

# LANDSCAPE MANAGEMENT

Formerly WEEDS TREES & TURF



**WILDFLOWERS  
IN LANDSCAPES**

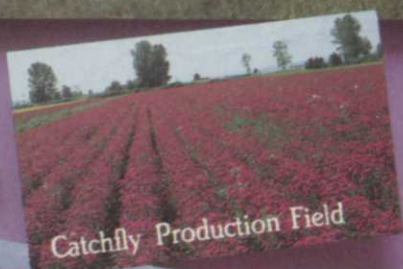
**Turf Disease  
Control Guide**



Turf-Seed's

# Bloomers!<sup>TM</sup>

NOW EVEN EASIER TO ORDER!  
1-800-247-6910



Catchfly Production Field



Wildflower Trials, Hubbard

## Bloomers Wildflower Mixture and Designers Kit for Landscape Pros.

Bloomers Wildflower mixture, grown and marketed by Turf-Seed, Inc., for golf course, park and landscape use,

is sold only through a distributor network. Call us for the distributor in your area, or, if you're an established seed dealer interested in handling a colorful line, give us a call.

Bloomers mixture was selected by Crystal Fricker to perform well in most climatic zones.

Individual species and custom mixes available.

Box of 25 9 gram sample packets will be provided to dealers with an order of 50 lbs. or more. Call or write for details.



Crystal Fricker with 1 lb. "Baby Bloomers"



P.O. BOX 250, HUBBARD, OR 97032

**Turf-Seed, Inc.**

503 981-9571

TWX 510-590-0957

1-800-247-6910

Circle No. 142 on Reader Inquiry Card

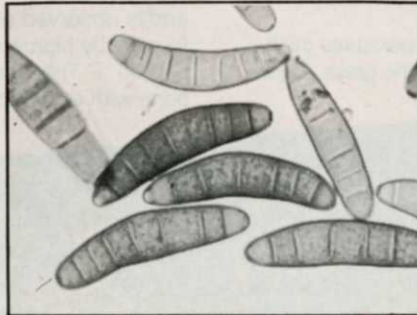


# LANDSCAPE MANAGEMENT

Formerly WEEDS TREES & TURF



24



32



56

## 18 COVER STORY: GOING WILD

Wildflower mixes are a popular low-maintenance alternative on rights-of-way, golf courses and home gardens. But before you go wild with color, seed companies say it's important to learn about the mixes.

## 24 ON THE R.O.W. AGAIN

With warmer weather, right-of-way managers are getting back outside. They must cope with everything from managing roadside vegetation to managing their employees.

## 27 MAKING THE GRADE

A state-approved program was developed by the Virginia highway department to train potential chemical applicators for the state tests.

## 32 TURF DISEASE CONTROL GUIDE

With the hotter, drier months on their way, disease activity on turf picks up. Here are ways to keep diseases to a minimum.

32 COOL-SEASON

46 WARM-SEASON

## 56 KEEPING IT CLEAN

Torre & Bruglio Landscaping of Michigan is blessed with the sweet smell of success. No wonder: it's squeaky clean.

COVER: Crystal Rose Fricker of Pure Seed Testing, by Larry Kassell

## DEPARTMENTS

- 4 NEWS/TRENDS
- 6 GREEN INDUSTRY NEWS
- 14 SHORT CUTS
- 60 ON DESIGN
- 64 RESEARCH UPDATE
- 68 PROBLEM MANAGEMENT
- 72 EVENTS
- 74 CLASSIFIED
- 82 AD INDEX
- 84 OUTLOOK



LANDSCAPE MANAGEMENT, formerly WEEDS TREES & TURF, (ISSN 0043-1753) is published monthly by Harcourt Brace Jovanovich Publications. Corporate and Editorial offices: 7500 Old Oak Boulevard, Cleveland, Ohio 44130. Advertising Offices: 7500 Old Oak Boulevard, Cleveland, Ohio 44130, 111 East Wacker Drive, Chicago, Illinois 60601 and 455 East Paces, Ferry Road, Suite 324, Atlanta, Georgia 30305. Accounting, Advertising Production and Circulation offices: 1 East First Street, Duluth, Minnesota 55802. Subscription rates: \$25 per year in the United States; \$35 per year in Canada. All other countries: \$70 per year. Single copies (pre-paid only): \$2.50 in the U.S.; \$4.50 in Canada; elsewhere \$8.00; add \$3.00 for shipping and handling per order. Second class postage paid at Duluth, Minnesota 55806 and additional mailing offices. Copyright © 1987 by Harcourt Brace Jovanovich, Inc. All rights reserved. No part of this publication may be reproduced or transmitted in any form or by any means, electronic or mechanical including photocopy, recording, or any information storage and retrieval system, without permission in writing from the publisher.

POSTMASTER: Send address changes to LANDSCAPE MANAGEMENT, P.O. Box 6198, Duluth, Minnesota 55806-9898.



A HARcourt BRACE JOVANOvICH PUBLICATION



# Pythium and Snow Mold Can Ruin Your Turf.

## Pythium Blight

Pythium Blight attacks all cool season turfgrasses and Bermudagrass. Normally, it is a high temperature, high humidity and wet weather disease.

Severity is greatest during periods of high temperatures (high 80s and 90s), little or no wind movement, where the grass is lush and dense and soil moisture is excessive. The disease can also be devastating with temperatures in the low to mid 60s, especially during periods such as the early Spring and Fall when high humidity and excess water are present, and during overseeding of Bermudagrass with cool season grasses in the Southern United States.

Grass seedlings are extremely susceptible to Pythium attack. Affected seedlings wilt, collapse and die (damping off) resulting in irregular dead patches in the turf. Pythium is a common cause.

## It happens fast

The disease first appears as small irregular shaped spots ranging up to 4 or 6 inches in diameter. These spots first appear as dark, greasy or slime water-soaked patches; the leaves soon dry out, shrivel and the color fades to a light brown or straw color. In early morning, or when the air is saturated with moisture, the leaves of diseased plants may be covered with a fluffy white mold growth, hence the name "Cottony Blight." These small spots may enlarge up to 2 or 3 feet in one day.

## What to Look For

Diseased areas may coalesce to form streaks a foot or more wide. These streaks are normally caused by fungal structures that were previously washed or carried by surface water from a diseased area. Mower movement will also transport fungal structures from diseased areas to healthy areas, thereby increasing spread of the fungus. Late stages of the disease can spread very rapidly and can kill large, irregular sections of turf in 24 to 48 hours. Infected areas are light brown and usually have no pattern of spots or streaks typical of the early stage.

## Gray Snow Mold

Gray Snow Mold or Typhula Blight attacks most northern turfgrasses. The disease usually develops under a snow cover and is observed as the snow melts. Fungus development is favored by high soil moisture and temperatures between 32° and 40° F. The worst attacks of gray snow mold occur in seasons with exceptionally warm wet autumns. Snow fall on unfrozen turf makes an ideal environment for the organism to grow, infect and destroy turfgrasses.

## What to Look For

Gray Snow Mold is usually visible at the first spring thaw. From a distance it appears as roughly circular light yellow to straw colored dead areas 2 inches to 6 inches in diameter but may reach a diameter of 2 feet or more. Leaves soon progress to a grayish-white color, finally becoming matted together. Wet grass blades are covered with a fluffy, white to bluish-gray mold or a silvery crust that disappears as the grass dries. As the infected areas increase in size, the margins may be a darker grayish white. Under favorable conditions for disease, the spots may coalesce and kill large irregular areas of turf. Typhula Blight not only attacks foliage, but infection may move down into the crown area completely destroying the grass plant.



General view of Pythium Blight on Rye seeding.



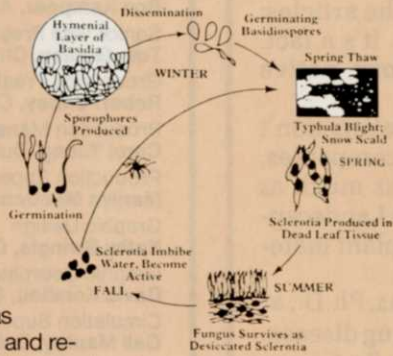
Typhula Blight or Gray Snow Mold



# How You Can Get Control.

## Use the Right Fungicide. **TERRANEB SP.**

Simple to use, **TERRANEB SP** provides fast-acting control over Pythium and Snow Mold. Its time-tested formula works systemically, giving you extended disease protection. It's biodegradable, has extraordinarily low toxicity, and requires lower use-rates, at less cost.



## To Control Pythium Blight

Apply 4 ozs./1000 sq. ft. or 10 to 11 lbs./acre of **TERRANEB SP** when the disease first appears and repeat as needed. It is suggested that you always have some **TERRANEB SP** on hand, because Pythium Blight occurs unexpectedly, and once it appears, it can spread fast.

Good surface and subsurface drainage is essential when establishing a new area. The soil pH should be between 6 and 7. Do not over-water seedbeds or established turf in hot weather. Maintain adequate, but not excessive, balanced fertility based on a soil test. Avoid over-fertilizing in hot weather with a highly soluble, high-nitrogen product. Good air circulation, light availability and thatch removal are other cultural controls.

## To Control Snow Mold

Apply **TERRANEB SP** Turf Fungicide in autumn before the first heavy snow is forecast. Apply at the rate of 6 to 9 ozs./1000 sq. ft. in as little water as is needed to get complete coverage of the surface of the plant. Time and rate of application is dependent upon your geographic location and the normally expected severity of the disease. Applications in northern states would normally be made earlier and at higher rates than in the mid-Atlantic or mid-Continent states. It is important to avoid excessive nitrogen fertilizers after early to mid-autumn.

Keep **TERRANEB SP** on hand. Because when Pythium Blight and Snow Mold show up, they move fast. So should you.



## Time Tested **TERRANEB SP** TURF FUNGICIDE



For further information, write:



**Kincaid Enterprises, Inc.**

P.O. Box 671, Nitro, WV 25143

or call your local distributor.



## The wave of the future

■ Trends, predictions, analyses...all are an accepted part of the bar-graph business world of the '80s. The green industry isn't immune to the fortune-telling analysts. But not all changes can be calculated on a computer printout. Sometimes, change just creeps up on you.

This issue of **LANDSCAPE MANAGEMENT** is a good example. It contains a consistent theme echoing through most of the articles: biological alternatives. It isn't a trend or a prediction. It's a fact. The green industry is actively promoting biotechnology, native plant materials and environmental consciousness.

Our cover story on wildflowers tells it best. Naturalists don't want foreign seed polluting local gene pools. The seed companies, through extensive research, are regionalizing mixes as much as possible. The Association for the use of Native Plants in Landscaping (ANVIL) has organized in Illinois to promote using plant materials which are drought-tolerant and conserve energy.

The cool-season turf disease guide by Joe Vargas, Ph.D., at Michigan State looks at biological methods for controlling disease. "Jobtalk" (next month) reviews Agri-Diagnostics, the first company to develop a turf disease detection kit which works with biotechnology. We even received a letter recently from a man who pointed out the differences between weeds and native plants.

Biotechnology has infiltrated the green industry. It not only has changed disease detection and turf management, but plant breeding, as well. Dr. Bill Torello at the University of Massachusetts is developing seed containing endophytes (insect-resistant fungi) through tissue culture cloning.

Chemicals are by no means obsolete. Nor will they be in our lifetime. Nor should they be. Despite the media-incited controversy, chemicals, when used properly, benefit us all. Disease would be rampant today if chemicals hadn't been developed to kill off pests. Without chemicals, food production would be minimal, and our definition of a "beautiful" landscape would be greatly changed. Chemicals provide a high standard of aesthetics.

Despite the apparent conflict, biotechnology and chemical companies aren't arch enemies. They have a mutual respect for each other. Most chemical companies have researchers studying biotechnology. The applications are phenomenal.

Biotechnology is truly the wave of the future.

### LM Editorial Staff



Jerry Roche



Heide Aungst



Jeff Sobul

### STAFF

Editor  
**Jerry Roche**, Cleveland  
Managing Editor  
**Heide Aungst**, Cleveland  
Assistant Editor  
**Jeff Sobul**, Cleveland  
Publisher  
**Dick Gore**, Atlanta  
Associate Publisher  
**Ron Kempner**, Atlanta  
Senior Vice President  
**Tom Greney**, Chicago  
Group Vice President  
**Robert Earley**, Cleveland  
Production Manager  
**Carol Young**, Duluth  
Production Supervisor  
**Marilyn MacDonald**, Duluth  
Graphic Design  
**Kathy Swingle**, Duluth  
Graphic Coordinator  
**David Komitau**, Cleveland  
Circulation Supervisor  
**Gail Mantay**, Duluth  
Directory Coordinator  
**Michele Ford**, Duluth  
Reader Service Manager  
**Gail Kessler**, Duluth  
Promotion Director  
**Linda Winick**, Cleveland

### OFFICES

**ATLANTA**  
455 East Paces  
Ferry Road Suite 324  
Atlanta, GA 30305  
(404) 233-1817

**CLEVELAND**  
7500 Old Oak Boulevard  
Cleveland, OH 44130  
Editorial: (216) 243-8100

**CHICAGO**  
111 East Wacker Drive  
Chicago, IL 60601  
(312) 938-2344

**SEATTLE**  
1333 N.W. Norcross  
Seattle, WA 98177  
(206) 363-2864

**DULUTH**  
120 West Second Street  
Duluth, MN 55802  
(218) 723-9200

### MARKETING REPRESENTATIVES

**Dick Gore**  
Atlanta (404) 233-1817  
**Ron Kempner**  
Atlanta (404) 233-1817  
**Jon Miducki**  
Cleveland (216) 243-8100  
**Robert Mierow**  
Seattle (206) 363-2864

**HBJ** HARCOURT BRACE JOVANOVIICH PUBLICATIONS

Robert L. Edgell, Chairman; Richard Moeller, President; Lars Fladmark, Executive Vice President; Arland Hirman, Treasurer; Thomas Greney, Senior Vice President; Ezra Pincus, Senior Vice President; Joe Bilderbach, Vice President; James Gherna, Vice President; George Glenn, Vice President; Harry Ramaley, Vice President.



# BROUWER

## turf maintenance team



3.5 & 7 GANG P.T.O. MOWERS  
HYD. & MANUAL LIFT



5-GANG TRACTOR MOUNT MOWER  
PARKS & GOLF COURSE MODELS



5-GANG VERTI-CUT VERTICAL MOWER



LARGE CAPACITY BROUWER-VAC



BROUWER 24-IN. SEEDER/OVERSEEDER



THE BROUWER SOD CUTTER



THE BROUWER GREENSMOWER



BROUWER TRIPLEX-376



TURF ROLLERS MODELS 230 & 130

## aggressive...innovative

The Brouwer Turf Maintenance Team . . . the one to beat.

Check our product line and you are sure to find the machine to suit your requirements.

Golf courses, school boards, landscapers, municipalities, highway departments, parks and recreation departments will all find a machine that fits the bill - and the budget!

Brouwer . . . the name and the products that you can have confidence in. Confidence in the quality, the innovative engineering, the rugged reliability, the lasting value. Confidence in a company that gives "second-to-none" after sales service. Get the best results from your turf maintenance equipment - put the Brouwer turf maintenance team to work - today.

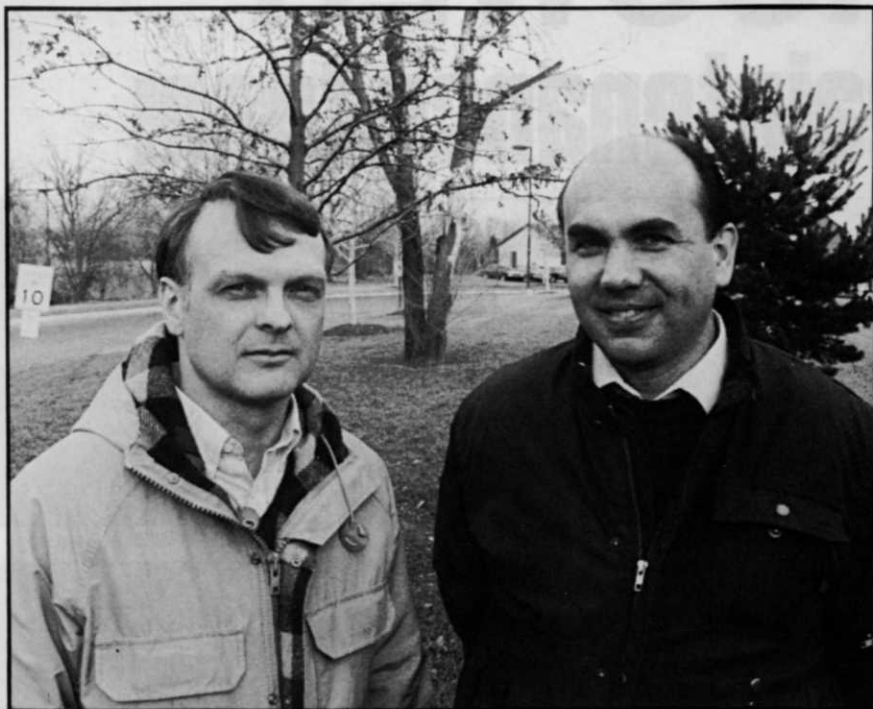
**BROUWER**  
TURF EQUIPMENT LIMITED

An Outboard Marine Corporation Company

7320 Haggerty Rd./Canton, MI. 48187 Telephone (313) 459-3700

Woodbine Avenue/Keswick, Ontario, Canada L4P 3E9 Telex 065-24161 Telephone: (416) 476-4311





Alan Almy (left) and Bob Rinck, co-authors of "Landscape Maintenance Guide," the first manual of its kind in the country.

## REFERENCE

### Housing Authority develops guidelines for management

The Michigan State Housing Development Authority (MSHDA) has developed a two-volume "Landscape Maintenance Guide" which is being distributed to landscape contractors involved in MSHDA projects. This guide is believed to be the first of its kind in the country.

"This is a practical manual that can be used on a daily basis," says Bob Rinck, who co-authored the guide with Alan Almy. "It can apply to anyone who does multi-property sites. We're bordering on areas that other people haven't even touched."

Rinck says that 250 copies have been distributed free and that some colleges and design offices have also expressed interest in obtaining copies. A hardiness zone/climate/maintenance chart comes with the guide.

The guide has served to help strengthen the role of the landscape architect as a team leader among development owners, managers and tenants in maintaining quality housing, Rinck and Almy note.

For more information, contact Rinck, environmental review officer, or Almy, landscape architect, at (517) 373-2001. Address is 401 S. Washington Square, Lansing, MI 48909.

## RESEARCH

### An answer to anaerobic black layer?

Sulfur causes black layer in sand greens, according to researchers at Michigan State University. Black layer is a layer of anaerobic material found at the same level throughout a green.

Joe Vargas, Ph.D., of Michigan State University says theories on black layer attributed it to algae, root dysfunction and excessive water. But his current research shows sulfur to cause the problem.

"Yes, you see algae, but it comes in after the layer is already formed," Vargas says. A rotten egg-like odor will most likely indicate a black layer problem.

