower

An all-new, 21-inch heavy duty commercial self-propelled mower is being introduced by Sensation Corp. Features include a high-strength, rust-proof mag aluminum alloy deck and a special four-horsepower Briggs & Stratton valve rotator engine that prolongs engine life, something most lawn care businessmen involved in mowing/maintenance say they want. Time-tested ratchet drive allows you to power drive the mower or push it back and forth for trimming. Finger-tip control and large, 10-inch rear wheels provide power, traction and easy operation. The



unit mows and bags wet or dry grass without clogging, utilizing an optional jumbo capacity catcher (three bushels) — nearly double many others. New easy-setting, commercial, heavy-duty height adjusters allow nine different settings from one to three inches — without tools. Easy on/off chute deflector with hardware is included with mower.

Circle 204 on free information card

Test kit to check tank-mix compatibility

Do the pesticides and fertilizers you put together in tank mixes always spray together? If the spraying goes on without a plug-up of hoses and nozzles, were all the ingredients applied at the prescribed rate over the whole turf area? These questions have plagued many a lawn care businessman who later noted spotty weed and insect control. It has also been a topic on many turf conference programs this past winter across the country. Now there is a convenient way to test the compatibility of the chemicals and fertilizers you plan for application before you put them all together in the tank. A new compatibility test kit is



being offered at cost by Hopkins Agricultural Chemical Co. to be used with its new compatibility agent, Unite. The kit contains step-by-step directions, measuring spoons, eight ounces of the compatibility agent, plus a sample label. What you'll need, in addition, are small quantities of the fertilizers and the chemicals you plan to use, and two glass jars.

Circle 206 on free information card

FREE NEW SPRAYER PUMP HANDBOOK



Hypro does it again. In a helpful, informative new edition of their Sprayer Pump Handbook, Hypro brings you up to date on performance charts, pump capabilities and hook-up diagrams — everything to help you improve sprayer performance. It's a professional handbook from the makers of the world's best selling sprayer pumps; Hypro. Send for your free copy today.

Hypro
A DIVISION OF LEAR SIEGLER, INC.
319 Fifth Ave NW, St. Paul, Minn. 55112 • (612) 633-9300

Send my free Sprayer Pump Handbook.

Name _____

Address _____

Town _____ State _____

County _____ Zip _____

Circle 127 on free information card

Insecticides for the lawn care industry

At the recent Maryland Turfgrass '79 held in Baltimore, Dr. Haruo Tashiro of the New York State Agricultural Experiment Station in Geneva said that tests will begin this year to develop turf varieties that are more resistant to insect damage than what is presently available to the lawn care businessman today.

Dr. James A. Reinert of the University of Florida is initiating the testing program, and Dr. Tashiro will also be doing testing.

"We hope to have insect-resistant varieties in the future," Dr. Tashiro told the audience, "there is no reason to believe we won't have these."

Until that day comes, lawn care businessmen will have to

depend on cultural and chemical control of insects in their customer's lawns. At the same meeting, Dr. Tashiro mentioned one of the new insecticides presently being tested — Oftanol. "It's going to be good," he said "because it has a longer residual than what is presently on the market." This is good news for the lawn care businessman. Dr. Tashiro said that Chemagro Agricultural Division of Mobay Chemical Corp., Kansas City, Mo. hopes to submit data for registration of Oftanol this year for turf and grub control to the federal Environmental Protection Agency (EPA). He said there is a possibility that the chemical could be registered as early as next year.

In addition to the manufac-

turers and distributors below who have provided information about the insecticides they have for the lawn care industry, a partial listing of other manufacturers and distributors would include:

Ciba-Geigy Corp., Greensboro, N.C.; Dow Chemical Co., Midland, Mich.; Stauffer Chemical Co., Westport, Conn.; Union Carbide Corp., Agricultural Div., Jacksonville, Fla.; Garfield Williamson, Inc., Jersey City, N.J.; Cenol Co., Libertyville, Ill.; Stephenson Chemical, College Park, Ga.; Lakeshore Equipment & Supply Co., Elyria, Ohio; Professional Turf & Ornamental Products, Kansas City, Kan.; Bonide Chemical Co., Yorkville, N.Y.; Woodbury Chemical Co., Princeton, Fla.; C.B. Dolge Co., Westport, Conn.; B.G. Pratt Div., Gabriel, Ltd., Paterson, N.J.; Hopkins Agricultural Chemical Co., Madison, Wis.; and Mobil Chemical Co., Richmond, Va.