Excessive sulfur can get into the green by using water with a high sulfate content or treating a green with sulfur to help balance the pH level. It appears that acid rain also adds to the problem.

The combination of too much sulfur and saturated conditions usually leads to black layer. "You can be most frugal at watering, but then you'll get rain," Vargas says. "Don't mess with sulfur."

Vargas says that sulfur-coated urea products "probably won't release sulfur quick enough to cause a problem." Researchers plan to study potassium and iron sulfate products and those products containing sulfide in the future.

Vargas released his findings at the Reinders Turf Conference in Milwaukee, Wisc.



Joe Vargas, Ph.D.

## INDUSTRY

### ChemLawn reaches agreement on merger

A merger agreement has been reached between ChemLawn Corp. and Ecolab, Inc., St. Paul, Minn.

Ecolab will buy all outstanding shares of ChemLawn for \$36.50 each in cash, ChemLawn officials said. The deal is worth \$370 million.

ChemLawn originally was the tar-

get of a takeover attempt by Waste Management Inc., Oak Brook, Ill., which offered \$33 then \$35 per share.

ChemLawn rejected the Waste Management bid, then told its banker to seek other possible buyers.

ChemLawn had filed suit for a preliminary injunction from the federal

court in Columbus, Ohio after the initial bid, claiming that Waste Management failed to disclose in its tender offer an alleged history of environmental misconduct.

Waste Management officials view the lawsuit as a ploy to use the legal system to delay a tender offer.



## INSURANCE

# Fiberoptics cables create havoc in the turf and landscape industries

The fiberoptics concept may be revolutionary in the telephone industry, but it's giving landscape managers a headache. Fiberoptics has made it almost impossible for landscape contractors to get underground insurance.

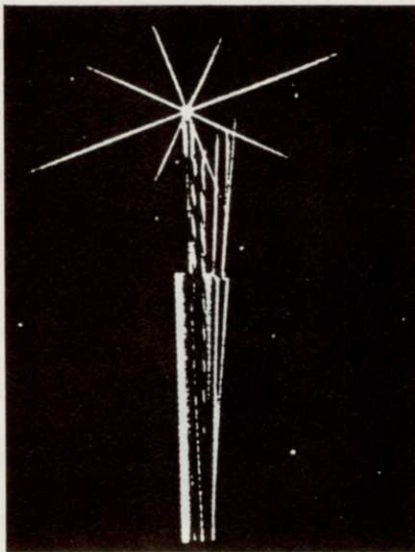
"The problem is that fiberoptics cables can't be spliced," says Jim Leatzow of Financial Guardian Insurance. "You have to dig up several blocks to put in a new one."

Fiberoptics cables are buried only 18 inches underground and can be cut with a shovel.

Leatzow says that some landscape managers may think they are covered, but really aren't. If the letter "U" appears on your policy it means you are not covered for underground. A letter "X" stands for explosion and "C" for collapse. When the letter appears, the company is not covered.

Landscape contractors are particularly hurt by the insurance crisis. But Leatzow says he never hesitates to issue a policy to a design/build firm: "Landscape contractors will fix a problem before it explodes," he says. "I think it's the best of situations, although the rest of the industry is fearful."

In looking for a good policy, Leatzow says to ask an agent to:



- provide more than one quote;
- assist you in identifying your prime areas of risk; and
- provide unique coverage.

To reduce the cost of your insurance program, Leatzow recommends:

- lowering coverage limits;
- accepting higher deductible;
- joining trade associations; and
- getting brokers and insurance companies involved.

Leatzow spoke at the Landscape Expo in Chicago, Ill.



## Manager of the Year

Michael Hugg (center) accepts congratulations and a plaque from Jeffrey Bourne (second from left), president of the Professional Grounds Maintenance Society for being named PGMS/LANDSCAPE MANAGEMENT "Landscape Manager of the Year." Also shown (left to right) are LM group vice president Bob Earley, LM editor Jerry Roche and PGMS executive director Alan Shulder. The award was presented during the Landscape Expo in Rosemont, Ill.

## 1-2-3

Though state EPA regulations have not yet been standardized, towns like Paramus, N.J., have been taking the initiative on safe pesticide storage.

"The town is a forerunner in concerns for residents," says Ed Walsh, superintendent at Ridgewood Country Club.

About two years ago, the town began a chemical awareness program for residents. Part of the program required businesses that stored chemicals, even at low levels, to register for a permit. Walsh says that is not necessarily bad—in fact, it actually helped him.

Inspectors found the club's storage facility unacceptable, forcing the construction of a new facility. Walsh intended to build one soon anyway. This just gave him a good way to get funding for it.

The facility was built under recommendations from George Stanton, a chemical safety engineer. Specifications:

1. Two-thirds of the 1000-square feet, used for fertilizer storage, is unheated.

2. The other compartment is separated by a brick wall. It contains the pesticides, and is well ventilated and heated.

3. The floor on the heated side is six inches below the door sill to prevent seepage if a spill occurs.

Walsh believes his building will be up to standard. The only possible addition he foresees is a concrete apron about six to 10 feet out from the building surrounded by a two-foot-high wall to prevent seepage.

Walsh hopes that, if and when EPA regulations are standardized, engineers like Stanton will work with EPA.



INDUSTRY

## Immigration laws spawn new programs

New immigration legislation aimed at reducing the number of illegal aliens in the U.S. is causing employers to scramble for ways to maintain their workforces.

The new law requires employers to fill out an Employee Eligibility Certification (Form I-9) for every person hired after November 6, 1986, and for all those hired in the future.

The form must be signed by the employee within 24 hours after beginning employment and kept on file three years or one year after the end of employment, whichever is longer.

Failure to follow these procedures can result in fines from \$100 to \$1,000 per employee after June 1, 1987. The law makes it illegal to hire illegal aliens.

As a result, Apprentice Programs are being administered through organized and regulated processes to train replacement workers or finish training illegal aliens as they become naturalized. (Amnesty programs to le-

galize unauthorized aliens are part of Immigration Reform.)

The Landscape Horticulture Center for Personal Development has submitted apprenticeship standards to the Bureau of Apprenticeship and Training for landscape technician and landscape management technician.

The landscape technician program is a two-year or 4,000-hour program while the landscape management program takes one year or 2,000 hours. Both programs require on-the-job training and 140 hours of classroom training, which is not paid for by the employer.



The 50" cut ZTR 501 with state-of-the-art hydrostatic drives. Top flips up for easy service access.

## DIXON ZTR® MOWERS JUST TURNED PRO.

Dixon pioneered zero turning radius mowers a decade ago. And now Dixon has expanded that idea into a 50" cut professional model: the 18-hp ZTR 501.

It's the only professional mower that cuts as closely and moves as nimbly as a Dixon — to cut mowing time by as much as half. And it's engineered and built to maintain its precise handling and performance for many years. See your Yellow Pages, or write: Dixon Industries, Box 494, Coffeyville, KS 67337-0494.



**ZERO TURNING RADIUS MOWERS**



A **Coleman** COMPANY

Circle No. 111 on Reader Inquiry Card

## AWARDS

### Groups honor Butler for industry service

Jack Butler, Ph.D., from Colorado State University, was honored for his years of service with a roast by a number of industry groups at the most recent Rocky Mountain Turfgrass Conference.

The Rocky Mountain Turfgrass Association, in conjunction with the Rocky Mountain Golf Superintendents, the Professional Lawn care Association of Colorado and the Rocky Mountain Sod Growers, surprised Butler with the roast at its annual banquet.

Graduate students, former students and industry colleagues participated in the roast. In addition, the associations presented Butler with a watch and a trip to Hawaii for him and his wife Dianne.

## PEOPLE

### Lawn Institute co-founder dies

Robert W. Schery, Ph.D., died at home in Marysville, Ohio, on March 18th. Schery was founding executive director of The Lawn Institute and a nationally-recognized turf authority.

Schery served as liaison between The Institute and technical specialists at the nation's universities for more than 30 years.

"Bob was a real pioneer," said Eliot Roberts, Ph.D., Schery's successor at The Lawn Institute. "When he came into the turf picture in the 1950s, common-type grasses were in use. Bob Schery was instrumental in orchestrating a shift into the development of proprietary turfseed.

"He was the spark behind making a lot of things happen behind the scenes."

Schery, a Missouri native, received his doctorate from the University of Washington. His books include "A Perfect Lawn" and "Lawn Keeping." Schery also contributed to the "Ency-

*continued on page 14*



For fastest response, use the peel-off label from the front cover.

NAME \_\_\_\_\_

TITLE \_\_\_\_\_

FIRM \_\_\_\_\_ **PLACE COVER LABEL HERE** \_\_\_\_\_

ADDRESS \_\_\_\_\_ **PRINT PHONE NUMBER BELOW** \_\_\_\_\_

CITY \_\_\_\_\_

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

TELEPHONE (        ) \_\_\_\_\_

101	115	129	143	157	171	185	199	213	227	241	255	269	283	297	311	325
102	116	130	144	158	172	186	200	214	228	242	256	270	284	298	312	326
103	117	131	145	159	173	187	201	215	229	243	257	271	285	299	313	327
104	118	132	146	160	174	188	202	216	230	244	258	272	286	300	314	328
105	119	133	147	161	175	189	203	217	231	245	259	273	287	301	315	329
106	120	134	148	162	176	190	204	218	232	246	260	274	288	302	316	330
107	121	135	149	163	177	191	205	219	233	247	261	275	289	303	317	331
108	122	136	150	164	178	192	206	220	234	248	262	276	290	304	318	332
109	123	137	151	165	179	193	207	221	235	249	263	277	291	305	319	333
110	124	138	152	166	180	194	208	222	236	250	264	278	292	306	320	334
111	125	139	153	167	181	195	209	223	237	251	265	279	293	307	321	335
112	126	140	154	168	182	196	210	224	238	252	266	280	294	308	322	336
113	127	141	155	169	183	197	211	225	239	253	267	281	295	309	323	337
114	128	142	156	170	184	198	212	226	240	254	268	282	296	310	324	338

## LANDSCAPE MANAGEMENT

MAY 1987  
This card expires  
July 15, 1987

MY PRIMARY BUSINESS AT THIS LOCATION IS:  
(PLEASE CHECK ONE ONLY IN EITHER  
A, B OR C)

**A. LANDSCAPING/GROUND CARE AT ONE OF THE  
FOLLOWING TYPES OF FACILITIES:**

- 0005  Golf courses  
 0010  Sport complexes  
 0015  Parks  
 0020  Rights-of-way maintenance for highways, railroads & utilities  
 0025  Schools, colleges & universities  
 0030  Industrial & office parks/plants  
 0045  Condominiums/apartments/housing developments/  
hotels/resorts  
 0050  Cemeteries/memorial gardens  
 0060  Military installations & prisons  
 0065  Airports  
 0070  Multiple government/municipal facilities  
 Other type of facility (please specify) \_\_\_\_\_

**B. CONTRACTORS/SERVICE COMPANIES/CONSULTANTS:**

- 0105  Landscape contractors (installation & maintenance)  
 0110  Lawn care service companies  
 0125  Landscape architects  
 0135  Extension agents/consultants for horticulture  
 Other contractor or service  
(please specify) \_\_\_\_\_

**C. SUPPLIERS:**

- 0205  Sod growers  Other supplier (please specify)  
 0210  Dealers, Distributors \_\_\_\_\_

Approximately how many acres of vegetation do you  
maintain or manage? \_\_\_\_\_

What is your title? (please specify) \_\_\_\_\_

I would like to receive (continue receiving)

LANDSCAPE MANAGEMENT each month: YES  NO

Your Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Circle  
the  
Reader  
Service  
numbers  
of those  
items of  
interest  
to you.





**BUSINESS REPLY MAIL**

FIRST CLASS PERMIT NO. 665 DULUTH, MINNESOTA

POSTAGE WILL BE PAID BY ADDRESSEE

READER SERVICE DEPARTMENT

**LANDSCAPE  
MANAGEMENT**

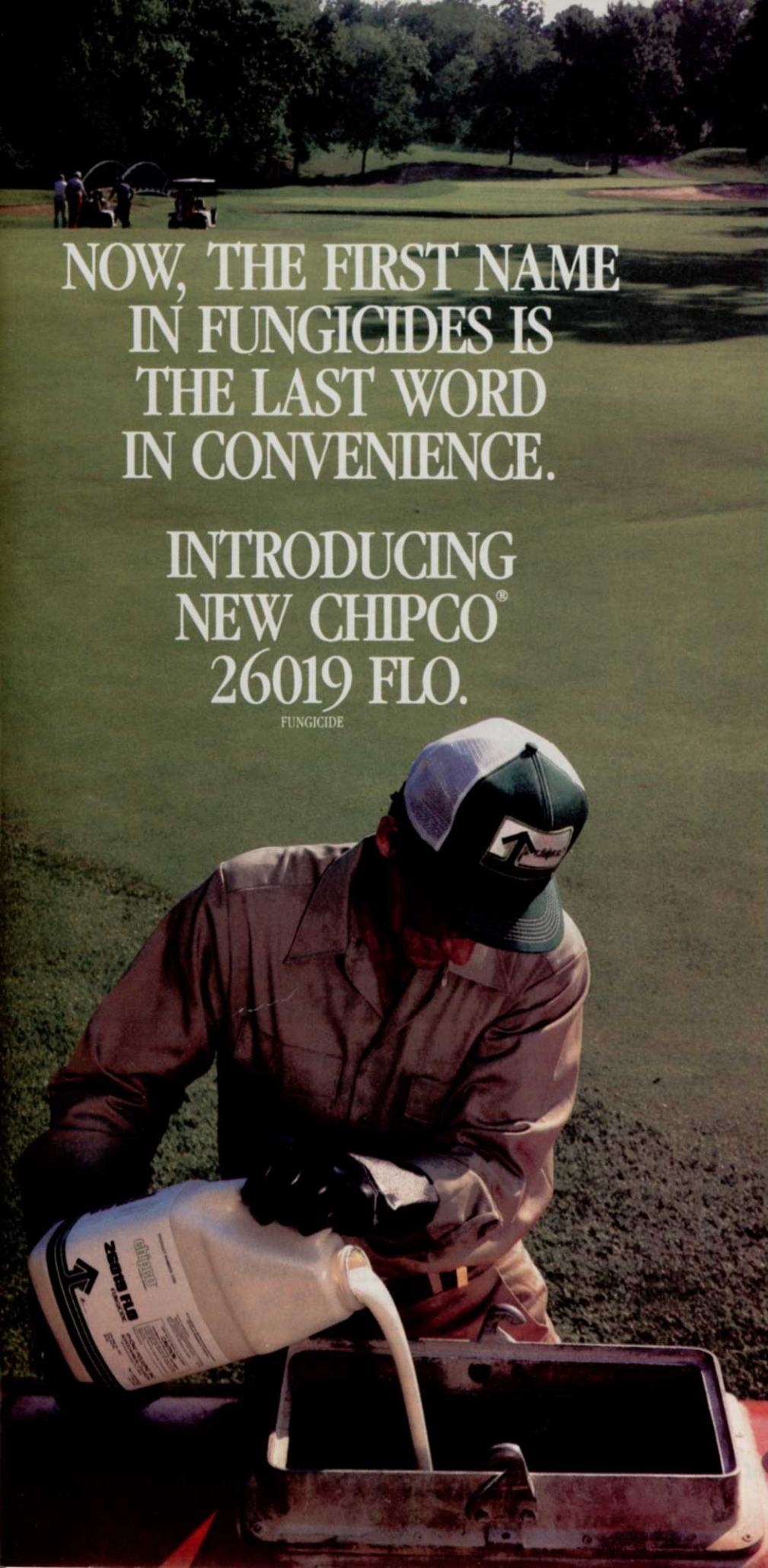
POST OFFICE BOX 6049  
DULUTH, MINNESOTA 55806-9749

NO POSTAGE  
NECESSARY  
IF MAILED  
IN THE  
UNITED STATES



**GET  
MORE  
FACTS**





NOW, THE FIRST NAME  
IN FUNGICIDES IS  
THE LAST WORD  
IN CONVENIENCE.

INTRODUCING  
NEW CHIPCO®  
26019 FLO.

FUNGICIDE

---

The easy way to stop major  
turf diseases for up to  
four full weeks.

---

Thousands of golf course superintendents have discovered one important fact. You just can't beat Chipco 26019 fungicide for controlling turf diseases.

And now you can get all the advantages of Chipco 26019 wettable powder in a convenient flowable formulation. New Chipco 26019 FLO.

Like the wettable powder, new Chipco 26019 FLO offers unsurpassed protection against major turf diseases, including Helminthosporium Leaf Spot and Melting Out, Dollar Spot, Brown Patch, Fusarium Blight, Red Thread, Fusarium Patch, plus Gray and Pink Snow Molds.

Chipco 26019 FLO also delivers the same long-lasting residual control. In fact, both Chipco 26019 formulations protect your turf for up to 28 days.

With Chipco 26019, you also get the added benefits of convenience, no phytotoxicity, pesticide compatibility, low toxicity and no corrosiveness.

Wettable Powder or new FLO, it's easy to see why Chipco 26019 is the Number 1 name in turf disease control.

Rhone-Poulenc Inc., CHIPCO  
Department, P.O. Box 125,  
Monmouth Junction, NJ 08852.



CHIPCO®  
26019

FUNGICIDE

Please read label carefully and use only as directed. CHIPCO® is a registered trademark of Rhone-Poulenc Inc.

Circle No. 138 on Reader Inquiry Card



# Even when they're all dressed up, there's still nowhere they can't mow.



With a John Deere hydrostatic tractor you don't have to take off attachments to take on other jobs.

That's because our compact diesels give you separate controls for separate functions.

For instance, a flip of a lever runs either PTO (rear or mid) independently. So

*Independent control lets you engage mid or rear PTO action at the flip of a lever. For convenience, either 540-rpm rear or 2100-rpm mid PTO can be engaged on the go.*



you can go from breaking ground with a tiller to maintaining turf with a center-mounted mower.

A mid-mount rockshaft control (optional) lets you lower the mower without raising problems with a 3-point hitch tool.

And if you're going from mowing to loading, our frame-built design draws the deck up and out of the way. Giving you up to 8-inches of clearance. So you can load up without hanging up.

Add to these conveniences a simple system of pins and brackets that makes changing attachments as easy as changing your mind. A choice of three diesel powered models to choose from—16, 20 and 24 horsepower. Plus a full range of work-saving







attachments, to keep your tractor dressed for success in any application.

*Up to 8 inches of under deck clearance allows you to do loader work with mower in place.*



Ask your dealer for all the facts on the John Deere hydrostatic compacts. Find out how their lack of dedicated performance is one of their strongest features.