Fisons Inc. Dr. W. Wayne Surles, manager of field development for Fisons Inc., Bedford, Mass. told **LAWN CARE INDUSTRY** that a submission to the federal Environmental Protection Agency (EPA) is presently being reviewed for the company's bendiocarb insecticide for the lawn/turf market, but that it would be "presumptive to assume EPA approval."

Bendiocarb is the common name for Ficam insecticide, a proprietary product of Fisons, which presently sells the insecticide for control of crawling pests by the structural pest control industry. Data generated by university researchers has demonstrated excellent activity against turf-feeding white grubs (numerous species) at two to four pounds active ingredient per acre and varying activity against other turf-infesting arthropods, Dr. Surles said.

Working under Experimental Use Permit programs approved by the EPA, Fisons' personnel have field-tested a 76 wettable power formulation of this product the last two years. Non-

replicated practical application trials have been conducted throughout the United States for the entire spectrum of turf pests. Results, at the present time, indicate that bendiocarb consistently provided good control of the white grub complex at two pounds active ingredient per acre in most areas, Dr. Surles said. Late summer and early spring trials have demonstrated good activity against all larval stages of the sub-surface insect pests.

Post-treatment irrigation or timely rainfall was required in all instances to insure this high level of activity for white grub control. Additional trials have been conducted against the surface-feeding complex of arthropods that attack turf. Generally speaking, a maximum rate of one pound active ingredient per acre has provided good control for insect species such as chinchbugs. Data has not been generated for other insect species, but application for registration has not been made at the present time, Dr. Surles said.

"Our research findings complement the results obtained from researcher trials and confirm the desirability of eventual registration of bendiocarb," he said. "Excellent turf safety has been observed in all bendiocarb trials."

"In summary," he said, "Fisons has submitted an application for registration to the EPA for the labeling of a 76 wettable powder formulation for the control of white grubs. We are continuing the research program this year so that we can develop recommendations for the control of the surface-feeding complex of turf pests as well. The EPA is presently reviewing our application, and we are hopeful that registration will be granted in the next few months."

TUCO, Div. of Upjohn. Proxol insecticide, manufactured and marketed by the Kalamazoo, Michigan-based company, has been providing effective control of larval populations of various beetle species, plus sod webworms, and cutworms.

In 1978 experiments conducted by Dr. Roger Funk, vice president of research and development for Davey Tree Expert Co. and its Davey Lawnscape Service division, Kent, Ohio, tested the effectiveness of several chemicals against European chafer in a home lawn situation.

The experiments were run in the Rochester, N.Y. area, and Dr. Funk told **LAWN CARE INDUSTRY** that Proxol "consistently gave the best results in these experiments. On our own lawn at our research facility in Kent, we noted similar results for the control of Japanese beetle grubs."

TUCO researchers report that Proxol is one of the fastest-acting turf insecticides on the market. A water-soluble powder, it is designed for use on lawns and can be used alone or in conjunction with disease control programs. Proxol breaks down rapidly and does not accumulate in the environment.

Rockland Chemical Co. John R. Wittpenn, president of the



For Carriage-Trade Results...

WATER SOLUBLE PLANT FOODS by PRO-LAWN



Ideal for establishing and maintaining shrub plantings, gardens and lawns. Plant foods available in 25 and 45 lb fiber drums with poly lining or in reusable plastic drums.

30-10-10 For acid-loving plants such as azaleas, rhododendrons, evergreens, camellias.

20-20-20 Excellent for foliar feeding. For roses and all perennial and annual flowers.

PLUS High- and extra-high phosphate . . . low- and no-phosphate formulations.

Timely Deliveries. Samples on request.

Pro-Lawn has a complete line of fertilizers in both water soluble and granular forms.