*Optional mid-mount rockshaft control lets you raise and lower mower deck without disturbing 3-point hitch mounted tools.*



Nothing Runs Like a Deere®



1837-1987

150

Circle No. 110 on Reader Inquiry Card



# SHORT CUTS

**DIFFERENT GROWING...**Four companies from the green industry made it into *Inc. magazine's* recently-published 1985 list of the 500 fastest growing private companies in America. Barefoot Grass Lawn Service, Worthington, Ohio, placed 224th. Suburban Landscape Associates, Davenport, Iowa, entered at 312th place. Ford's Chemical and Service, Pasadena, Tex., placed 447th, while the golf course construction firm Landscapes Unlimited, Lincoln, Neb., placed 473rd. The magazine bases its selection on a company's growth percentage over five years, with a sales ranging from no less than \$100,000 the first year and no more than \$25 million the last year. In addition, each company must be independent and privately owned.

**COMMEMORATIVE COLORS...**As part of the bicentennial celebration of the September 17, 1787 signing of the U.S. Constitution, Bicentennial Chairman Warren Burger is encouraging communities to plant "Constitution Gardens." They are intended to be a lasting tribute to the freedom the Constitution has brought the country.

Bedding Plants, Inc. is offering a free brochure to help design and plan the garden. The organization is encouraging garden planters to use red, white and blue flowers. The brochure lists 10 or more varieties of flowers of each color, as well as tips on planting. For a copy of the brochure, send a self-addressed, stamped business-sized envelope to Bicentennial, Bedding Plants, Inc., 210 Cartwright Blvd., Massapequa Park, NY 11762.

**MAKING A GRADE...**A new 16-page, four-color bulletin titled "Athletic Field Construction and Maintenance" is being made available to the green industry by the University of Minnesota Agricultural Extension Service. The booklet was written by D. H. Taylor, G.R. Blake and D.B. White. For copies, send \$1 to: Distribution Center, Extension Service, Coffey Hall, University of Minnesota, St. Paul, MN 55108.

**PULLING OUT THE RUG...**Howie Newman, a Boston-area sports writer, wants to get rid of artificial turf. He's started a nation-wide campaign called "Pull Out The Rug," to get support for doing away with synthetic surfaces. He's even distributed the song "Astroturf" to radio and television stations upon request. To support his efforts, "Pull Out The Rug" kits (bumper sticker and newsletter) are available by sending \$2.50 (three kits for \$6) to Howie Newman, 20 Hartshorn St., Malden, MA 02148 or call (617) 397-0384.

**SHOP-AT-HOME?...**A growing trend in the green industry is shop-at-home services being offered by some distributors. One New York company, Landscapers Supply, sells power equipment, engines, parts and accessories by phone. For more information, see the "Miscellaneous" heading in this month's classified section.

## SCHERY from page 8

clopeida Britannica," "Encyclopedia Americana" and the "World Book."

During and after his employment as botanist for the Monsanto Co. and O.M. Scotts & Sons, he was a member of many professional organizations.

Schery spent five years in retirement from The Lawn Institute before dying of cancer at age 70.

## CHEMICALS

### Spraying moratorium does harm, not good

A month-long moratorium on spraying for aquatic weeds on Lake Okeechobee in south Florida imposed last August did more harm than good, says Kenneth R. Tefertiller, Ph.D., of the Institute of Food and Agricultural Sciences.

The moratorium was not based on known research data, he said at a recent Florida House Appropriations Subcommittee hearing. Tefertiller, vice president of agricultural affairs at the University of Florida, was speaking on behalf of IFAS during budget hearings.

The moratorium was imposed over concerns about blue-green algae blooms on the lake caused by too much phosphorus. Spraying had killed hyacinths, which, when dead, sink and release phosphorus back into the water.

Halting the spraying did not reduce the levels, Tefertiller said, but instead allowed hyacinth growth the chance to get a head start. He added that more chemicals would be needed to control the hyacinth, at an added cost of \$100,000.

A grant from the South Florida Water Management District, which manages spray programs on the lake, to the IFAS Center for Aquatic Weeds will be used to write a white paper on "lessons learned from the moratorium," Tefertiller said.

## ASSOCIATIONS

### Video shows benefits, safety of lawn care

A nine-minute video about the safety and benefits of professional lawn care service has been produced for the Professional Lawn Care Association of America by the Ciba-Geigy Corp.

"Common Sense Answers to Turf Care Questions" is intended for use by LCOs to be presented at local community group meetings of regulators, chambers of commerce and other such groups.

The video features PLCAA's Jim Brooks and Gary Clayton, Virginia Tech professor John Hall, III and commercial real estate expert John McCracken of McCracken and Associates, Inc.





## The Toro 570C Fixed Spray Series. Enhanced Performance Through Advanced Design.

The "C" in 570C stands for Conilip,<sup>™</sup> Toro's exclusive new seal and cap configuration. It improves sealing and reduces flush action for outstanding performance in virtually any soil condition. While other fixed spray sprinkler seals tend to trap dirt and debris which can cause stick-up problems, the Conilip seal enables the 570C pop-up sprinklers to operate smoothly every time.

And because our Conilip seal is made of UV-resistant black rubber, it's less susceptible to drying and cracking than seals made of plastic.

Available in 3", 4", 6" and 12" pop-up models, the complete line of 570C series pop-up sprinklers can be fitted with your choice of 75 interchangeable nozzles to give you greater flexibility in irrigation system design.

Many other features of the 570C series make it the outstanding choice for all your fixed



*Toro's Conilip seal and cap configuration improves sealing and reduces flush action.*

spray needs. Cicolac<sup>‡</sup> construction offers strength, durability and corrosion resistance. A stainless steel retraction spring provides positive pop-down. And a screw on cap allows easy access for service from the top.

Also, Toro offers the widest range of fixed spray nozzles and accessories on the market today. The innovative line of Pressure Compensating Spray Nozzles regulate water flow, thereby

eliminating fogging and water waste that can occur with fixed spray sprinkler heads. New Pressure Compensating Flood and Stream Bubbler Nozzles combine the advantages of pressure compensation with the ability to install bubbler nozzles on a pop-up sprinkler.

Other accessories include risers, shrub adapters, micro spray adapters, extenders and funny pipe fittings. Toro's check valves minimize low head drainage and puddling after the sprinkler system is turned off.

All in all, Toro's new 570C sprinklers and accessories provide the ultimate in versatility, reliability and efficiency. Try the 570C Series on your next job—for enhanced performance through advanced design.

If you'd like more information on the 570C Series, please contact your local Toro dealer, or Toro directly at 5825 Jasmine St., Riverside, CA 92504. (714) 688-9221.

<sup>‡</sup>Cicolac is a registered trademark of Borg-Warner



*Excellence in Irrigation<sup>®</sup>*







Covers a lot of ground for less.





Its low cost looks good on paper.  
And its long-lasting turf disease  
control looks good on your fair-  
ways. BAYLETON turf fungicide.  
For the long haul.  
Mobay Corporation, Specialty  
Products Group, Box 4913,  
Kansas City, Mo. 64120



BAYLETON is a Reg. TM of Bayer AG, Leverkusen. 6-2256

**Bayleton.**

Circle No. 127 on Reader Inquiry Card



# GOING WILD

by Heide Aungst, managing editor



The Vintage Club uses wildflowers in "desert scenes" bordering the golf course.

**E**ach spring an earthly rainbow of wildflowers sweeps across fields renewed with life. Walking into a blooming meadow compares only with opening a new 64-crayon Crayola box as a child.

But while those mystical hues have spell-bound nature-lovers for centuries, they've only recently sent seed companies in search of the pot of gold. Wildflower mixes have become popular, and profitable, in the last few years.

Superintendents use the mixes in roughs; home-owners cultivate wildflower gardens; and highway departments scatter the seed on low-maintained rights-of ways. But despite their popularity, naturalists argue that mixes don't offer a crayon-box color solution in low-maintenance areas, but open a Pandora's box of problems.

"There is a potential for the local gene pool to become polluted," says

Brian Parsons, naturalist at the Holden Arboretum in Cleveland, Ohio. "That's one argument for each state to develop its own nurseries as far as roadsides are concerned."

## Natives vs. mixes

Native wildflower varieties demand less water, Parsons explains. "Using native wildflowers in the landscape conserves energy and fuel by reducing mowing," he says. "Many mixes use European species which aren't regionally adapted. It's a quick show, but color won't persist in the landscape after the first couple of years."

"Very few people know which species grow in what areas," says Crystal Rose Fricker, plant breeder with Pure Seed Testing, Inc. "We're doing research on natives. With grasses you know what's a cool-season or warm-season grass. But there are many species of wildflowers widely adapted to different areas. I think we're just

learning."

Most seed companies market mixes to regional areas. Lofts and Jacklin share the name and advertising for their Pinto wildflower mix, but Jacklin markets only a Northern mix. Loft's research agronomist Marie Pompei says the company has five different mixes: Northern, Southern, Canadian, Tropical and Texarkana.

Applewood Seed Co. in Arvada, Col. has nine regional mixes. Pickseed West, in Tangent, Ore., custom mixes seed depending on what distributors want, says Jerry Pepin, Ph.D. Most seed companies are willing to custom-mix large orders.

Despite the regionalization of mixes, the real controversy persists over what the mixes contain. The myth is that a mix will bloom full color year after year. But whether that will happen depends on how many annuals and perennials are in the mix. Both Parsons and Fricker agree that



Wildflower mixes are a popular low-maintenance alternative on rights-of-ways, golf courses and home gardens. But before you go wild with color, seed companies say it's important to learn about the mixes.

it's a matter of public awareness.

"If a mix has 25 species, it's not realistic to think that all 25 species will bloom," says Annie Paulson, resource botanist at the National Wildflower Research Center in Austin, Tex.

#### Annuals vs. perennials

"It depends on what the customer wants," Fricker says. "With an all-annual mix, you'll get color the first season, but it will die out. With an all-perennial mix, you won't have annuals dying out, but you won't get color until after the first winter."

Fricker explains that perennial wildflower seeds must *vernalize*, which means the seed must go through short day length and cold temperatures. "It's the plant's way of saying, 'I know if I flower too soon, the seed won't make it through the winter.'"

A solid wildflower mix will include annuals, perennials, biennials and tender perennials, which are annuals that can survive mild winters. "It's advisable to see a species list and it's possible to ask for a percentage breakdown," Paulson says.

Loft's and Jacklin's Pinto mix is primarily composed of annuals. Tee-2-Green's Bloomers and most of Applewood's mixes are about 50-50. Pickseed West's Flowers 'N' Flowers is about 60 percent annuals, 40 percent perennials.

"Using more annuals holds the cost down and gives the customer something the first year," Pepin says. He adds that some annuals will re-seed if the wildflower area is mowed in the fall.

#### A compromise

Illinois has reached a compromise between mixes and native species. The state is one of the few to use native prairie grasses and wildflowers along its highways. It also is home to the Association for Use of Native Vegetation in Landscaping (ANVIL).

LaFayette Home Nurseries is one of several Chicago-area nurseries which markets both mixes and native species. Sales manager Roger Lemke, who is also on ANVIL's board of directors, says mixes serve a purpose despite their problems.

"We use those mixes and include them with our mixes," Lemke says. "The annuals give color until the native perennials start coming on."

*continued on page 20*



Weeds can be a problem in wildflower mixes.

## A BLOOMIN' SUCCESS

Green. Golf courses are just too green. But the solution is merely a rough away: wildflowers.

Wildflowers add the needed touch of color and touch of class to any golf course. But superintendents are using them in different ways.

#### One perspective

The Vintage Club in Indian Wells, Calif. has used wildflowers on the golf course's edges since it was built in 1979. Of the 360 acres on the 36-hole course, about 15 are wildflowers.

Don Pakkala, director of turfgrass



Members at Onwentsia Club enjoy the native prairie and wildflowers in the roughs.

management, says he usually buys individual seed and mixes it on site. Last year, however, he used Lesco's Southwest mix.

The mix includes both annuals and perennials. But he finds it necessary to re-seed annually. "Some years the pe-

*continued on page 20*



**Low maintenance?**

Another myth concerning wildflower mixes is that once planted, they need no further maintenance. "How wildflowers are maintained does make a difference," Fricker says. "Some weedy species can take over."

Because of this, Fricker is working closely with chemicals companies on herbicides which kill weeds, not wildflowers. For the past three years, Pure Seed has been looking at about 50 different chemicals and hundreds of wildflower species. "We also have 15 trials going on throughout the U.S.," she says. "We want to see which species will be hurt and which will survive."

Of some 25,000 species of wildflowers, only a fraction have been seriously studied.

Fricker has researched wildflowers for five years. Pure Seed Testing has 250 acres of more than 300 varieties.

The National Wildflower Research Center has been researching wildflowers since 1982. Lady Bird Johnson founded the non-profit center for the purpose of promoting wildflowers in public and private landscape design.

---

*Of some 25,000 species of wildflowers, only a fraction have been seriously studied.*

---

Current research includes looking at various seeding techniques, such as a modified drill seeder, and putting together a seedling identification booklet. The center also serves as a clearing house for information, such as fact sheets done by state. Last year, more than 24,000 inquiries poured into the center.

"We're often the first place someone will turn to," says Paulson. The center won't endorse mixes, but will give recommendations concerning what to look for in a mix.

**Popularity blossoms**

Popularity of wildflowers has more than blossomed over the past five years. "We've gone from selling a few *continued on page 22*"



**Jerry Pepin: Sales are booming**



**Marie Pompei: People want to be different**



**Onwentsia superintendent Paul Boizelle says using wildflowers in the rough takes planning.**

to thrive because of the maintenance of the rough area.

"We started with five acres," Boizelle explains. "In the fall, we mowed the area using a large woods-rotary mower. Then we hydroseeded a wildflower mix on top of the stubble. We knew the seed had to find its way into the soil."

In the spring of the third year, Boizelle went in and burned the area. Controlled burning shocks the plant to provide renewed growth. It also eliminated vegetative competition of

*continued on page 22*

**A BLOOMIN' SUCCESS** from page 19

rennials are weaker and we re-seed," Pakkala says.

Pakkala uses the wildflowers in beds he calls "desert scenes," bordering the golf course. The flowers bloom during the winter, but the hot dry Palm Springs summers make it difficult to keep them alive.

The beds all contain manual irrigation heads for water. "In the spring we slowly cut back the water so as to not shock the plant," Pakkala explains. "We have other desert plants, such as cacti, in the same beds, and they can't handle the water."

Weeds are another constant problem. "Our members and guests are purists. Sometimes we get a bed so weed-infested that we have to eradicate the whole bed," he says. "Weeds germinate with the wildflower seed. It's quite a job keeping them out."

If weeds aren't taken out, clover and thistle can shade the flowers, stunting their growth. He uses the herbicide Fusilade which gets rid of grassy weeds without damaging the flowers, but his crew must hand-weed other types.

"It's a tough situation," he says. "I

need to do more research and find out what types of wildflowers will grow naturally here."

Despite the problems, Pakkala whole-heartedly recommends wildflowers to other superintendents. "By all means do it," he says. "They are low-maintenance in other areas of the country. In non-use areas, you don't have to mow as often."

**A different perspective**

The Midwest, unlike the Southwest, is known for its native prairie and wildflower species. Paul Boizelle, superintendent at the Onwentsia Club in Lake Forest, Ill. has used prairie and wildflowers in his roughs for five years.

Boizelle has experimented with three different techniques to plant the wildflowers. About 13 acres of the 200-acre course are planted in prairie.

The first year Boizelle let the rough grow wild. "Lo and behold we had wildflowers volunteer which had been there since the course was built in 1894," Boizelle says. "We were so excited about it."

The species had not had a chance



That's Treflan®. It controls annual grasses and broadleaf weeds so effectively, it could easily pass as an "expensive" preemergence herbicide.

But don't let the expensive look fool you. The fact is, Treflan is the lowest-priced herbicide there is for established ornamentals. At less than \$1 per 1,000 square feet, nothing beats Treflan on price or weed control. Nothing.

Treflan is labeled for use on more than 175

different varieties of ornamentals. Just spread it on evenly and water or rake it in. It's that easy to get expensive-looking, full-season weed control. Treflan is also available in quarts and gallons.

Call your Elanco distributor today. Or write:

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

Treflan®—(trifluralin, Elanco Products Company)



# Weed control that only looks expensive.

Circle No. 114 on Reader Inquiry Card





## WILDFLOWERS from page 20

hundred pounds to into the tons," Pepin says.

"I think it's a growing self-awareness of our environment," says Gene Milstein, president of Applewood. "People are aware that there's a limited amount of wild country left. They want to tie into that and have a piece of it in their backyard."

"It has a nostalgic theme for the homeowner," Pompei says. "Instead of being like everyone else, they can be different."

One of the most popular uses of wildflowers is for highways. Paulson recommends planting wildflowers at visible exchanges, rather than in long strips where they might be distracting to drivers.

Golf course superintendents use wildflowers in the rough or in gardens near the clubhouse. Pompei says surrounding parking lots is a new popular use for wildflowers.

Pepin says his mixes are most popular among landscape contractors. Milstein reports his all-perennial wildflower sod is most popular with home owners. "We've had an overwhelming response from consumers and the media," Milstein says. "It's totally amazed us."

### Wildflower innovations

Applewood has been a leader in innovative wildflower use. Besides being the only company to market wildflower sod, they have a Super Short mixture of annuals and perennials which won't grow more than eight inches.

Tee-2-Green has a unique Designer Kit, which keeps seed varieties separate so the landscaper can plant flowers in rows according to height or color.

Pickseed West offers a Flowers 'N' Grass mix which includes 15 percent wildflowers and 85 percent Azay sheep fescue. The mix can be used for soil stabilization and erosion control on slopes.

Likewise, the Pinto mix is marketed in a Meadow variety for northern states which includes four pounds wild flowers to 26 pounds sheep fescue.

Before investing in a wildflower mix, the experts recommend consulting someone familiar with various annual and perennial species. Also, contact someone in your area who has successfully used wildflowers.

It may take some effort, but the explosion of color will be worth it. **LM**

## BLOOMIN' SUCCESS from page 20

herbaceous plants which compete and shade the flowers. He now burns the area at least every other year.

Because of the success of the five acres, Boizelle decided to put wildflowers on eight more acres. This time he followed basically the same steps, mowing the area to stubble, but rather than hydroseeding, he used a special wildflower seed drill. "Wildflower seed comes in so many shapes and sizes that it needs a special drill," Boizelle explains. "It's really a breakthrough."

This year, he's trying a third method on six additional acres. He has gone in with Roundup to kill all existing vegetation. Then he plows and discs the area to prepare the seedbed, then drills in the seed.

"I think all three methods are acceptable," Boizelle says. "I have reason to believe the third way is going to be the best way."

A fourth method, which Boizelle

---

*The species had not had a chance to thrive because of the maintenance of the rough area.*

---

has not used, is to purchase wildflower plants, rather than seed.

The roughs aren't completely flowers. Some parts of the prairie are non-flowering, like Big and Little Blue Stem. He has moved some of those native plants into roughs where they haven't grown in naturally.

But, he warns, even in the Midwest where wildflowers prosper, it takes some work. "Don't expect a panacea of color," he says. "It could take years to achieve the ultimate goal. You don't wave a magic wand, sprinkle seed and say presto. You have to plan ahead and budget for the project each year."

His members love the new roughs. "They're delighted," he says. "One reason we've introduced the wildflowers is to replace weed growth with beauty."

That beauty is no wonder wildflowers are such a popular way to break up the green monotony of golf courses.

—Heide Aungst

the professional's  
partner™

**The  
Andersons**

### EAST

**ALLEGHENY LAWN PRODUCTS**  
Wexford, PA • (412) 935-2290

**BYRUM SEED COMPANY**  
Charlotte, NC • (704) 527-0481

**CHARLES C. HART SEED CO.**  
Wethersfield, CT • (203) 529-2537

**FARM & GOLF COURSE SUPPLY CO., INC.**  
Philadelphia, PA • (215) 483-5000

**FISHER & SON COMPANY, INC.**  
Malvern, PA • (215) 644-3300

**HISTAND SUPPLY**  
Wycombe, PA • (215) 598-3102

**J. AND L. ADIKES, INC.**  
Jamaica, NY • (718) 739-4400

**NORTHAMPTON COUNTY SEED CO.**  
Bath, PA • (215) 837-6311

**ROCKLAND CHEMICAL CO., INC.**  
W. Caldwell, NJ • (201) 575-1322

**SEACOAST LABORATORIES**  
Dayton, NJ • (201) 821-4769

**TURF SPECIALTY, INC.**  
Hooksett, NH • (603) 485-7866

**WILSON FEED AND SEED**  
Richmond, VA • (804) 232-6791

### MID-WEST

**BUNTON SEED COMPANY**  
Louisville, KY • (502) 583-9040

**C.O. LOWE SALES**  
Columbus, OH • (614) 771-0486

**LEATHERMANS, INC.**  
Canton, OH • (216) 452-8866  
1-800-362-0487 (OH only)  
1-800-542-7333 (outside Ohio)\*

**PROFESSIONAL TURF SPECIALTIES**  
Champaign, IL • (217) 352-0591

**TENNESSEE OUTDOOR POWER**  
LaVergne, TN • (615) 793-6052  
1-800-854-4851 (TN only)

**THORNTON-WILSON, INC.**  
Maineville, OH • (513) 683-2141

**TOLEDO TURF EQUIPMENT**  
Toledo, OH • (419) 473-2503

**TURF AND TREE SUPPLIES**  
Rockton, IL • (815) 624-7578

**TURF PRODUCTS LTD.**  
W. Chicago, IL • (312) 668-5537

**TURF SPECIALTIES, INC.**  
Fort Wayne, IN • (219) 484-6338  
1-800-552-1989 (IN only)

**TURF SPECIALTIES, INC.**  
Zionsville, IN • (317) 875-7955  
1-800-552-1989 (IN only)

**TURFGRASS, INC.**  
South Lyon, MI • (313) 437-1427  
1-800-521-8873 (MI only)

### WEST

**BIG BEAR EQUIPMENT, INC.**  
Omaha, NE • (402) 331-0200  
1-800-228-9761 (outside NE)

**BIG BEAR TURF EQUIPMENT CO., INC.**  
Eldridge, IA • (319) 285-4440

**COLORADO GARDEN SUPPLY**  
Denver, CO • (303) 331-0114

**DAKOTA TURF SUPPLY, INC.**  
Sioux Falls, SD • (605) 336-1873

**OUTDOOR EQUIPMENT CO.**  
Maryland Heights, MO • (314) 569-3232

**R. L. GOULD**  
St. Paul, MN • (612) 484-8411

**ROBISON'S LAWN AND GOLF, INC.**  
Wichita, KS • (316) 942-2224

**ROBISON'S LAWN AND GOLF, INC.**  
Grandview, MO • (816) 765-3333

**TURF MANAGEMENT SUPPLY**  
Sun Prairie, WI • (608) 837-5598

**WISCONSIN TURF EQUIPMENT CORP.**  
Janesville, WI • (608) 752-8766

**WISCONSIN TURF EQUIPMENT CORP.**  
New Berlin, WI • (414) 544-6421

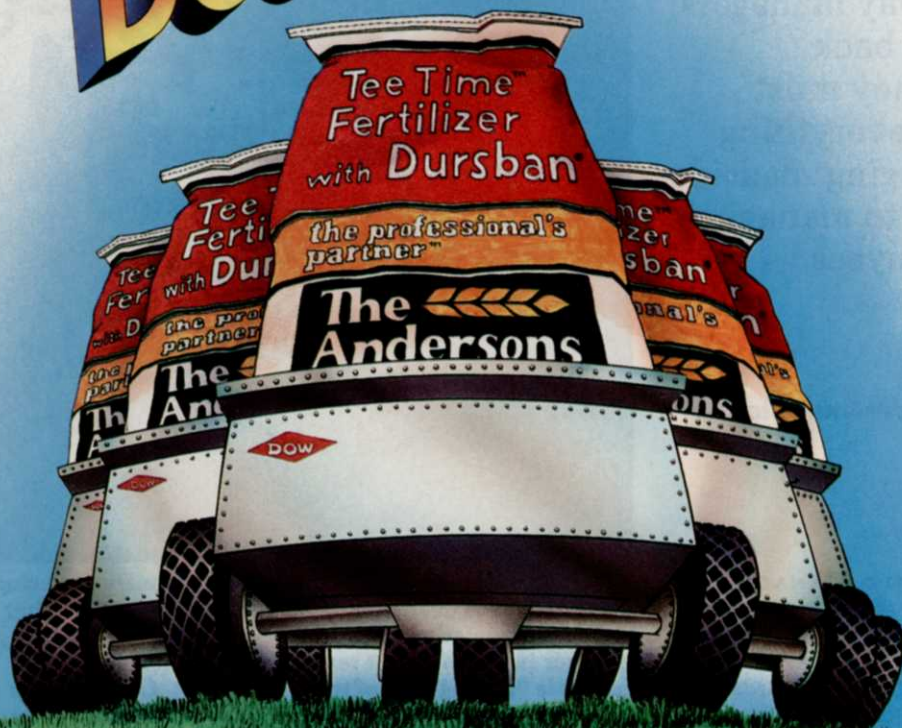
\* Outside Ohio only applies to these states: Pennsylvania, New York, West Virginia, Kentucky, Indiana, Michigan.



# TEE TIME™ with DURSBAN®

The Double Agent. With the two-tiered strength you need to protect our nation's lawns.

## the DOUBLE-AGENT



Simply fertilizing isn't enough to protect your customer's turf from pesky insects. That takes a fertilizer/insecticide combination like The Double Agent: Tee Time™ and Dursban® from The Andersons.

The Double Agent lets you take on both missions at once. Saving time, labor and equipment.

And the Double Agent gives you the flexibility you're looking for, no matter how tough your insect adversaries. The Double Agent's arsenal includes:

Tee Time 30-3-5 with Dursban. Tee Time 38-0-0 and 18-3-5 with Dursban. Tee Time triple action 20-4-10 with Dursban and Balan® for feeding,

weeding and insect control. And Tee Time Dursban 2.5G. You can even specify your own custom mix Double Agent with Dursban.

Each is an expert bugbuster, field proven to handle even the nastiest turf assignments. At remarkably affordable prices.

**The Double Agent, TEE TIME with DURSBAN. Saving the world from the evil network of yard bugs.**

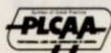
**Find out more. Contact your TEE TIME distributor today. Or call The Andersons Product Information Center toll-free. Call 1-800-225-ANDY.**

the professional's  
partner

The Andersons

Lawn Fertilizer Division  
P.O. Box 119  
Maumee, Ohio 43537

**1-800-225-ANDY**



© DURSBAN, registered trademark of Dow Chemical.

© 1987, The Andersons

Circle No. 103 on Reader Inquiry Card



# ON THE R.O.W. AGAIN

With warmer weather, rights-of-way managers are getting back outside. They must cope with everything from managing roadside vegetation to managing their employees.

by Jeff Sobul, assistant editor



**A** LANDSCAPE MANAGEMENT survey of roadside and rights-of-way vegetation managers reveals that, on the average, respondents manage 3,492 miles of roadside with an average of 73 full-time employees. And nearly all of the respondents will be mowing all or parts of those roadside turf areas to some extent during the year. The lucky ones will mow just once or twice, but many will be mowing up to once a week.

About 83 percent of the respondents will control weeds in some way. About 74 percent are also involved in tree maintenance. Two-thirds of the respondents will be seeding or sodding this year; 60 percent will be doing some form of erosion control or reclamation. Not surprisingly, only 31 percent will be irrigating their roadsides this year.

## If it's not one thing...

...It's another. Roadside vegetation managers will be dealing with a myriad of problems, as they do every year. (One poor soul dealing with 42,000 miles of roadsides with just eight full-timers has problems "too numerous to mention," and he is trying "everything" to deal with them.)

The most common problem facing the managers is dealing with weeds and other vegetation. One such manager in the Midwest responds that he is "having a lot of trouble controlling Canadian thistle and leafy spurge." To solve it, he will probably "struggle, and after three plays, punt."

A regional landscape architect in the Northeast has a different problem: every year since 1957, his state has issued a herbicide manual, but applicators are still making decisions contrary to overall planning.

Yet another landscape supervisor doesn't have enough time for him and his four-man staff to spray his 1,500 miles of roadside. He is forced to spray early each season and work different hours to avoid wind problems and traffic in some areas.

Other problems arise from having improperly or untrained applicators. A number of respondents note that a training program is necessary.

## PGRs spreading

One trend noticeable from this survey is related in one way or another to mowing. Sixty percent of survey participants from across the

country are using plant growth regulators either on an experimental basis or regularly, some as often as once a month.

One roadside manager in the Northwest is stepping up his application frequency in an attempt to eliminate mowing in two of his districts. While some are using PGRs to reduce mowing frequency, others are using it in areas inaccessible to mowers.

Many of the roadside managers see this increased use as a trend which will continue for a number of years at least. Another trend related to this, many participants note, is a need for better spray equipment. Respondents expect to see better calibrated equipment soon, as well as more effective, and more selective chemicals to put in them.

Unfortunately, one unlucky respondent, a public pesticide operator in the Northwest, could see no use for the new equipment because, he complains, "our county commissioners have just banned practically all spraying!"

For him, and the other roadside managers waiting for improvements, but who need help now, the following profiles may be of some assistance. **LM**



# "OUR GOLF COURSE HAS TWO PROS. I'M ONE OF THEM. THE OTHER IS OUR WOODS RM 90."

Mr. Tim O'Leary  
Member—Wilson Sporting Goods  
National Advisory Staff  
Part owner, general manager, and pro  
Lost Nations Golf Club  
Dixon, Illinois



After 15 years at the same golf complex, Mr. O'Leary has come to the conclusion that their two year old Woods RM 90 is, "far superior to any type of mower...including reels. It mows weeds and grass under wet or dry conditions, and the maintenance savings alone paid for the mower in the first year."

If you're in charge of mowing a golf course, park, school, cemetery or industrial site, it would pay you to get to know the Woods RM 90 better. It's 7-1/2 ft. cutting swath cuts the big jobs down to size by mowing up to 4-1/2 acres per hour.

For complete information on the RM 90, contact Woods, Division of Hesston, Dept. PM, Oregon, Illinois 61061.

**40**  
years of  
QUALITY  
1947-1987



Division of Hesston Corporation  
Oregon, Illinois 61061

Circle No. 258 on Reader Service Card





# When you use Poast® herbicide, the grasses are always greener on the other side.

If you want to be the envy of the ornamental world, consider Poast herbicide.

Poast delivers consistent, gentle control of your toughest grasses. Like bermudagrass and crabgrass, quackgrass and foxtails. And in your most valuable greenery. Like flowers, shrubs, trees and ground covers.

With Poast, you don't have to bother with directed or shielded sprays. Because Poast is proven

gentle to ornamentals. You can apply Poast over-the-top at all stages of ornamental growth. So you don't have to worry about soil residue or leaching. And you

don't need soil incorporation or moisture to activate either.

Best of all, Poast saves you all the time, labor and expense of handhoeing.

So this year, let Poast take care of the grasses. So you can take care of the rest.

From BASF. Always follow label directions.

**BASF Corporation**  
Chemicals Division





# MAKING THE GRADE

A state-approved program was developed by the Virginia highway department to train potential chemical applicators for the state tests.

by Jeff Sobul, assistant editor

**T**wo years ago, the Virginia Department of Transportation decided it needed better trained chemical applicators to work along its roadways. The idea was to get safer chemical applications with a better public image.

Therefore, the highway department petitioned for and got approval to administer its own applicator training program. Criteria for the program, which involves training for the state department of agriculture core manual and spray certification tests in Category 6 (rights-of-way) and Category 3 (ornamentals and turf), are actually a bit more stringent than the state's.

"We had a keen interest in safety and preserving the right to use herbicides," says Boyd Cassell,

landscape coordinator for the state. "In the mid-'70s, we realized the sensitivity of using the pesticides on rights-of-ways to special interest groups, adjacent landowners and what have you. We had as much concern for the safety of our employees and water, too.

"So one of the first things we did was to make it our policy: one, we won't spray in front of someone's property if they don't want us to; and secondly, we think the secret to safe application and not getting bad publicity is to properly train personnel. In that regard, all of our applicators have to be certified as commercial applicators, meet regulations, and go beyond regulations."

As a result of the training  
*continued on page 29*

## Virginia is for flower lovers

Fourteen years ago, the Virginia Department of Transportation participated in a highway beautification program called "Operation Wildflower," created by the Federal Highway Administration with the support of the U.S. Department of Transportation and the National Council of State Garden Clubs.

The idea was to plant thousands of wildflowers along the nation's highways in hopes of making them a more pleasant place to drive. Unfortunately, in many states the program did not take root and grow.

In Virginia, however, the program has "blossomed."

### Root establishment

The program developed as a joint operation between the state highway department and the Virginia Federation of Garden Clubs.

Things started with the garden clubs buying a few hundred pounds of seed, helping select species and participating in

the first plantings at the sites, which were spread around the state's nine highway districts.

The sites, 24 at first, were prepared by eliminating competition either by fumigation or applications of Roundup, and heavy disking or cultivating to prepare the ground for planting.

Today, at more than 60 sites, wildflowers are coming in naturally. "Considering what we're planting and what's coming in naturally, we've got some nice scenes of wildflowers," says Boyd Cassell, the highway department's landscape coordinator. "We have directives out not to mow these (planted) areas where they're coming in naturally."

"What we're planning to do," says landscape specialist Philip Baker, "is create a master map of the state showing the primary routes on the interstates with areas where we have planted certain species."

This, adds Cassell, "maybe will be an additional tourist attraction."  
*continued on page 29*



**Red perennial sweatpea and yellow coreopsis line parts of Virginia's Interstate-81 north of Salem.**





## FOR THIS YOU NEED A MOWER WITH MORE THAN JUST YOUR AVERAGE GARDEN VARIETY ENGINE.

For a job like this you need an engine you can depend on. You need a Kohler Magnum engine.

All Magnum engines feature electronic ignition for fast, sure starts. Twin cylinder models include full pressure oil lubrication, with automotive-type oil filters. Additional features include dual element air cleaning, PosiLock™ connecting rod cap, optional Oil Sentry™ low oil sensing and a two year warranty that covers commercial use.



*Magnum engines range from 8-20 H.P. in horizontal and vertical shaft designs.*

We designed Magnum engines to require fewer service parts and less routine maintenance, so your equipment will spend less time in the shop and more time on the turf.

To find out how you can benefit by having Magnum engines on your equipment contact: Kohler Engine Division, Kohler Co., Kohler, WI 53044, 414-457-4441.

**KOHLER**  
engines

*Built for a hard day's work.*



### MAKING THE GRADE *from page 27*

program, which landscape specialist Philip Baker administers, the state has about 350 certified applicators in its nine districts. "The programs generally last from one to two days," Baker says. "We have recertification, and most of the time, certification for the first time.

"Basically what we do is set up a program which entails safe use of pesticides." Baker, who is a horticulturist, adds that the program addresses areas such as calibration and target vegetation. "We use a series of class discussions, lectures, videos and slide tapes," he explains.

Once a potential applicator passes the test on the core manual administered by the state, he is eligible to take tests in Categories 3 and 6. "We review the manuals and give them a (sample) test," Baker notes. "Then we can get an idea of what we're dealing with. If it requires additional training for those people to get them prepared for the actual test that is given by the state department of agriculture and pesticide regulators then we do so."

---

*'By employees having a better understanding of what they're using and the purpose that they're using it for, as far as complaints, we had virtually none.'*

---

—Philip Baker

"Before, we had to rely on universities and extension agents for training," Cassell adds. "We had to get our training for certification and recertification at the whim of someone else. This way, we can do our own planning and do it during the off season so when the season gets here, we're ready."

The training program has been set up so that it can be administered separately in the nine state districts, saving time and money in the process.

"We found that not only does the program help tremendously in passing the test, it also gives them a background and understanding of what they're dealing with," Cassell comments.

The program has more than just a positive effect on pesticide application. "We teach them good P.R. with the traveling public," Baker notes. "When (employees) are on the highway, they're highly visible. The public really scrutinizes what they do. By those employees having a good understanding of what they're using and the purpose that they're using it for, as far as complaints, we have had virtually none."

"It's not that we may not make some mistakes," Cassell notes. "But when we make one, if we've been doing an overall good job, it's not as likely to be overcriticized." **LM**

### VIRGINIA *from page 27*

traction. We think perhaps it will be an added enticement. Hopefully, we'll be in a position that if someone's interested in looking at Virginia wildflowers in the spring or summer or fall, we can tell them which route to take for a nice ride.

"We have most of the information in from our field offices. Now Phil's going to be mapping it out."

#### **Paying off**

Roadsides now blossom with coreopsis, black-eyed Susans and bachelor's button. The program has also branched into the planting of daffodil bulbs in beds at highway welcome centers and the 39 rest areas around the state.

The program has been so successful that the garden club has won The National Landscape

award for roadside beautification six years running.

"Each time they win that, they're awarded \$1,000 in prize money," Baker notes. "Then what they do is donate that money to us and we purchase bulbs. With that \$1,000 we can purchase about 3,000 daffodil bulbs."

In addition, Baker says, garden club members statewide donate bulbs from their own back yards. "This past year there were something like 20,000 or 30,000 bulbs (donated) in our various districts. What we do is take those and put them in dead areas on the roadside and also we will include them in the rest areas."

Baker estimates that between bought and donated, close to 100,000 bulbs have been planted under the beautifica-



**Philip Baker (left) and Boyd Cassell discuss ongoing improvements at one of Virginia's 39 highway rest areas.**

tion program.

Besides wildflower plantings, the state has been taking other measures to keep the state's 53,000 miles of roadsides looking good, and just as importantly, the public happy. **LM**





Photo by [unreadable] for [unreadable] magazine. Photo by [unreadable] for [unreadable] magazine.



# ARSENAL® TREATS EACH MEMBER OF THE ENVIRONMENT AS IF IT WERE THE LAST.

Too often in the past, inhabitants of the environment had to become endangered before they were protected. But we can all do our part so similar mistakes don't occur in the future. One way is by using a herbicide that doesn't harm the environment. ARSENAL® herbicide. Its advanced chemistry eliminates what you want it to. And nothing more.