For more information, current prices, write or call:



PRO-LAWN PRODUCTS, INC. Box 4908 • Syracuse, NY 13221 • 315-477-6112

Circle 130 on free information card



To improve your lawn care business, just add water.



You've got a growing business, we've got a growing business. Why not combine them?

Installing underground automatic

sprinkler systems is easy and profitable.

And with quality controllers, heads and valves from Rain Bird, rainmakers to the world since 1933, your customer is assured the best system available. His lawn stays healthier and so do you.

For more information on this money-making opportunity, contact your nearest Rain Bird distributor. Or write to us at the address below.

We'll show you how easy it is to make more green while you make more green.

RAIN BIRD
Bringing new ideas to life.

7045 N. Grand Avenue, Glendora, CA 91740

© Rain Bird is a registered trademark of Rain Bird Sprinkler Mfg. Corp., Glendora, California. © 1978 Rain Bird Sprinkler Mfg. Corp.

Circle 132 on free information card

LAWN CARE INDUSTRY READER SERVICE CARD— MARCH 1979 (expires in 90 days)

Use this prepaid reader service card to get additional information on products or services mentioned in this issue (Card must be completed before processing)

NAME _____ TITLE _____

COMPANY _____

BUSINESS ADDRESS _____

CITY _____ STATE _____ ZIP _____

If you would like a subscription to LAWN CARE INDUSTRY circle number 101. Subscription cost is \$10.00 per year.

To help us better service you editorially, please answer the following:

- Are you primarily involved in:
 - Chemical lawn care and maintenance services
 - Chemical application only
 - Mowing and other maintenance services
 - Other (specify) _____
 - Application
 - Liquid
 - Granular
 - Both
 - Is your business location:
 - Headquarters
 - Branch office
 - Is your business:
 - Independent
 - Chain
 - Franchise
 - Other (specify) _____
 - Please send product information only on items circled
 - Please have a salesman call me about items circled. Best time to call me is _____ or _____
- Title:
 - President
 - Owner
 - Manager
 - Technician
 - Other (specify) _____
 - Number of accounts:
 - Less than 500
 - 500-1,000
 - 1,001-5,000
 - 5,001-10,000
 - 10,001-25,000
 - 25,000 or more
 - Estimated annual sales volume:
 - Less than \$50,000
 - \$50,001-100,000
 - \$100,001-250,000
 - \$250,001-500,000
 - \$500,001-1,000,000
 - \$1,000,000 or more

SIGNATURE _____ DATE _____

CIRCLE THE ITEM NUMBERS FOR FREE DETAILS ON PRODUCTS AND SERVICES

101 102 103 104 105 106 107 108 109 110 111 112 113 114 115 116 117 118 119 120
 121 122 123 124 125 126 127 128 129 130 131 132 133 134 135 136 137 138 139 140
 141 142 143 144 145 146 147 148 149 150 151 152 153 154 155 156 157 158 159 160
 161 162 163 164 165 166 167 168 169 170 171 172 173 174 175 176 177 178 179 180
 181 182 183 184 185 186 187 188 189 190 191 192 193 194 195 196 197 198 199 200
 201 202 203 204 205 206 207 208 209 210 211 212 213 214 215 216 217 218 219 220
 221 222 223 224 225 226 227 228 229 230 231 232 233 234 235 236 237 238 239 240
 241 242 243 244 245 246 247 248 249 250 251 252 253 254 255 256 257 258 259 260
 261 262 263 264 265 266 267 268 269 270 271 272 273 274 275 276 277 278 279 280



NO POSTAGE
NECESSARY
IF MAILED
IN THE
UNITED STATES

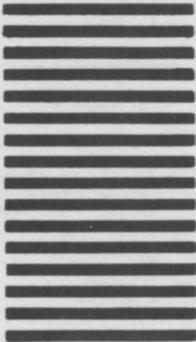
BUSINESS REPLY MAIL
 FIRST CLASS PERMIT NO. 2675 CLEVELAND, OHIO

POSTAGE WILL BE PAID BY ADDRESSEE

Attention: Circulation Dept.