## WHY ARSENAL IS EASY ON THE ENVIRONMENT.

Because of its unique mode of action, ARSENAL, when used as directed, has no harmful side effects on mammals, fish, bees, birds or earthworms. Because ARSENAL is non-volatile and doesn't move laterally through the soil, off-target vegetation is unaffected. ARSENAL is nonflammable. Its unique chemical activity causes a slow "brown-out" in foliage, so it poses little fire hazard. Unlike tank mixes, ARSENAL introduces only one biodegradable product into the environment. And it's applied only once during a season, resulting in a lower chemical burden and a reduction in "touch-up" treatments.

## CONTROLS MORE UNDESIRABLE VEGETATION.

ARSENAL has demonstrated control of a broad spectrum of weeds, vines and brush species. Tests in southern states showed that ARSENAL alone (at a rate of two quarts per acre) out-performed several tank mixes for annual and perennial weed control. Even more impressive, ARSENAL was most effective on difficult species like Johnsongrass, trumpet creeper, kudzu and red maple.

## ONE APPLICATION GIVES SEASON-LONG CONTROL.

ARSENAL gives you full-season control for up to eight months in temperate climates. It fits your spray schedule,

Always read and follow label directions carefully.

## TOUGH ON WEEDS. EASY ON THE ENVIRONMENT.

because it can be applied at any time during the growing season. ARSENAL controls not only existing vegetation, but also new weeds that germinate after application. So you get residual control for the rest of the season. On hard-to-kill vegetation, ARSENAL keeps working on the roots until complete control is achieved. In spray solution, ARSENAL is stable for several days. That means no waste due to decomposition, and no chance of under-dosing target vegetation.

ARSENAL offers broad-spectrum control, including these tough species:

Johnsongrass	Dallas grass
Trumpet creeper	Bindweed
Poison ivy	Canada thistle
Greenbriar	Foxtails
Redvine	Red maple
Kochia	Kudzu
Multiflora rose	Sumac

## DUAL ACTION CONTROLS WEEDS IN A WHOLE NEW WAY.

Unlike many other herbicides, ARSENAL is absorbed through both roots and foliage to stop new plant cell growth. Vegetation absorbs ARSENAL in less than two hours, so rain won't wash off your investment. Within four hours, plant growth ceases. In perennials, ARSENAL translocates thoroughly in the roots to prevent regrowth. This unique chemistry makes the visible results of control more gradual. In some vegetation, loss of color and other outward signs may not be apparent for weeks after application. After a year or more, returning vegetation is mainly desirable annual grasses and legumes.

## ARSENAL IS RIGHT FOR YOUR RIGHTS-OF-WAY.

On railroad, highway or industrial rights-of-way, around power substations, signal boxes, bridge abutments, lumber or freight yards — wherever you need annual total vegetation control, ARSENAL is the smart new choice for the job.



**CYANAMID**  
Agricultural Division  
Wayne, NJ 07470

©1987

Circle No. 101 on Reader Inquiry Card



# COOL-SEASON TURF DISEASES

by Dr. Joe Vargas, Michigan State University

**A** good deal of research in the area of turfgrass diseases has turned to biological management. Biological management of necrotic ring spot, summer patch and typhula blight has been demonstrated.

Another area of interest has been the re-occurrence of resistance to fungicides by turfgrass pathogens, this time involving the pythium blight pathogen *Pythium aphanidermatum* and the anthracnose fungus *Colletotrichum graminicola*. These subjects and many more concerning the current status of turfgrass diseases are discussed in this article.

These diseases, the organisms that cause them, and their cultural, biological and chemical management tools are given in Table 1.

## Biological management

**Necrotic ring spot.** It now appears that necrotic ring spot, caused by *Lepidosphaeria korrae*, is the primary patch disease found on Kentucky bluegrass in the cooler regions of the cool-season turfgrass area. The symptoms can be observed throughout the growing season even though *L. korrae* appears to be most active during the cooler weather of the spring and fall.

The plants that were infected by *L. korrae* in the cooler weather are in a weakened condition and are very susceptible to summer heat stress or drought stress. Subjecting the necrotic ring spot plants to either of these stresses will lead to the death of the weakened plants and the recurrence of symptoms, even though the pathogen may not be active at this time. The symptoms during cool weather are patches six inches to two feet in diameter with straw- to red-colored blades intermingled in the patch.



New strains of pythium are more aggressive than older, wild type strains.

Older patches may have green grass in their centers with the straw- to red-colored blades in the outer area of the patches. When the disease symptoms occur during the warm weather the red blades are often scarce and usually only straw-colored or wilted leaves are present.

Nitrogen is important for recovery of the patches caused by necrotic ring spot. Three to five pounds of actual nitrogen per 1,000 sq. ft. per season is necessary to promote recovery and to prevent new patches from developing.

Proper cultural practices are also important in patch recovery and in the prevention of new patches. These include coring to relieve compaction and layers that result when sod of one soil type is laid on top of soil of another type, which is common practice during the establishment of home

lawns and commercial lawn properties. This results in short rooting during the warm weather (when the roots of the turfgrass plant are confined to the upper layer).

Coring and re-incorporating the soil back into the thatch will, over a period of years, alleviate the layering problem. It may also help manage any potential thatch problem, which is important in managing necrotic ring spot.

Thatch has a poor moisture-holding capacity and turfs growing in a thick thatch are more susceptible to drought stress. Light, frequent irrigation is also important in managing this disease. The theory that deep, infrequent irrigation is more beneficial to turf development is just that, a theory. Preliminary research data indicates that light, frequent waterings may be more beneficial to the turf. Such wa-





# Give yourself a raise

The Hi-Lift BAC-VAC™ picks up where others leave off...another Hustler "Productive Innovation."

A maneuverable Hustler 275, 320, 340 or 400 mower equipped with an easy-dumping Hi-Lift BAC-VAC™ is the most convenient way to leave a clean job. The most advanced catcher available in commercial-



class mowers, the Hi-Lift BAC-VAC™ is totally controlled from the operator's seat.

Above all else, it hydraulically raises 4.5 feet to deposit a 15-bushel load into a container or pickup bed.

The hopper rides behind the operator so visibility, trim capability and maneuverability aren't compromised. Because Hustler 60-inch and 72-inch decks are designed to feed clippings smoothly into the Hi-Lift BAC-

VAC™, there is no need for an extra blower motor to get vacuum action. The Hi-Lift BAC-VAC™ can be installed or removed easily, to meet different work requirements.

Catcher attachments are also available for the Hustler 251 and 262 models. No matter what your requirements, there's a Hustler just right for you.

Excel Hustler maneuverability and versatility mean the utmost in productivity. Visit your dealer soon and put a Hustler to work for you. Or, call toll-free for more information.



**1-800-835-3260**  
In Kansas 1-316-327-4911

Excel Industries, Inc.  
Box 7000  
Hesston, KS 67062-2097

© 1987, Excel Industries, Inc.

**Hustler Tough  
And Built To Last!**



Model 251  
18 hp, 50"



Model 262  
18 hp, 60"



Model 275  
23 hp, 72"



Model 320  
21.5 hp, 72"



Model 340  
28.5 hp, 72"



Model 400  
34 hp, 72"



Model 602D  
32 hp, 72" hillside

Circle No. 115 on Reader Inquiry Card



terings on a daily basis, around mid-day, have been shown to help manage necrotic ring spot.

The turf appears to be benefitting culturally from the cooling of the turf and biologically from the build-up of beneficial micro-organisms in the moist thatch that may be antagonistic to *L. korrae*. There are also some new products that help manage the disease biologically.

Lawn Restore, produced by the Ringer Corporation, is a natural organic product that is a complete fertilizer containing all the major nutrients as well as some beneficial micro-organisms that produce substances under laboratory conditions that are antagonistic to the pathogen *L. korrae*. It has also been shown to manage necrotic ring spot under field conditions. Lawn Restore has been effective in both promoting the recovery of existing necrotic ring spot patches and preventing the development of new ones.

Another group of products produced by the Agro-Chem Co. (Green Magic, Strengthen and Renew and Nutra Aid), when used in a systematic program, also have been shown to

manage necrotic ring spot under field conditions. They appear to improve the environment and allow an increase in the natural population of beneficial organisms in the soil and thatch.

The key word is "management." These products are not a one-shot cure, but used systematically on a regular basis, they will manage the disease and provide a healthy turf.

**Typhula blight.** Typhula blight is caused by two species, *Typhula incarnata* and *T. ishkariensis*. *T. incarnata* is the primary species in the eastern U.S. and in southern and mid-regions of the Midwest and western United States. *T. ishkariensis* is most prevalent in the more northern snow mold regions, especially where prolonged periods of permanent snow (two or more months) exist in the midwestern and western U.S.

The two typhula species are easily distinguished from each other when observed soon after the snow melts. *T. incarnata* produces grayish spots in the turf with scattered, fairly large brown sclerotia evident, whereas *T. ishkariensis* spots have a reddish cast

to them and contain numerous small, dark black sclerotia.

Typhula blight only occurs under snow cover. It does not occur in the cool, wet weather of fall and spring, except under leaf piles. Typhula blight has been, and still is, managed primarily by fungicides (Table 1).

Lee Burpee at the University of Guelph has isolates of a saprophytic typhula species, *Typhula phacorhiza* that will biologically manage typhula blight caused by *T. ishkariensis*. This biological management of typhula blight was shown to be effective under field conditions in Ontario. Research is currently being conducted to find a way to make this biological management tool commercially available.

### New fungicide resistance

**Pythium blight.** Metalaxyl resistance to pythium blight caused by *Pythium aphanidermatum* was reported back in 1983 by Dr. P. L. Sanders at Pennsylvania State University on a single golf course in Pennsylvania. This past season, she found resistance to matalaxyl

## CALENDAR Major Disease of Cool-Season Turf

January	February	March	April	May	June	July	August	September	October	November	December
					Dollar Spot						
					Brown Patch						
					Pythium Blight						
					Anthracnose						
		Melting Out				Leaf Spot					
					Red Thread						
Fusarium Patch								Fusarium Patch			
Typhula Blight										Typhula Blight	



**Introducing the greensmower  
engineered and built to meet  
your expectations.**



*For added power, less vibration and longer life, features an 18-horsepower, twin-cylinder engine.*



*For better maneuverability — no cables — equipped with power steering.*



*For easier servicing, features access to valve spools without removing valve bank and a hydraulic pump designed for simple detachment through the use of a flexible coupling.*



*For minimized downtime and increased life of hydraulic components, features 10-micron oil filtration system.*



*For added convenience, specially engineered hydraulic system allows backlapping of individual reel units while on mower.*

From LESCO, the company that listens and responds to customer needs, comes the LESCO 300 Greensmower. This new triplex unit offers more power, better maneuverability, easier service, improved filtration and more convenient backlapping — all at a substantial savings.

Put the advantages of the LESCO 300 Greensmower to work for you. The

mower is priced at \$7,900.00 delivered to you. **5% Additional savings can be yours by picking up your mower at one of our regional distribution facilities**, for further details contact your LESCO sales representative today, or call toll free:

**(800) 321-5325  
NATIONWIDE**

**(800) 362-7413  
IN OHIO**

**LESCO**

LESCO, Inc., 20005 Lake Road, Rocky River, Ohio 44116 (216) 333-9250

Circle No. 123 on Reader Inquiry Card



in several additional locations in other states. We also found metalaxyl resistant strains of *P. aphanidermatum* at two locations in Kentucky on perennial ryegrass fairways.

We concurred with Dr. Sanders' previous findings that these new strains are far more aggressive than the older, wild type strains. They also appear to be pathogenic over a wider range of temperatures, occurring when temperatures were only in the high 70s.

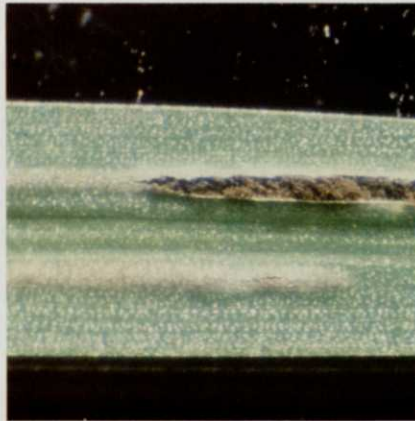
The metalaxyl-resistant strain of *P. aphanidermatum* was not cross-resistant to chloroneb, ethazole, probamocarp or fosetyl A1. These fungicides can be used where these resistant metalaxyl strains occur. How widespread or how persistent these strains will become only time will tell, but a good rule of thumb is that if these strains are going to occur, they will begin to show up the second or third year, especially if multiple applications of metalaxyl are made during the first two seasons.

The fact that the perennial ryegrasses are super susceptible to pythium blight combined with the development of the highly aggressive metalaxyl resistant strains of *P. aphanidermatum*, raises serious questions about the use of the perennial ryegrasses in areas of the country where there is a high incidence of pythium blight.

**Anthracnose.** Resistance to the benzimidazole fungicides (benomyl, thiophanate, thiophanate-methyl) by *Colletotrichum graminicola*, the cause of anthracnose, took much longer to develop than with other fungi like *Erysiphe graminis* (powdery mildew) or *Sclerotinia homeocarpa* (dollar spot).

Resistance to the benzimidazoles by *E. graminis* and *S. homeocarpa* usually occurred in the first three years and often in the second year. On the golf courses from which the benzimidazole-resistant strain of *C. graminicola* was isolated, the superintendent had used benzimidazole fungicide for 14 years. Resistant dollar spot had been observed on the course for over 12 years.

The question is, why did resistance



**Stripe smut is one of the most devastating diseases of turf.**

to the dollar spot organism show up so quickly, whereas resistance to anthracnose took so long? I think the answer lies in the type of pathogen these two fungi are.

*Sclerotinia homeocarpa* germinates and may grow for a short period of time and then infects the plant.

If fungicides like the benzimidazoles eliminate sensitive strains from the population, *S. homeocarpa* is not capable of growing saprophytically after the fungicide has disappeared from the environment in order to re-establish itself throughout the turf area. This allows resistant strains, which are in low numbers in the population, to infect the turf and begin to build up their numbers quickly in the absence of competition from the benzimidazole-sensitive wild type strains. Under such conditions, the benzimidazole-resistant strains can build up rapidly in the turf.

*Colletotrichum graminicola*, on the other hand, spends much of its life living as a saprophyte in the thatch and mat on dead organic matter when it is not a pathogen. So, when fungicides like the benzimidazoles eliminate sensitive strains from the population, the survivors can grow saprophytically and build up the population again.

With this type of competition, it would take benzimidazole-resistant strains many years to build up large

enough numbers to become the dominant strain in the population. The message is that those of you who have been using the benzimidazoles for many years should be on the lookout for the emergence of benzimidazole-resistant strains of *Colletotrichum graminicola*. Don't be lulled into thinking that if resistance hasn't occurred by now, it won't occur.

### Managing stripe spot

This disease, caused by *Ustilago striiformis*, is one of the most devastating diseases of turf. The patch diseases have certainly received all the notoriety in home lawn turf problems but more turf has been lost to stripe smut.

The reason stripe smut doesn't receive all the notoriety is that, in most instances, it is a slower-acting disease that weakens infected plants which are then crowded out by weeds or die under stress randomly as individual plants rather than as large areas dying all at once. The remaining stripe smut infected plants are too weak to fill in the voids and this allows weeds to enter in the turf. If the weeds are broadleaf or annual grasses, like crabgrass, then selective herbicides can be used to remove them.

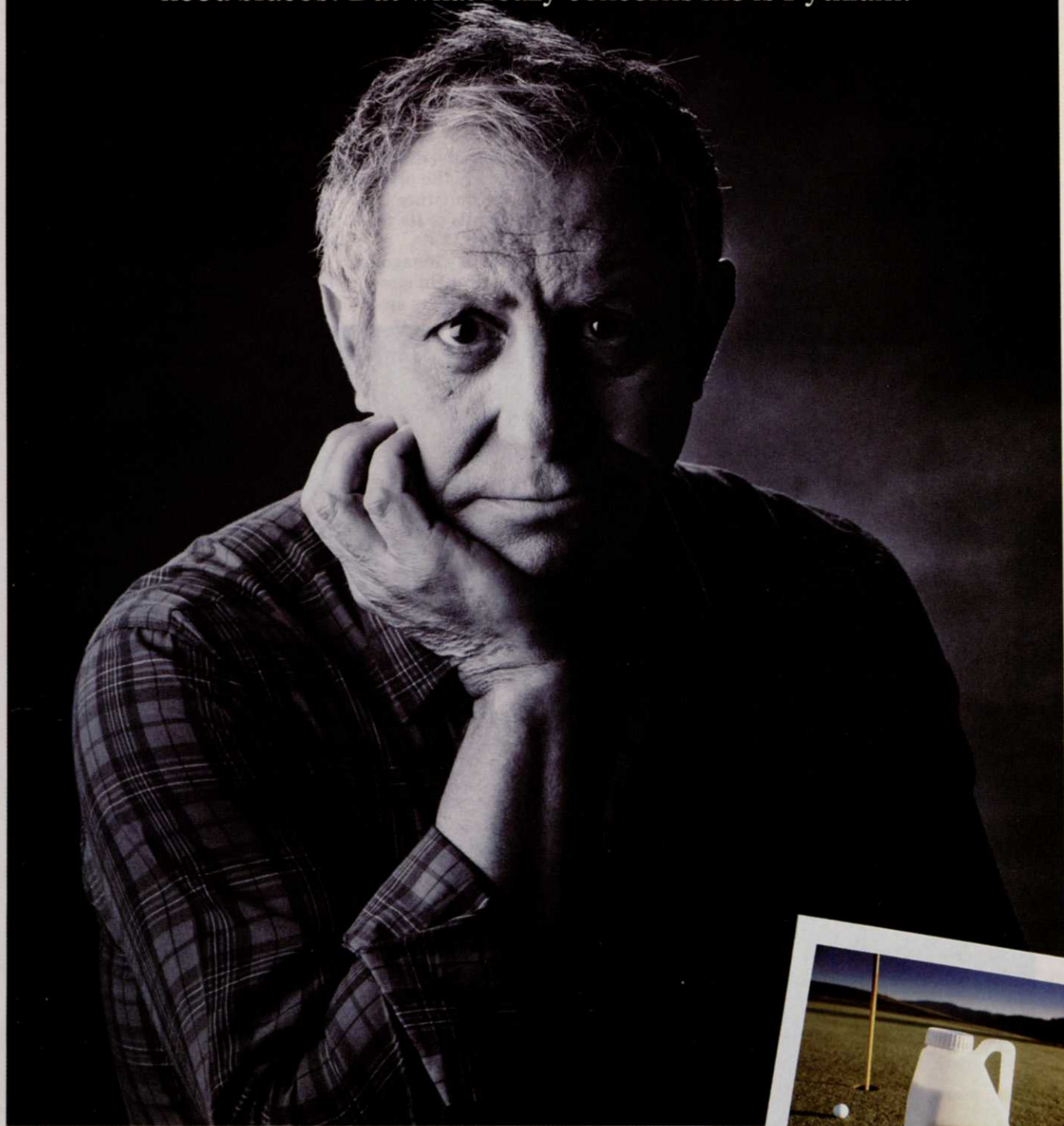
However, unlike healthy Kentucky bluegrass, the weakened stripe smut-infected plants cannot fill in the voids where the weeds were selectively removed and eventually the perennial weedy grasses like tall fescue and quackgrass fill in these voids. A total renovation of the existing turf is the only solution to a lawn infested with perennial weedy grasses since there are no selective herbicides.