LAWN CARE INDUSTRY

9800 Detroit Ave.
 Cleveland, Ohio 44102





NO POSTAGE
NECESSARY
IF MAILED
IN THE
UNITED STATES

BUSINESS REPLY MAIL
FIRST CLASS PERMIT NO. 665 DULUTH, MINN

POSTAGE WILL BE PAID BY ADDRESSEE



LAWN CARE INDUSTRY

P.O. BOX 6136

DULUTH, MINNESOTA 55806

SUBSCRIPTION

GROUP SUBSCRIPTION RATE: 5 or more copies — \$7.00 per subscription.
Include all names and addresses on company letterhead.

PAYMENT ENCLOSED **BILL ME**

Make check or money order payable to **LAWN CARE INDUSTRY.**

1 Year — \$10.00 2 Years — \$18.00 3 Years — \$23.00

NAME _____ TITLE _____

COMPANY _____

BUSINESS ADDRESS _____

CITY _____ STATE _____ ZIP _____

1. Are you primarily involved in:
 Chemical lawn care and maintenance services
 Chemical application only
 Mowing and other maintenance services
 Other (specify) _____

3. Is your business:
 Independent
 Chain
 Franchise
 Other (specify) _____

5. Number of accounts:
 Less than 500
 500-1,000
 1,001-5,000
 5,001-10,000
 10,001-25,000
 25,000 or more

- Application
 Liquid
 Granular
 Both

4. Title:
 President
 Owner
 Manager
 Technician
 Other (specify) _____

6. Estimated annual sales volume:
 Less than \$50,000
 \$50,001-100,000
 \$100,001-250,000
 \$250,001-500,000
 \$500,001-1,000,000
 \$1,000,000 or more

2. Is your business location:
 Headquarters
 Branch office

D Signature _____ Date _____

West Caldwell, New Jersey-based company, told LAWN CARE INDUSTRY that his company is anticipating announcing availability of a new turf insecticide — Rockland Grub Control Granular with Dylox — in the very near future.

Other products his company offers include: granular Dursban Chinch Bug Killer, Super Dursban Lawn Insect Killer recommended for larger turf areas; granular Diazinon Lawn Insect Killer; 5% Diazinon Granular; 14% Diazinon Granular; and Dursban 2-E.

Southern Mill Creek. William W. Broome, Jr., vice president of Southern Mill Creek Products Co., Inc., Tampa, Fla., outlined for LAWN CARE INDUSTRY his company's pesticide formulations designed specifically for the lawn care businessman:

Dursban Plus — A special formulation of Dursban and DDVP with wetting agent to be used in the control of armyworms, sod webworms, crickets, ticks and fleas. It penetrates deep into grass thatch, driving the insects up and out.

Dursban 2E — Contains two pounds chlorpyrifos per gallon. Labeled for many turf and ornamental usages, also mosquito and area tick control.

Diazinon AG500 — Very effective on most insects attacking turf and ornamental plants.

Lawn & Perimeter Granules — Contains one percent chlorpyrifos. May be used in a fertilizer spreader on turf for many turf insects.

Dursban Mole Cricket Bait — Special bait to control mole crickets damaging ornamental turf in coastal areas.

Crown Chemicals. Stephen O'Rourke of the St. Louis-based company listed insecticides his company handles for the lawn care industry: Cygon 2E, Dexon 35 WP, Diazinon 4E, Dursban 2E, Dursban 4E, Kelthane, Lindane, Metasystox R, Sevin 80, Sevin 50W, DZ-25, Bagworm and Mite Spray, Baygon 1.5, Diazinon 50W, Hopkins Lawn Granules, Ficam and Diazinon 14G.

O.M. Scott & Sons. Ed Dotson, manager of commercial sales for ProTurf, a division of O.M. Scott & Sons, Marysville, Ohio recently told LAWN CARE INDUSTRY that lawn care companies should be considering long-range lawn care programs to upgrade or maintain the customer's lawn at a uniform level of turf quality and density. Also, that important consideration in their program be geared to preventing serious damage from insects.