What makes stripe smut such a devastating disease is that it is a systemic perennial disease. This means that once a plant is infected it will remain so for life. Any daughter plants arising from an infected mother plant via rhizomes or stolons will also be infected. So, unlike most other diseases, infection does not have to take place every year. All that's needed is environmental stress for this stripe smut weakened plant to die.

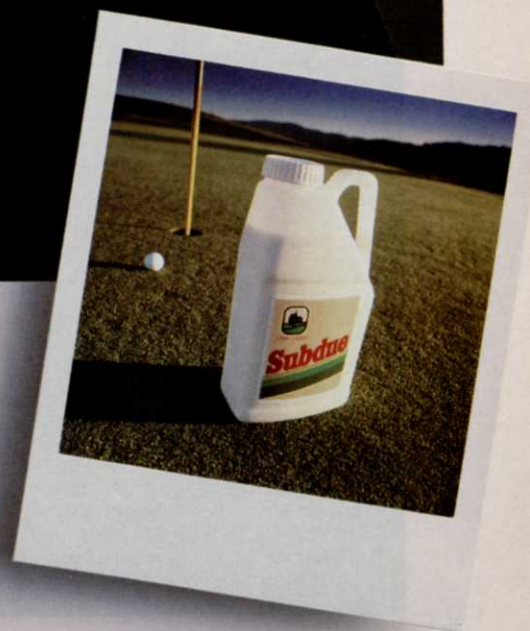
The foliar symptoms are most evident during the cool weather of spring and fall when the fungus grows



“The Pro’s son triggered the sprinklers during today’s tournament. My brother wants me to co-sign a loan. And I just found out both my kids need braces. But what really concerns me is Pythium.”



There’s one sure way to avoid worrying about Pythium. Use Subdue® fungicide. Subdue stops Pythium on contact. And once absorbed by grass roots, Subdue protects your turf against further attack for up to three weeks. So don’t let Pythium get you down. Get Subdue. Because you’ve got other things to worry about. CIBA-GEIGY





throughout the veins of the plant, eventually producing spores which rupture the epidermis, causing the leaves to have a frail, torn appearance.

Though the symptoms are most evident in the cool weather of the spring and fall, most of the turf infected with stripe smut dies in the summer when

the turf is allowed to go under drought stress. This may be due to the plant's inability to conserve moisture because of its torn epidermis or its general weakened condition.

When healthy Kentucky bluegrass is allowed to go under drought stress, it will go dormant and green up again

with the occurrence of late summer or early fall rains. Kentucky bluegrass turf infected with stripe smut, however, will die if allowed to undergo drought stress.

The fact that the disease is systemic suggests that there is little resistance in the plant. Resistance is

## COOL-SEASON TURF DISEASES

**TABLE 1  
TURF DISEASE AND CONTROLS**

Disease	Causal Agent	Hosts	Biological and Cultural Control	Chemical Control
Anthraxnose	<i>Colletotrichum graminicola</i>	Annual bluegrass Fine-leaf fescue Kentucky bluegrass Perennial ryegrass	Adequate nitrogen. Cool grass by syringing.	Maneb plus zinc sulfate, chlorothalonil, benomyl, thiophanate-methyl, thiophanate, thiophanate-methyl + mancozeb, triadimefon
Brown patch	<i>Rhizoctonia solani</i>	All major turfgrass species	Reduce nitrogen. Remove "dew." Increase air movement.	Mancozeb, maneb + zinc sulfate, chlorothalonil, anilazine, vinclozolon, benomyl, thiophanate-methyl, thiophanate, thiram, thiophanate-methyl + maneb, cadmium compounds, thiophanate + thiram, PCNB, iprodione
Dollar spot	<i>Lanzia spp.</i> <i>Moellerodiscus spp.</i>	Annual bluegrass Bahagrass Bermudagrass Centipedegrass Colonial bentgrass Fine-leaf fescues Kentucky bluegrass Perennial ryegrass St. Augustinegrass Zoysiagrass	Increase nitrogen. Remove "dew."	Benomyl, thiophanate, thiophanate-methyl, chlorothalonil, anilazine, fenarimol, cadmium compounds, thiophanate + thiram, thiram, thiabendazole, benomyl, iprodione, thiophanate-methyl + maneb, vinclozolin, triadimefon
Summer patch	<i>Phialophora graminicola</i>	Annual bluegrass Kentucky bluegrass	Light, daily watering during the summer.	Fenarimol, thiophanate-methyl, thiophanate, triadimefon, iprodione, benomyl
<i>Helminthosporium</i> Diseases Brown blight Leaf blotch Melting-out Net blotch Red leaf spot Stem and crown necrosis Zonate Eye spot Leaf spot	( <i>Dreschlera</i> ) <i>D. siccans</i> <i>D. cynodontis</i> <i>D. poae</i> <i>D. dictyoides</i> <i>D. erythrospila</i> <i>D. specifera</i> <i>D. gigantea</i> <i>Bipolaris sorokiniana</i>	Ryegrass Bermudagrass Kentucky bluegrass Fescue Creeping bentgrass Bermudagrass Bermudagrass Bentgrass Fine-leaf fescue, Kentucky bluegrass	Remove clippings. Raise cutting height. Plant resistant cultivars. Moderate spring nitrogen. Daily irrigation.	Mancozeb, chlorothalonil, iprodione, anilazine, maneb + zinc sulfate, PCNB, vinclozolin

*continued on page 40*



# It's Hard To "Resist" A Winner!



2 LBS.

Mallinckrodt

**KOBAN 30**

PYTHIUM

ACTIVE INGREDIENTS  
Pythium spores - 30%  
INERT INGREDIENTS - 70%

### WARNING!

KEEP OUT OF REACH OF CHILDREN  
HAZARDOUS IF SWALLOWED  
MAY CAUSE SKIN IRRITATION  
AVOID CONTACT WITH EYES, NOSE, OR MOUTH  
WASH HANDS THOROUGHLY WITH SOAP AND WATER  
IF SWALLOWED, DRINK WATER OR MILK  
IF ON SKIN, WASH WITH SOAP AND WATER  
IF IN EYES, FLUSH WITH WATER FOR SEVERAL MINUTES  
IF IN NOSE, FLUSH WITH WATER  
IF IN MOUTH, SWALLOW AND DRINK WATER  
IF ON CLOTHING, REMOVE AND WASH SEPARATELY

**MALLINCKRODT, INC.**

ST. LOUIS, MO 63147  
1-800-325-7155

## KOBAN® for resistance free Root Rot Control

If you've been using anything but KOBAN in your fight against root rot, you're teamed with a loser. Only KOBAN has the winning formulation to not only suppress root rot but kill the fungi.

And KOBAN keeps winning with no resistance problems. KOBAN has been proven effective on fine quality turf and seed treating for over fifteen years without a single case of resistance. That's a winner!

### KOBAN® Comes in Three Convenient Forms.

Apply KOBAN at your convenience for unsurpassed root rot control. Available in three easy-to-use forms—wetable powder, flowable, and granular.

For more information on KOBAN. Call toll-free or contact your Mallinckrodt Turf Product distributor.

You'll be a Winner!

**Mallinckrodt**®

P.O. Box 5439  
St. Louis, MO 63147  
1-800-325-7155

KOBAN®  
WP-6 x 2 lb. bag/case  
Flowable-4 x 1 gal./case  
Granular-40 lb. drum



# LANDSCAPE *Guide* MANAGEMENT

expressed as keeping the infection localized, that is, small spots on the leaves, as in the case of the rust diseases. Leaf rust and stem rust are considered minor diseases of turf because they tend to produce localized lesions whereas stripe rust is a major disease because it is systemic in the plant, indicating little resistance.

Until recently, a stripe smut-in-

fectured turf was subject to a slow but inevitable death, eventually being taken over by perennial weeds, which meant the turf had to be killed by a herbicide like Roundup and completely renovated. However, the development of triadimefon and fenarimol has changed all that. These two fungicides, used on a regular basis, will manage stripe smut.

The first application should occur in the spring just before the turf breaks dormancy, followed by a second application just prior to the summer heat stress period and a third application when the cool nighttime temperatures of the late summer or early fall return.

## Other patch diseases

**Summer patch.** It has become increas-  
*continued on page 44*

## COOL-SEASON TURF DISEASES

**TABLE 1  
TURF DISEASE AND CONTROLS**

Disease	Causal Agent	Hosts	Biological and Cultural Control	Chemical Control
Take-all patch	<i>Gaeumannomyces graminis</i>	Creeping bentgrass Kentucky bluegrass Velvet bentgrass	Reduce soil pH. Avoid liming. Use acidic fertilizers. Sulfur	Fenarimol
Pythium blight (cottony blight)	<i>Pythium spp.</i>	Perennial ryegrass Creeping bentgrass Annual bentgrass	Improve soil drainage. Increase air circulation.	Chloroneb, ethazol, metalaxyl, propamocarb
Red thread	<i>Laetisaria fuciformis</i>	Creeping bentgrass Colonial bentgrass Bermudagrass Annual bluegrass Perennial ryegrass Fine-leaf fescue	Increase nitrogen.	Anilazine, iprodione, triadiefon, vinclozolin, chlorothalonil
Pink patch	<i>Limonomyces roseipellis</i>	Perennial ryegrass Creeping bentgrass Fine leaf fescue	Increase nitrogen.	Try red thread fungicides
Snow molds Typhula blight Fusarium patch	<i>Typhula spp.</i> <i>Fusarium nivale</i>	Annual bluegrass Colonial bentgrass Creeping bentgrass Fine-leaf fescues Kentucky bluegrass Perennial ryegrass Tall fescue Velvet bentgrass	Avoid early fall nitrogen fertility that leads to lush growth.	Mercury compounds, PCNB products, chlorothalonil, chloroneb. These products may have to be used in combination for effective snow mold management. Benomyl, iprodione, or mancozeb will control Fusarium patch where it occurs alone.
Necrotic ring spot	<i>Leptosphaeria korrae</i>	Kentucky bluegrass	Nitrogen to promote recovery. Light daily irrigation. Lawn Restore, Green Magic, Strengthen & Renew.	Iproione, fenarimol, benomyl, thiophanate, thiophanate- methyl
Stripe smut	<i>Ustilago striiformis</i>	Kentucky bluegrass Creeping bentgrass	Reduce nitrogen. Prevent summer dormancy.	Fenarimol, triadimefon




*Tough mowers...  
from rough cut  
to smooth finish.*

G.S.A. Contract No. GS-07F-13712

## The CM Series

Extra Heavy Duty  
Hydrostatic Rotary Mowers for  
Commercial/Municipal Users



CM 20-60/72

Superior performance in both rough cut and refined mowing at speeds to 11 miles per hour. The "CM" gives the commercial user a tough, low maintenance machine that mows better at top speed than other mowers at half the speed. And does it with the added safety of rear discharge.

Kut-Kwick. More than forty years of experience building professional mowers for professional users.

**kut-kwick**

P.O. Box 984  
Brunswick, Georgia 31521  
Telephone 912-265-1630

Call today for complete information.  
Toll-free 1-800-248-5945  
In GA. 1-800-592-5945





**New Lower Price!**  
See Your Distributor for Details

# ROUNDUP® HERBICIDE ON ROADSIDE WEEDS.

There's more to Roundup® than just broad-spectrum weed control at the right price. Roundup also has excellent environmental characteristics. It's biodegradable and inactive in the soil, so it can't wash, leach or carryover. It's also odorless and practically non-toxic to people, pets, fish and wildlife. So you can use Roundup with confidence anywhere along the road – in rural as well as heavily built-up areas.

With Roundup herbicide on the job, you can be sure of knocking out just about every kind of weed or brush problem you're

likely to come across – with one application – so it won't grow back. And now with its new lower price, Roundup's unmatched weed control is more affordable than ever.

You can also save time with Roundup. For example, in a bermudagrass or bahiagrass release program, one man spraying once can replace 3 men mowing 3 times a year. What's more, Roundup can go where a mower can't: along fences, section lines, guard rails and steep grades, on graveled and rocky areas, and, of course, around signs.



# TAKES ITS TOLL NOT THE ENVIRONMENT.

Roundup... dollar for dollar, no other method of weed control will give you cleaner, safer roads.

FOR A FREE GUIDE TO ROUNDUP, CALL  
TOLL-FREE 800-332-3111

ALWAYS READ AND FOLLOW THE LABEL FOR ROUNDUP® HERBICIDE.  
Roundup® is a registered trademark of Monsanto Company.  
© Monsanto Company, 1987 R1P7101D

**Monsanto**



**AFFORDABLE**



**EFFECTIVE**

WANT TO KNOW MORE ABOUT HOW ROUNDUP CAN STRETCH YOUR BUDGET AND MANPOWER? COMPLETE, CLIP AND MAIL TO:

Monsanto Company, Roadside C3SD  
800 N. Lindbergh Blvd., St. Louis, MO 63167

NAME \_\_\_\_\_

TITLE \_\_\_\_\_

ADDRESS \_\_\_\_\_

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

No. of miles of roadsides maintenance you control \_\_\_\_\_

Have you used Roundup before? \_\_\_\_\_

Where do you want to use Roundup?  
\_\_\_\_\_  
\_\_\_\_\_



## DISEASE from page 40

ingly evident over the past few years that summer patch, caused by *Phialophora graminicola*, is a primary disease of annual bluegrass during warm weather. It can also be found on Kentucky bluegrass and fine-leaf fescues, especially in the warmer areas of the cool-season grass region.

On annual bluegrass, the initial symptoms are a yellowing of the turf in patches, usually six inches to one foot in diameter, followed by a thinning of the turf, with the remaining turf turning bronze in color. If warm weather persists, all the turf in the patches may die.

Most of the creeping bentgrass cultivars are resistant and creeping bentgrass frequently can be seen recolonizing the centers of these patches. Preliminary data indicate that soil temperature and soil moisture may be important in the development of this disease.

Both excessive and limiting soil moisture during periods of hot

weather may result in severe outbreaks of summer patch. Lighter and more frequent irrigations should help reduce the severity of summer patch.

**Take-all patch.** Take-all patch, caused by *Gaeumannomyces graminis* var. *avenae* was formerly known as ophiobolus patch caused by *O. graminis*. This disease was originally thought to be confined to the Pacific Northwest. It has now been reported throughout the United States and Canada wherever creeping bentgrass is grown.

### Effective chemicals

Fungicides for the management of the patch diseases and how to use them are discussed below:

*Benomyl*, *thiophanate* and *thiophanate-methyl*. These fungicides will manage all three diseases. They are all basically the same chemistry as far as mode of action is concerned. They are also systemically translocated upward and outward from where they enter the plant. For

fungicides to be effective against these root pathogens, they need to be drenched into the soil where they can be taken up by the roots. If they are allowed to dry on the foliage, they will not manage the patch diseases.

For best results the area to be treated should be irrigated just prior to treatment.

*Fenarimol*. This fungicide will also manage all three patch diseases and does not need to be drenched in to be effective. For management of summer patch on annual bluegrass, treatments should be applied early in the season before the temperatures go into the 80 degrees Fahrenheit range on a permanent basis.

*Iprodione*. This fungicide is effective against necrotic ring spot and does not need to be drenched in to be effective.

*Triadimefon*. This fungicide is effective against summer patch and does not need to be drenched in to be effective. There are some reports in the literature that suggest this product is only effective against summer patch when applied as a preventive treatment. **LM**

# Clean Fast, Save

## Sweep tight areas

TENNANT® 215 cleans 46" path, 70,000 square ft./hr. More than 20 times faster than hand methods, 4 times faster than walk-behind models. Compact, maneuverable for cleaning congested areas. Excellent dust control. Multi-level hopper dump optional. 8 hp gas or LP engine or 36 V. battery power.



Circle No. 143 on Reader Inquiry Card

## Tough sweeper scrubs

TENNANT® 186 sweeps 6 times faster than pushbrooms; covers 34" path, up to 18,000 square ft./hr. Heavy steel wraparound bumper; reinforcing throughout. Powerful brush/vacuum system for nearly 100% dust control. Converts to scrubber in minutes. Removes grease, dirt, oil, other spillage — in one pass. Choose 8 hp gas, LP, or quiet 24 V. battery. "Type EE" available.



Circle No. 144 on Reader Inquiry Card

## Free catalog

shows complete line of sweepers, scrubbers, grime-removing scarifiers, floor finishes, finance plans, and productivity boosters.



Free demonstration: no obligation.



**CALL TOLL FREE:**  
**800/328-5727 EXT. 768E**  
**MINNESOTA: 800/742-5685 EXT. 000**

Circle No. 145 on Reader Inquiry Card





# A FUNGICIDE HAS TO BE SPECIAL TO BE TREATED LIKE THIS.

There are more superintendents on more courses treating more acres with Daconil 2787® fungicide than with any other turf fungicide.

In fact, nearly two-thirds of all U.S. golf courses are now being treated with regularly scheduled applications of Daconil 2787.

Because Daconil 2787 is the only fungicide that has a proven record of delivering consistent, first-rate control of 12 major turfgrass diseases. Including such tough ones as Helminthosporium melting out, benomyl-resistant dollar spot and large brown patch.

What's more, there has never been a single documented case of resistance in over 15 years of continuous use. Even on courses where Daconil 2787 was applied at weekly intervals for many seasons. Convincing proof that you don't have to alternate Daconil 2787 to avoid developing resistance.

And when it comes to cost per 1000 sq. ft., a single

application of Daconil 2787 Flowable Fungicide is more economical than most other fungicides.

Plus you never have to add a costly spreader/sticker to Daconil 2787. It's already built into the formulation to assure full and even plant coverage for maximum disease prevention.

So this season, be one of the thousands of superintendents who made the right choice. Make your fungicide Daconil 2787 on tees, greens and fairways.

Fermenta Plant Protection Company, 7528 Auburn Road, P.O. Box 348, Painesville, Ohio 44077.



 **FERMENTA**<sup>™</sup>  
PLANT PROTECTION

Always follow label directions carefully when using turf chemicals.

Circle No. 116 on Reader Inquiry Card



# WARM-SEASON TURF DISEASES

by Dr. Don Blasingame, Mississippi State University

**M**anagers of southern turf not only fight diseases of six different warm-season turf species, but also diseases of overseeded cool-season turf species.

Although most southern turf diseases are caused by fungi, agents such as bacteria, viruses and nematodes can cause serious problems to certain grasses.