He added that many lawn care companies are currently using ProTurf insecticides to control active insects or as a preventive measure. ProTurf firmly believes that regardless of the approach to the insect problem, it is critical to identify any problem in the early stages, know the insect causing the damage and use the correct product per label instructions.

Dotson said: "If you are not sure what type of insect you are trying to control, either contact your area ProTurf tech rep or call us toll-free at 1-800-543-0006 and ask for myself, Jim George,

Jim Diley or Dennis Kasper. He added, "ProTurf is a company ready and willing to help identify a problem even if you are not using our products."

Dotson said ProTurf has three well-tested and proven insecticides that are currently being used by the lawn care industry. Those products are:

ProTurf Insecticide One, active ingredient Diazinon; ProTurf Insecticide III and ProTurf Fertilizer Plus Insecticide III. The latter two contain the active ingredient chlorpyrifos (Dursban, registered of trade name of Dow Chemical Co., Midland, Mich.)

All three granular insecticide products are pre-formulated and ready to use right out of the bag — so you will get the proper rate of both is insecticide and fertilizer without pre-mixing or measuring.

Dotson points out that the best

product for a lawn care company might be the ProTurf Fertilizer Plus Insecticide III because it combines a complete fertilization with an insecticide. "You can do two jobs at once, whereas in many cases you many have been making two trips to your customer's lawn." He said the exception to this would be where billbugs and/or white grubs are a recurring problem — if so, ProTurf Insecticide I is necessary.

COMPANIES

Eagle Chemical moves, realigns sales staff

Eagle Chemical has completed its move to larger, company-owned facilities in northern California, and is now

offering improved service and efficiency from its three locations in Anaheim, Coachella and Santa Clara.

According to Eagle Chemical president Ron Richardson, the company's new facility at 3185 Molinaro St., Santa Clara, has 22,000 square feet of warehouse space and stocks more than 2,500 products, including insecticides, herbicides, fungicides, liquid and dry fertilizers, seed and related items. Walt May manages the new facility.

The company has also announced the assignment of new territories to field representatives Gary Atkins and Alex "Sandy" Stuart. Atkins has assumed new responsibilities for sales and customer relations in San Diego and Orange counties, while Stuart has taken over the territory which includes east Los Angeles, San Bernardino, Riverside and Kern counties.

How Roundup® helped Jim Siegfried renovate this fairway in days, without closing it for one minute.



Take a good look at this good-looking fairway.

Last fall, Jim Siegfried found a way to clean it up, without tearing it up — at the height of his club's busy season. With Roundup® herbicide by Monsanto.

Jim is the Greens Superintendent at Losantiville Country Club, Cincinnati, where bermudagrass had become a serious problem on the 18th fairway. To control it, Jim applied Roundup once — while the weeds were still actively growing — right at the start of the Labor Day weekend.

"That's really 'prime time' here," Jim told us. "But after we applied Roundup, we kept the fairway in play the whole weekend, and after. The members played right over it, with no problem."

Since Roundup has no residual soil activity, and won't wash or leach out of treated areas to injure desirable plants, Jim simply took normal precautions against spray drift — and didn't worry about damaging desirable vegetation along the fairway.

Even better, he was able to re-seed right into the dying bermudagrass only 7 days after applying Roundup — without loss of playing time or inconvenience to the membership.

Reinfestation won't be a big problem for Jim, either. He knows that Roundup destroyed the rhizomes of the treated weeds, helping prevent their regrowth.

Jim thinks he'll use Roundup again this year — and apparently some club members hope so, too. "As soon as they saw how good this fairway looks, some of the members started asking when I'm going to do the same for #10, where we have some more bermuda. I'll probably tackle that with Roundup this fall!"

If controlling many tough emerged weeds and grasses is a problem for you, see your local Monsanto representative or chemical dealer soon for your supply of Roundup.

Roundup. It worked for Jim Siegfried. It can work for you.



There's never been a herbicide like this before.

ALWAYS READ AND FOLLOW THE LABEL DIRECTIONS FOR ROUNDUP.
Roundup® is a registered trademark of the Monsanto Company. © Monsanto Company, 1979.
For more information, contact Monsanto Agricultural Products Company,
800 North Lindbergh Blvd., C3NF St. Louis, Mo. 63166 (314) 694-1000 RF-01D

BEHIND THIS ISSUE



You know, I complain a lot, but I really don't have it all that bad. And three of the reasons why I say that are the ladies in the picture to the right.

LAWN CARE INDUSTRY has a circulation in excess of 12,000 readers, and Terri Hutspenpillar is in charge of processing all of the subscription orders that come through our offices. Her assistants are Ange Slusher and Sharon Jones.

Make no mistake about it, they have to handle a lot of phone calls, and spend a lot of time deciphering hand-written notes from people who want to begin receiving the magazine (lawn care businessmen are right up there with doctors when it comes to legibility of handwriting). It is just a lot of paperwork, and Terri, Sharon and Ange do a great job. They also do a great job in brightening up our offices, as you can see from looking at the picture.

And they are pretty patient with me too. When I go to a turf conference or industry meeting, I inevitably come back with a briefcase-full of business cards and cocktail napkins with the names of lawn care businessmen who want to begin receiving the magazine. I just dump it all on their desks and they take it from there.

The reason I bring all of this up is that our circulation is growing every day, and as it grows, the magazine and the industry it serves is becoming more tightly knit than ever before. Terri, Sharon and Ange are as much a part of LAWN CARE INDUSTRY as any of our editors or marketing staff, and I think it is important that you know them.

If you have a problem with your subscription, there are two things you can do. First, you can call Terri collect at 216-651-5500, extension 563, explain what your problem is, and she or Sharon or Ange will do all they can to get it solved as quickly and easily as possible. Your second choice is to call me



Slusher (left), Jones, and Hutspenpillar

with the problem. I kind of like it this way, because then it gives me an excuse to go over to their offices and visit with them a little bit — and I usually remember to give them the information too.

Like I said, I really don't have it all that bad.

Bob Earley

ADVERTISERS

Adelphi	29
Agro-Chem	37
American Pelletizing	41
Ashland Chemical Co.	6
Aquatrols Corp. of America	7
Champion Brass	7
Ciba-Geigy Corp.	2-3
Consolidated Services	41
Diamond Shamrock Corp.	cover III
Dow Chemical Co.	12-13
Du Pont Co.	22-23
Excel Industries	10
Hahn, Inc.	36
Hanson Equipment Co.	40
Hercules, Inc.	8
Hypro, Div. of Lear Siegler	39
International Seed	35
Jacklin Seed Co.	11
Jacobsen, Div. of Textron, Inc.	24-25
Kubota Tractor Corp.	14-15
Lakeshore Eqpt. & Supply Corp.	5, 16
Lawn Pride	41
Lofts Pedigreed Seed, Inc.	cover IV
Micron West	34
Monsanto	41
Power Spray Technology, Inc.	18
Pro-Lawn	40
Rain Bird Sprinkler Mfg. Corp.	39
Rhone-Poulenc, Inc.	30-31
Rockland Chemical Co.	36
Sensation Corp.	17
Sierra Chemical Co.	20
Strong Enterprises, Inc.	9
3M Co.	21
Union Carbide Corp.	32-33
U.S. Gypsum	19
Velsicol Chemical Corp.	34

CLASSIFIED

When answering ads where box number only is given, please address as follows: Box number, c/o LAWN CARE INDUSTRY, Dorothy Lowe, Box 6951 Cleveland, Ohio 44101.

Rates: 35¢ a word for line ads, 65¢ a word for display ads. Box numbers add \$1 for mailing. All classified ads must be received by the publisher before the 10th of the month preceding publication and be accompanied by cash or money order covering full payment.

Mail ad copy to Dorothy Lowe, LAWN CARE INDUSTRY, Box 6951, Cleveland, Ohio 44101.