Southern turf managers can't depend solely on fungicides for disease control. Good variety selection, proper fertilization and appropriate cultural practices are very important in disease control.

No amount of fungicide will compensate for poor fertility and cultural practices. Knowing when the most common diseases occur also will aid managers in scheduling fungicide applications (see chart).

## Brown patch

Brown patch is the most common turf

disease in the Southeast. Although St. Augustine and zoysiagrass are the most susceptible species, even the more tolerant centipedegrass, Bermudagrass and ryegrass are frequently damaged by this fungus.

Brown patch is favored by warm, moist weather combined with cool nighttime temperatures. Therefore, in certain areas of the South, brown patch can and does occur any month of the year.

In the upper regions of the South, the most favorable conditions for brown patch development occur from late April through mid-October.

Symptoms of brown patch on warm-season grasses are different than the symptoms of the disease on cool-season turf. Even though the grass is usually killed in a circular pattern, many times the smoke ring is not seen on southern turf.

Under certain conditions the fungus may cause a gradual thinning

of the turf over a rather large area instead of killing in a circular pattern.

Several factors tend to make the grass more susceptible to brown patch. One is the excessive application of nitrogen fertilizer. The resulting lush growth is readily attacked.

Another is watering late in the afternoon and allowing the grass to remain wet for long periods of time. Excessive accumulation of thatch also creates a favorable environment for the development of brown patch and many other diseases.

Fungicides are best used on a preventive schedule. Once symptoms develop, control can be difficult.

## Dollar spot

Dollar spot is common on Bermudagrass, zoysiagrass and annual and perennial bluegrasses.

Symptoms of dollar spot are different on certain warm-season grasses than those noted on cool-season grasses.

On finer textured grasses, such as Bermudagrass and zoysiagrass, the disease kills grass in small patches two to three inches in diameter. Under severe conditions, these patches may coalesce so that the turf has a mottled appearance. Blades of grass at the outer edges of the infected area develop tan spots with reddish brown margins.

On coarser warm-season grasses, turf is killed in larger patches ranging up to a foot in diameter.

Dollar spot is prevalent during periods of mild weather in the spring and fall.

Unlike brown patch, dollar spot is retarded by high levels of nitrogen. Still, turf managers should consider the impact of high nitrogen on brown patch and other diseases.

*continued on page 48*

**Spring dead spot is a serious disease of Bermudagrass in the upper sunbelt.**







# YOU CAN'T MAINTAIN A CHAMPIONSHIP COURSE WITH AMATEUR EQUIPMENT.

Turf maintenance is a tough, all-weather, full-time job. That's why so many of America's turf professionals are switching to the high-quality, low-maintenance HIJET® Multipurpose Utility Vehicles from Daihatsu.

HIJET delivers reliable turf-tough performance powered by a whisper-quiet, 3-cylinder, water-cooled engine. You'll enjoy the maneuverability of rack-and-pinion steering and a super-tight turning radius of only 12½ feet!

The HIJET is so versatile, you'll be able to do more work with fewer vehicles and haul bigger payloads than your current equipment can handle.

HIJET comes in four body types: Cut-A-Way, Full Cab, Hydraulic Tipper and Hydraulic Liftpick/Tipper. Steel doors with roll-up windows, guard bars, heater/defroster, turf or regular tires, and a restraint cage are all available as either standard or optional equipment depending on the body type you select.

Discover the incredible HIJET for yourself. The coupon below will bring you all the details. Or call 1-800-237-9185 (USA), 1-800-423-6824 (California).



## Tell me more.

Name \_\_\_\_\_

Title \_\_\_\_\_

Company \_\_\_\_\_

Address \_\_\_\_\_

Telephone (\_\_\_\_) \_\_\_\_\_

Turf/Grounds       Industrial       Agricultural

Designed exclusively for industrial, agricultural and turf maintenance applications. Not certified for on-the-road usage in the United States.



Daihatsu America, Inc.,  
Dept. C, 1550 West 8th St.,  
Long Beach, CA 90813.



Classified by Underwriters  
Laboratories Inc.® as to fire hazard  
only. Type GS industrial truck.

Circle No. 109 on Reader Inquiry Card



**WARM SEASON** from page 46

Watering should be performed only in the early morning so the foliage can dry quickly. Fungicides can be used to help bring the disease under control once it gets established.

**Leaf spots**

A number of fungi cause leaf spots on many southern grasses. Regardless of the causal agent, leaf spots and their control on southern grasses are similar.

**Melting out** (*Bipolaris* spp.)—Bermudagrass and ryegrass are most severely affected by these infections, although the fungus can survive on centipedegrass and St. Augustine.

Infection can occur over a wide range of temperature, but usually is more severe at 70 to 95 degrees Fahr-

enheit. Milder temperatures in the spring and fall are more favorable for infection.

Melting out causes small, dark-colored spots or flecks on the leaves and sheaths. Leaf spots are usually more numerous near the collar of the leaf blades. Severely affected leaves wither and die and the turf frequently becomes brown and thin.

Symptoms on overseeded ryegrass are altogether different. Although leaf spots may occur, this same melting out can cause severe crown rot. This causes a yellowing and discoloration of the grass and a general thinning of the turf.

Fertilize with adequate levels of nitrogen and potassium if melting out diseases become a problem. With

careful management, apply fungicides recommended for melting out blight control.

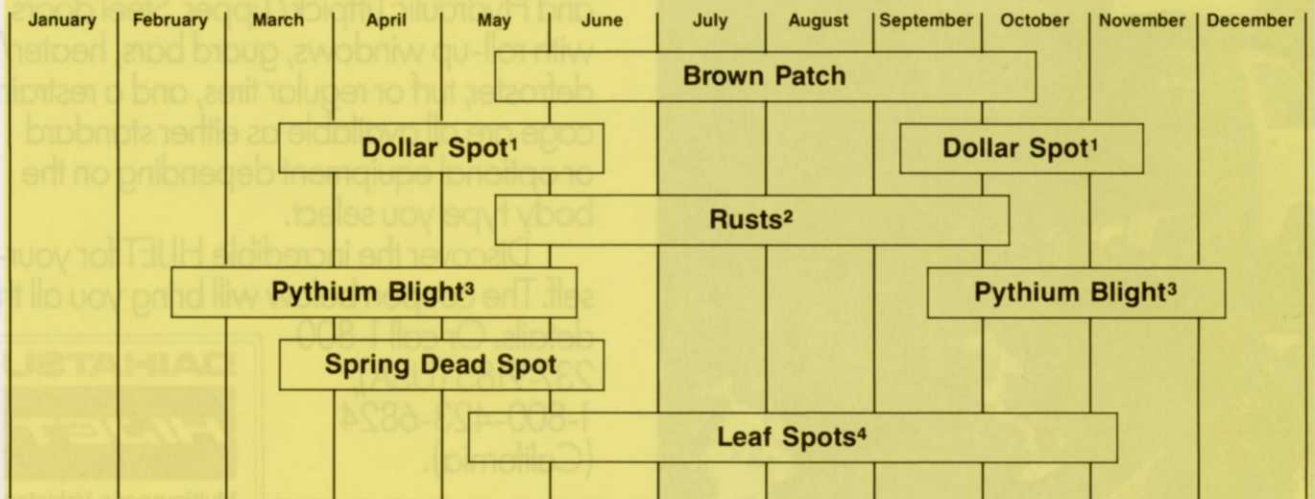
**Gray leaf spots**—St. Augustinegrass is the primary host for gray leaf spot. The disease occurs throughout the lower South during warm, humid weather.

Spots on the leaf blades are the most visible, but sheath and stem lesions also occur. Leaf spots begin as olive green to brown, water-soaked spots as small as a pinhead. These enlarge rapidly and form a circular to elongated lesion that is brown to ash colored with purple margins.

The disease occurs during moderate to warm weather accompanied by high relative humidity. Severity of the disease is enhanced by applica-

**CALENDAR**

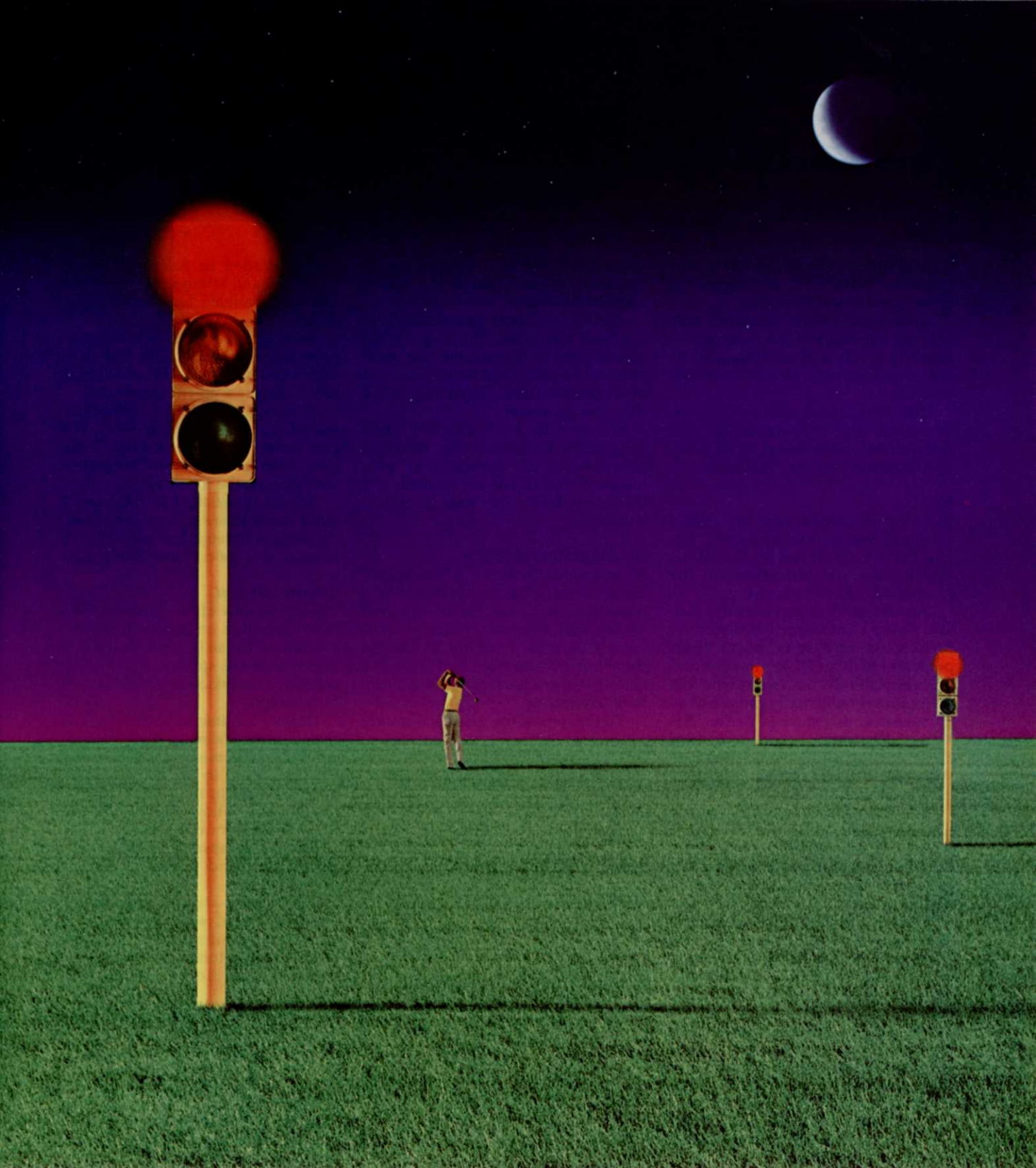
**Major Diseases of Warm-Season Turf\***



\* The calendar gives the normal time for turf diseases to occur. However, they may occur at other times depending upon environmental conditions.

- 1 - Dollar spot affects overseeded turf as well as warm-season grasses.
- 2 - Rust does affect overseeded grasses but is most common on zoysiagrass.
- 3 - Pythium blight is most damaging on overseeded turf but can cause damage to warm-season turf especially during "transition" periods.
- 4 - Most warm-season grasses are affected by certain leaf spots. For example: gray leaf spot of St. Augustine and the helminthosporium complex on Bermudagrass.





Stops leaf spot for less.

Dyrene 4.

It's the economical new formulation of a proven performer. So now you can keep leaf spot under control. Without your budget getting out of control. DYRENE 4 flowable turf fungicide. The stopper. Mobay Corporation, Specialty Products Group, Box 4913, Kansas City, Mo. 64120



DYRENE is a Reg. TM of Mobay Corporation. 6-2254

Circle No. 128 on Reader Inquiry Card



tions of nitrogen fertilizer. It is more a problem in shaded areas where the grass remains wet from dew.

Treatment with a fungicide may become necessary if the disease outbreak is severe and accompanied by prolonged periods of wet favorable weather.

The fungicides chlorothalonil, mancozeb and cycloheximide plus thiram have been found to be effective in controlling gray leaf spot.

### Rust

Rust or *Puccinia* species infect ryegrass, zoysiagrass, bluegrass, fescue, Bermudagrass and St. Augustine. Zoysiagrass and bluegrass are the most often infected grasses.

Susceptibility depends on the variety. Fungus infection is favored by minimum and maximum temperatures of 50 to 70 degrees Fahrenheit respectively. For this reason, the disease does not usually cause severe damage over an extended period. It is likely to be more severe in shaded areas during rainy, humid weather. Affected turf will appear unthrifty and begin to thin.

The disease is characterized by the presence of pustules on the leaf blades. These pustules range from bright orange to cinnamon-brown in color depending upon the species of fungus present.

Certain varieties of ryegrass are extremely susceptible to rust, and sometimes severe damage can occur. Zoysiagrass, especially Meyer and Emerald, are most severely infected by rust.

Fertilize to stimulate grass growth, mow on a four- to five- day schedule and catch clippings. If necessary, a fungicide may be applied to help reduce the amount of disease present.

Triadimefon, chlorothalonil, mancozeb and cycloheximide are effective in controlling rust.

### Spring dead spot

Spring dead spot is a serious disease of Bermudagrass in certain parts of the upper sunbelt. It is found generally on Bermudagrass or zoysiagrass under high maintenance.

Damage to the turf apparently occurs during the dormant season. When greenup occurs in the spring,

areas a few inches to several feet in diameter appear where the sod is completely dead.

Spring dead spots' causal agent has not been identified. The only control procedures recommended are good cultural practices and limiting the use of nitrogen fertilizer, especially late in the growing season.

Research has shown that fungicides can limit the damage. However, at the present time only benomyl and PCNB are labeled, and these may be limited uses in certain states.

### St. Augustine decline

St. Augustine decline (SAD) is caused by a virus. The symptoms are a mosaic-type chlorosis of the leaf blades that resemble nutrient deficiency or mite feeding. Evidently there are several strains of the virus since there is a great range in damage to St. Augustine.

To this point, the disease has only

*Turf managers should consider the impact of high nitrogen on brown patch and other diseases.*



**Spores of the melting out fungus can easily be spread by wind, rain and equipment.**

been recorded in Arkansas, Texas, Louisiana and Mississippi. No chemicals are available for the control of SAD.

Several varieties of St. Augustine, however, are resistant to the virus. These can be planted in areas where the disease is a potential problem.

Floritam was the first variety released with resistance to SAD. It is also resistant to chinch bugs. It has poor cold tolerance and should be used only in the lower South.

Seville is resistant to SAD and is more shade tolerant than common St. Augustine. Raleigh has both SAD resistance and good winter hardiness.

### Downy mildew

Downy mildew of St. Augustine was first described on common St. Augustine in Texas in 1969. Since then the disease has spread and has been identified in Arkansas, Louisiana and Mississippi.

Downy mildew appears as white, raised, linear streaks that develop parallel to the mid-veins of the leaf. Streaks appear in the spring and remain throughout the summer, giving the leaves a yellow appearance with some death toward the tips.

Severe disease occurs in grass grown in flood plains or poorly drained areas.

The white-streak symptom is easily confused with the virus disease, St. Augustine decline. However, the virus symptoms are more yellow in color and more mottled than striped.

Downy mildew has been difficult to control with most common turf fungicides. Good drainage is recommended for cultural control.

### Pythium blight


Pythium blight can be a devastating disease on overseeded ryegrasses. Bermudagrass and other warm-season grasses can be affected to a lesser degree.

An abundance of moisture is required for pythium blight development. In addition, the disease is favored by warm temperatures.

Affected grass is killed rapidly in spots two to four inches in diameter. These spots may develop into streaks so that large areas of turf are damaged.

*continued on page 52*





# MAVRIK.<sup>®</sup> ALL THE AMMUNITION YOU NEED.

## *Insect and mite protection from tee to green.*

MAVRIK AQUAFLOW<sup>®</sup> Insecticide is a broad spectrum insecticide and miticide—in fact, it eliminates practically every problem except divots.

MAVRIK goes after pests that live in turf, in shrubs, in trees. It kills chinch bugs, sod webworms, mites, cutworms, leaf feeding caterpillars, aphids, whiteflies, leaf beetles and others.

There has never been a single product that handles so many pests, while being so safe to plants, convenient to use and easy to apply. MAVRIK is a non-restricted material, and it has been tested on more than a hundred ornamental species without a report of any phytotoxicity.

MAVRIK is a water-based flowable, so it's easy to mix. There is little residue and no odor—you can use it Friday afternoon and the members won't get their noses out of joint over the weekend. After a spray has dried, it's easy on bees. And it won't harm bird species.

You won't find the convenience and broad spectrum coverage of MAVRIK in any other product. And since MAVRIK is available at your local distributor, all you have to do is ask for it.

---

**SANDOZ**CROP PROTECTION



## WARM SEASON *from page 50*

During early stages of development, the affected grass appears wilted and greasy. At times the affected turf spots may have a cottony appearance due to the abundant growth of the fungus. For this reason, the disease is frequently referred to as cottony blight.

Certain species of pythium can also

cause root rot on turtgrasses. Due to the restricted root function, the plants become chlorotic and the turf begins to thin.

On overseeded grasses the disease can be limited by using treated seed and delaying the overseeding until as late as possible during the fall. Water as little as possible during periods of favorable activity. The perennial

ryegrasses are not as susceptible as annual. Under severe disease pressure, chemical control may be required.

## Fairy rings

Fairy rings generally appear in lawns and other turf areas as circles or arcs of dark green, fast-growing grass during the spring and early summer. A ring of thin dead grass may develop on one or both sides of this circle.

The disease is caused by one of several soil-inhabiting fungi that commonly produce mushrooms. Mushrooms that sometimes appear in the ring are the fruiting bodies of these fungi. Stimulation of the grass is due to release of nutrients from the organic breakdown of the thatch by the growing fungus.

No chemicals are labeled for the control of fairy ring.

Two general approaches may be considered: removal and suppression. Although relatively impractical, removal of infected soil and grass to a depth of 12 inches or more in a band several feet on each side of the infected area and replacement with clean soil is one solution.