HELP WANTED

OUR EXPANDING OPERATION enables us to offer several excellent opportunities for highly qualified experienced individuals in the following areas: 1) Landscape Design/Sales: Responsibilities include; negotiating with architects, developers and contractors to secure landscape construction contracts; estimating and bidding; site-design; scheduling and supervision of 3 to 5 crews; and complete coordination of landscape construction projects. Successful applicant will have a Bachelors Degree in Landscape Architecture and 1 to 2 years experience or the equivalent in experience. — 2) Landscape Foremen: responsibilities include: proper installation of plant material and landscape features including grading; correct use and care of equipment; and supervision of crews. Successful applicants will have 1 to 3 years of experience in the landscaping industry with at least 1 year in a supervisory capacity and knowledge of reading blueprints. — 3) Landscape Maintenance Foremen: responsibilities include: proper care and maintenance of plant material (i.e. fertilizing procedures, spraying, mowing, pruning and cultivation); correct use and care of equipment; and supervision of crews. Successful applicants will have 1 to 3 years of experience in landscape maintenance with at least 1 year in a supervisory capacity. These are year-round positions with excellent starting salaries and full

company benefits. If you feel you are qualified for one or more of these positions described above, and you are an ambitious self-motivated, knowledgeable individual who enjoys a challenge and one who takes pride in his work, then you are what we are looking for. Please contact our office immediately. Bob's Green Thumb Landscaping Co., Inc., Rae Ann Borst, Secretary, RR 1, Box 131, Mundelein, Illinois 60060. (312) 634-9300.

POSITIONS OPEN NOW. Leading horticultural services company in Houston, Texas (established, 1959). Major expansion program requires experienced working crew supervisors and assistants in Landscape Maintenance Division (leading to superintendent positions). Chemical Division (industrial weed control and chemical lawn maintenance) and Landscape Division — experience all levels. All division, including Indoor (plant leasing & greenhouse) offer career opportunities for untrained, but willing to learn. Apprentice program, promotions, excellent fringes. Year round, no layoff jobs. The Spencer Company, P.O. Box 16113, Houston, Texas 77002. Call Len Spencer (713) 691-3991.

GROWTH OF ESTABLISHED CHICAGO lawn care firm offers opportunity for individuals with proven performance record. Facility manager: Seek seasoned professional with strength in operations management. Service supervisor: Experience necessary for management of \$200,000 plus accounts and service staff. Agronomy/turf background and field experience desirable. Service technicians: Experienced desired, but will train growth-oriented person. Send qualifications or call for immediate consideration. Sherry Roethe, c/o Tempo 21, Inc., 195 E. Kehoe, Carol Stream, Illinois 60187. 312 682-3201.

EXPERIENCED WORKING FOREMAN for landscape crew. Planting, grading, and pruning experience. Benefits. Rutland Nurseries, Massachusetts. Phone 617 886-4972.

EXPERIENCED INSTALLER for installing and maintaining all un-

derground irrigation systems. Benefits. Rutland Nurseries, Massachusetts. Phone 617 886-4972.

EXPERIENCED FOREMAN for fertilizing crew. Benefits. Rutland Nurseries, Massachusetts. Phone 617 886-4972.

FOR SALE

FOR SALE: Finn Lawn Fertilizer Feeder, 800 gal. 16 HP Briggs, 1 year old, like new. Available with 1970 International cabover 2 ton truck, or without. Lawn & Turf Landscaping, Inc., 6136 Winchester Road, Ft. Wayne, Indiana 46819.

PRACTICE RANGE GOLF BALLS from \$1.50 per dozen. Solid yellow balls \$2.50. Free brochure. Raven Golf, 6148 Thornycroft, Utica, Mich. 48087. 313 731-3469.

USED EQUIPMENT

1976 G.M.C. Lawn spray trucks, 800 and 1200 gallon. Fully equipped. 1 305 859-0182.

1976 CHEVY C-150 lawn spray truck, excellent condition, 1,200 gallon steel tank mounted on 14 foot platform. 2 Hanney electric hose reels with 500 feet of hose on each. Bean 20-20 pump mechanical and jet agitation. \$11,500. Call or write Rusin Landscaping, Inc., 340 North Drive, Lorain, Ohio 44053. Phone 216 233-8217.

MISCELLANEOUS

OVERBOOKED?? ... BREAKDOWNS??

RENT OURS DAILY, WEEKLY OR MONTHLY
 Tankers — 1500 gal., P.T.O., Auto Rewind . . . \$115.00 Day
 1 Ton — 750 gal., P.T.O., Auto Rewind . . . \$ 75.00 Day
NEED CAPITAL?? We buy your equipment and lease back!!
NEED NEW EQUIPMENT?? We lease all kinds!!
 WRITE NOW TO: GREEN THUMB LEASING CORP.
 9325 Harriet Ave. S., Bloomington, MN 55420

KNOW pH INSTANTLY. Electronic tester, portable, handheld. For soil, liquids, etc. Low cost (under \$25). Details free. A & H Marketing, Dept. L-2, 8325 Dru Ave., SE, Albuquerque, NM 87108.

COMING

The April issue of LAWN CARE INDUSTRY will feature a report on the San Francisco market by assistant editor Dan Moreland. Also, Moreland is working up an indepth report on how some of the major lawn care companies across the country handle their employe training programs. Also on tap are a story comparing different advertising mediums by New York Lawn-A-Mat franchisee Sheldon Ofshe, and a story which discusses the merits of leasing lawn care vehicles by leasing expert Steve Martin.



Ofshe



Martin

For the turf you care for: season-long protection against crabgrass, Poa annua and other annual grasses and weeds with America's leading preemergence turf herbicide.

Dacthal is number one in its field. Not only because it is so effective, but because it controls more than 20 unwanted weeds and grasses. Applied properly, it lays down a barrier that stops early and late germinating annual weeds without affecting healthy, growing turf grasses. Tough weeds like crabgrass and Poa annua can't stand up to Dacthal.

The help you need for total turf care.

Dacamine® provides postemergence control of over 70 broadleaf weeds including dandelion, annual chickweed, knotweed and Canada thistle. It works right down to the roots. So tough perennials don't return.

Daconate® is the postemergence herbicide that knocks out nutsedge, chickweed, wood sorrel, sandbur and other grassy weeds. It's a ready-to-use liquid herbicide with a built-in surfactant for uniform wetting.

Daconil 2787® is the broad-spectrum fungicide that stops nine fungus diseases on turf. Use it from spring to fall to prevent dollar spot, leaf spot, red thread, stem rust of blue grass, large brown patch. It's effective even in hot weather. Provides disease control on a number of ornamentals.

Count on the big four from Diamond Shamrock to make your job easier.



Circle 145 on free information card

Diamond Shamrock
The resourceful company.

See your turf chemicals supplier, or contact the Diamond Shamrock Agricultural Chemicals Division sales office nearest you:
Three Commerce Park Square, 23200 Chagrin Blvd., Beachwood, OH 44112
• 1760 The Exchange, Suite 100, Atlanta, GA 30339 • 5333 Westheimer, Suite 850, Houston, TX 77002 • Commerce Plaza Bldg., 2015 Spring Rd., Oakbrook, IL 60521 • 617 Veterans Blvd., Redwood City, CA 94063.

Dacthal



5,000,000 • **POUNDS Sold Worldwide**

baron
KENTUCKY BLUEGRASS



Baron Outsells Merion by more than 10 to 1!

**No Wonder:
Quicker Germination
Less Fertilization Required
Greater Disease Resistance
More Widely Adaptable
Less Expensive**



Merion
KENTUCKY BLUEGRASS



Lofts Pedigreed Seed, Inc.
Bound Brook, N.J. 08805 / (201) 356-8700

Lofts/New England
Arlington, Mass. 02174
617-648-7550
Great Western Seed Co.
Albany, Ore. 97321
503-926-2636

Lofts Kellogg Seed Co.
Milwaukee, Wis. 53201
414-276-0373
Lofts/New York
Cambridge, N.Y. 12816
518-677-8808

Lofts/Maryland
Landover, Md. 20785
301-322-8111
Oseco Ltd.
Brampton, Ont., Can.
416-457-5080

Merion production figures taken from "Seed Crops" published by U.S. Dept. of Agriculture, Crop Reporting Board, Washington, D.C.
Baron production figures supplied by Barenbrug Holland and Lofts Pedigreed Seeds, Inc.