Another approach is to suppress the disease. For low-maintenance grass areas, increase the water and fertilization program to stimulate the declining grass inside the ring. Symptoms of fairy ring can be masked by pumping large quantities of water into this area.

## Slime molds

Slime molds are a group of organisms that cover above-ground plant parts with a dusty gray-black or dirty yellow mass.

When you look closely at this growth, you see small round balls scattered over the plant. If you rub these between your fingers, a sooty powder emerges. This consists of spores of the fungus.

Slime molds normally live in soil where they feed on decaying organic matter. When the mold is ready to reproduce, it grows up on to the grass blades so that the spores may be spread greater distances.

Slime molds do not feed on living plants. They only use them to assist in the distribution of spores during reproduction.

Slime molds occur during wet weather throughout the spring, summer and fall. They disappear rapidly as soon as it becomes dry. Chemical control is usually not necessary. **LM**

## NOTHING CAN WITHSTAND THE FORCE OF AN IDEA WHOSE TIME HAS COME!

INTRODUCING **EDGE LOCK™** THE NEW SUPERIOR PLASTIC INTERLOCKING LAWN EDGING SYSTEM. (Patent Pending)

### EDGE LOCK™

#### NO TRENCHES TO DIG!

**EDGE LOCK™** is self-trenching. It creates its own trench as it is installed!



#### NO STAKES NEEDED!

The stakes are built right in. You drive it directly into the soil with a rubber mallet!



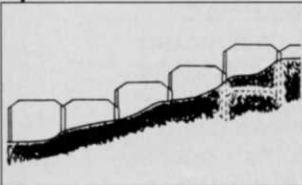
#### STACK 'EM UP!

That's right... you can stack pieces one on top of the other to suit your needs — around trees or whatever. Build it high or keep it low!



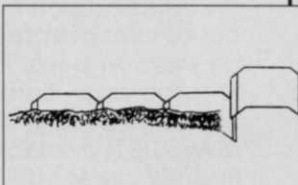
#### UP HILLS—DOWN HILLS!

Since **EDGE LOCK™** slides together vertically, you can use it like a stair step to negotiate up or down hills easily!



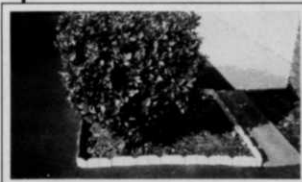
#### NO CONNECTORS NEEDED!

Each section slides inside the other bonding it together from top to bottom. Each section pivots inside the other so you can go around tight corners with ease. And it won't pull apart!



#### ON AND ON... AND ON... AND ON...

How about a 20' section in a small box 7" x 11" x 5" that you can carry in your hand? Flat pieces that can be bent *by hand* to make those sharp corners. Three different heights for different soil conditions. Competitive pricing, colors, PVC Construction and more. Want the whole story? Call or write for a free sample and brochure. Tell your distributor to "PLEASE STOCK **EDGE LOCK™**" because nothing else will do. (Patent Pending)



PLASTICS DIVISION/EBERHART STEEL PRODUCTS CORPORATION  
417 East Jefferson Blvd., Mishawaka, Indiana 46545-6594, (219) 259-2461

**DISTRIBUTORS WANTED**





# Agile as a cat

Jacobsen Turfcut II gives you all the moves for quality cutting.

Get the agile machine with the moves of a cat. Get a fast-moving, clean-cutting Jacobsen Turfcut II\*.

Featuring smooth power steering, four-wheel wide-track stability, and hydrostatic traction. A touch with your right foot delivers variable speed for precise maneuverability . . . the left pedal raises or lowers implements hydraulically for easy transport.

The heart of the Turfcut II is a rugged 23-hp, 51.6 cu. in., 4-cylinder,

liquid-cooled Continental gasoline engine. And our special dual-screened radiator assures cleaner, cooler engine operation. With a warning system to alert the operator when screens need cleaning—for longer engine life.

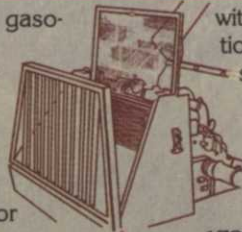
Superior rotary-deck performance delivers a quality cut on all types of turf. And, the Turfcut's mechanical or hydraulic PTO drive,

with a wide implement selection, gives you a year 'round system.

For speed and maneuverability, pounce on the Turfcut II. It's agile as a cat.

Jacobsen Division of Textron Inc.,  
1721 Packard Avenue,  
Racine, WI 53403.

\*Choose from five models, diesel and gasoline, with three-wheel or four-wheel configurations and a variety of deck sizes.



**JACOBSEN**  
**TEXTRON**

Jacobsen Division of Textron Inc.

Engineered from the ground up.

©Jacobsen Division of Textron Inc. 1985 J-95





Control you can depend on.





**Oftanol.**

It gets to grubs fast. And doesn't give up before the job is done. With less odor. OFTANOL for grub control. Count on it. Mobay Corporation, Specialty Products Group, Box 4913, Kansas City, Mo. 64120



OFTANOL is a Reg. TM of Bayer AG, Leverkusen. 6-2250

Circle No. 130 on Reader Inquiry Card

MAY 1987/LANDSCAPE MANAGEMENT 55





Bob Bruglio (left) and Frank Torre claim their trucks are the most attractive in all of Michigan.

The Grainer residence, right, one of Torre & Bruglio's pieces of art.



# KEEPING IT CLEAN

Torre & Bruglio Landscaping of Michigan is blessed with the sweet smell of success. No wonder: it's squeaky clean.

by Jerry Roche, editor

**F**rank Torre and Bob Bruglio are Italian, and proud of it. They enjoy a good meal. They like fancy trucks. They are meticulous dressers. "We like to touch everything," Torre admits over lunch in a Mount Clemens, Mich. restaurant. For emphasis—to let you know he delivers the next line with some emotion—he grabs the salt and pepper shakers and squeezes. Tightly. Very tightly: "I don't think we want to lose that touch. When something gets out of reach, you can't touch it any more."

He is talking about the size of Torre & Bruglio Landscaping, a company he

and Bob Bruglio began with a Massey-Ferguson truck and leased tools back in 1976.

Today, they own 42 trucks and \$1 million worth of equipment. Today, an autographed photo of Lee Iacocca hangs on the reception room wall, testament to the job they are doing on Chrysler's 40-acre world headquarters and five divisional offices.

### A class act

The key to their success? Class. Lots of it. Everything from an immaculately-landscaped headquarters to designer trucks to uniformed,



cleanly-shaven workers. They simply don't allow anything to "touch" their business that doesn't reek of professionalism.

"Everybody wears white shirts and green pants," explains Torre, the younger and more talkative of the duo. "They're on time, they shave in the morning, they have presentable haircuts. If they don't, they're home. That's very important."

When it comes to rule enforcement, Bruglio says his partner is "the hatchet-man." And you believe it.

Their fire-engine-red trucks are hand-painted (some say "Torre & Bruglio—The Dagos") and pin-striped.

Their landscapes are, likewise, picture-perfect. "When we walk away from a job, it's spotless," Torre says.

Things haven't always been as

profitable for Torre & Bruglio; but they've always been exciting.

Torre remembers 1976: "There were just the two of us. The first summer, we did everything by hand. People were saying we were nuts moving dirt with wheelbarrows. But it was a challenge: can we knock out this job today?"

The memories begin to wash over Bruglio's face. "We always tried to outdo ourselves," he reminisces. "People could pick our jobs out. A lot of people couldn't figure out how we got so big so fast. But if they had followed us around, they'd know: we worked our asses off. The first five years, it was seven days a week, sun-up to sun-down."

Some say partnerships are the worst way to organize a business. But it's worked for Torre and Bruglio.

"What has kept us together is that our goal is the same," says Torre. As if to emphasize the point, Bruglio repeats it: "We stand back-to-back on everything."

That doesn't mean agreeing on everything. In the early years, when they won a new job, they would separately plan on how to implement what the client wanted. Then they would compare plans and come up with the best alternatives. It wasn't always easy. "If we both agreed on everything, then one of us shouldn't be here," says Bruglio now, chuckling to himself at the memories.

#### Diversified services

Torre & Bruglio has developed into a full-service landscaping company. It has an architectural department, construction division, maintenance divi-



At Torre & Bruglio, every employee, every piece of equipment is important.

Landscape architect Vince Rampolo (left) goes over some plans with Bob Bruglio (center) and Frank Torre.







## DOUBLE TROUBLE FOR YOUR TURF'S WORST ENEMIES

### ® BAYLETON & ® DYLOX

**Lebanon Total Turf Care** introduces double trouble for turf spoilers: **Lebanon Turf Fungicide** with 1% ®Bayleton Fungicide and **Lebanon Granular Lawn Insecticide** with 5% ®Dylox Insecticide. So effective, most troublemakers will think twice before invading turf protected by Bayleton and Dylox.

**Lebanon Turf Fungicide** with 1% Bayleton is a proven form of preventive control of dollar spot, copper spot, powdery mildew, red thread, rusts, brown patch, anthracnose and other turf diseases.

Bayleton works systemically two ways—through foliar and root uptake. It works inside the plant and rainfall or normal watering won't impair its effectiveness.

The long-lasting residual action of Bayleton—30 days or longer—means fewer applications. That makes **Lebanon Turf Fungicide** with 1% Bayleton one of the most effective and economical fungicides for your turf.

And for grubs, cutworms, sod webworms and other subsurface insects, try **Lebanon Lawn Insecticide** with 5% Dylox. This granular insecticide has the dual advantage of being fast-acting without leaving long-term residue. It effectively controls a wide variety of insect pests, but won't appreciably reduce beneficial insect populations when applied at the normal recommended rate.

### Give your turf double protection.

For more information on **Lebanon Turf Fungicide** with 1% Bayleton, **Lebanon Lawn Insecticide** with 5% Dylox or any of our other premium quality products and services, call our **Greenline** today at 1-800-233-0628; in Pennsylvania, call 717-273-1687.

**Lebanon**  
TOTAL TURF CARE

A division of Lebanon Chemical Corporation  
P.O. Box 180 • Lebanon, PA 17042

BAYLETON and DYLOX are registered trademarks of Bayer AG, Leverkusen.

# KEEPING IT CLEAN

sion and spray division.

Accounts are both commercial and residential, from very large to very small. They include Chrysler, Volkswagen of America, the National Bank of Detroit and Wendy's and McDonald's restaurants. Torre and Bruglio have worked in Michigan, Indiana, Ohio, Illinois and Pennsylvania.

"Our customers seem very satisfied with this service of maintaining their landscaping projects as well as designing them and providing them with worry-free service," Torre admits. The company handles everything, as Torre says, "right down to the last blade of grass."

Both owners make a point to visit key personnel often. They head out of the main building into the modified mobile home that houses the maintenance and spray divisions where Bob Zaccheo and Jim Lendini orchestrate the work of 50 employees. Then they cut across the back lot, trucks smartly aligned, up some steps of an elaborate wooden deck and into the architects' building to visit head architect Vince Rempolo and nurseryman Steve Tinsley. To talk to construction chief Larry Pretzer, they head back to the main building past a pond stocked with trout.

This is a quality home for Torre & Bruglio. "We stand for quality," Torre notes. "We try to teach our people the same thing. We all work together as a family."

The equipment, too, is top quality. A dozen Toro Groundsmaster 72s, Toro and HMC/Green Machine edgers, Jacobsen push mowers with steel decks.

### Steady as she goes

Where growth was unbridled in the past, Torre and Bruglio are now planning for steadier growth. "We're always looking ahead," Bruglio says. "But you have to realize that bigger isn't always better," Torre adds. "Once you've lost control, you've lost everything. It becomes a total zoo."

The only goal they have set for the company is eloquently stated by Bruglio:

"We'd like people to say, 'Those guys are good, they're professional and they're honest.'"

LM

Circle No. 121 on Reader Inquiry Card





## “Our new Toro system will save quite a bit of money for Canyon Country Club”

— **Dick Ameny**, General Manager, Canyon CC, Palm Springs, California

Canyon Country Club is one of the first golf courses to install Toro's new Network 8000™ irrigation control system and Toro's new energy-saving, water-conserving Series 660 sprinklers. They were designed to save water, save energy, save labor — and at the same time actually develop better turfgrass. Has Toro accomplished that? Here's what Dick Ameny says:

- “Our budget is now at \$722,000, rather than at \$863,000.”
- “Our energy cost is going to drop by over 40%.”
- “On top of that, our water costs are going to be reduced by over 30%.”
- “Also, we have been able to reduce our work staff by two people.”
- “In the past, we had an antiquated system, which was a quick-coupler.”

- “Toro is the only company that had a new low-pressure system.”
- “We are going to have a much nicer golf course. Canyon CC now has a beautiful stand of grass — only five weeks old. This is the first time that it has come up this fast and made our course this playable.”
- “We are very pleased with our complete Toro system.”

If you'd like to slash your energy costs, your water bills and your labor . . . and have better grass in the process, just call “The Man from Toro.”

**The Toro Company**  
Irrigation Division  
Dept. WTT-587  
P.O. Box 489  
Riverside, CA 92052



Excellence in Irrigation®





田中記念庭園

**A**  
**TRIBUTE**  
**RATHER THAN A MEMORIAL**  
**TO KANAYE NAGASAWA**

by Heide Aungst, managing editor



# On Design

**K**anaye Nagasawa is a name which few will recognize. Fewer still would recognize his birth-given name: Hikosuke Isonaga. Nagasawa (the name he took when he left feudalistic Japan in 1865) earned a place in Japanese history as a pioneer in the Western world. He is remembered in U.S. history as the "Grape King" of California, a master wine maker.

More people will learn of Nagasawa's place in history when they visit the gardens at Fountaingrove Country Club in Santa Rosa, Calif. Mack and Mark Tabata of Tabata Landscaping Co., Santa Rosa, designed and installed the gardens, "as a tribute to the man, not a memorial."

The entry garden represents Japanese landscape design principles: an idealistic view of nature, not a miniaturized copy of nature. Japanese pine and Japanese cherry trees help achieve this purpose (#3). Developing the site wasn't easy (*before*, #1).

The entire property, including golf course, is 120 acres, but the Tabatas worked on about seven in Phase I of the project. Trenches could not be backfilled with the rocky native soil, so the company imported 4,400 cubic yards of topsoil, sand and pea gravel to backfill and establish the finish grade.

The concept of water as an essential element of life prevails throughout the site. Water can be seen or heard at any spot on the property. The firm used dry creeks purposely to stimulate visitors' imaginations. They meticulously placed more than 3500 tons of rock to create this effect (#4). Extensive use of drought tolerant species, the dry creeks and five miles of drip irrigation minimizes water demand. Other plant material on the site ranges from low-maintenance species to high maintenance color, such as yellow and gold marigolds in focal point areas (#2).

Phase I of the project, completed in August 1986, cost \$490,000. It won the California Landscape Contractors awards for outstanding achievement in design/build and first place for large commercial/industrial sites.





# The Yamaha Terrapro work be

Along with sweating, sore limbs and painfully long days.

Introducing the Yamaha Terrapro™. The first ATV with something extra behind it. A rear-mounted PTO.

Or to be more specific, an ASAE standard, 1-inch, 2,000 rpm PTO which oper-

off your workday.

The Yamaha finish mower has three high-lift cutting blades that slice a full 48-inch swath over lawns, golf courses and grounds.

The Yamaha 42-inch rough-cut mower has an all-purpose rotary cutter that

eats up grass, weeds and light brush. It has high-lift rotary blades and side discharge which keeps the mower clear for a better, faster cut.

Both mowers have an adjust-

able mowing height of 1.5 to 5 inches that you set without needing any tools except your hands.

And because the blades are forged from tough, heat-treated steel, they'll last



*This is the PTO behind the ATV. It helps you get your work done ASAP.*



until the cows come home.

For spraying fertilizers, insecticides, herbicides, fungicides\* or other kinds of industrial liquids, there's the Terrapro System of sprayers made for Yamaha by Broyhill.

They come in 50 and 100 gallon sizes with a versatile hand-held sprayer that lets you get at those hard to



*The Yamaha sprayer with boom will help eliminate insects, fungi, weeds and long days.*

ates a variety of mowers and sprayers.

For example, our exclusive Terrapro System of mowers designed for Yamaha by Woods. They trim hours

*With the Terrapro hand-held sprayer you can spray anything from crops to cattle.*



**\*Warning:** Use of certain chemicals may cause injury and property damage. Read sprayer owner's manual and follow chemical label directions.



# PTO. It puts all your behind you.

The Yamaha Terrapro PTO is an ASAE standard, 1-inch, 2,000 rpm. Translated, that means it's really versatile.



A Yamaha mower trims hours off your workday.

various configurations, so you won't be.

Of course, one of the best parts about the Yamaha Terrapro™ PTO isn't just what's in back. It's what's up front. Like a 349cc, 4-stroke engine that lets you tackle mountains of work. Not to mention mountains.

Or what's below. Like the high-flotation tires that let you go out into the mud.

And come back.

All of which proves that when it comes to helping you get your work done fast, we couldn't be more behind you.

Now the only thing left ahead of you is to call 1-800-331-6060 ext. 685 to find the dealer closest to you.

**YAMAHA**  
We make the difference.™

get places. Around trees. Through fence posts. Under bushes.

For fields and lawns, you can get an efficient 15- or 24-foot boom to eliminate pests, weeds, fungi and sore arms.

Both boom systems have a handy modular design that can be arranged in



Yamaha and the Specialty Vehicle Institute of America encourage you to ride safely and respect fellow riders and the environment. For further information regarding the SVIA rider course, please call 1-800-447-4700. Do not drink and drive. It is illegal and dangerous. Specifications subject to change without notice.



## Learning better sod production from Europe

by Dr. Martin Petrovic, Cornell University

Sod and seed fields represent the backbone of the turfgrass industry's production aspects. Sod demand is so tied to the construction industry that periodic shortages occur, as now in parts of the country.

Several factors have resulted in the recent need for accelerated sod production technology. These are:

1. Shortage of supply brought on by the "construction boom."

2. Increased cost of land and taxes, resulting in higher production cost per acre.

3. Suburbanization pressures on developing land routinely used for sod production.

Accelerating production of sod would mean either more total product could be produced by a given sod grower on the same number of acres (important during a time of shortage) or the same amount of product grown on considerably less land (can spread the per acre cost over more product). Also, if sod could be produced faster, the sod grower might be more willing to grow a wider range of specialized crops of different turfgrass species and/or cultivars.

Normal production time for a cool-season sod is about nine to 18 months. Reducing the production time to less than nine months has seldom been accomplished without the use of netting. Sod production with netting has been cut to about eight weeks. But that method has not been widely used because of its high cost and its difficulty to install before seeding.

Another way to accelerate production could be to use a root impermeable layer system (RILS) which would restrict root growth above the layer.

In this case, sod strength could be developed by the massive root system produced in place of the traditional site of soil strength, namely the secondary stems of the rhizome and/or stolon. This approach has been used commercially in Western Europe by growing sod on a 3/4-inch layer of compacted pine bark mulch on black plastic (Fig. 1).

One sod grower in Ohio proposed the technique more than 10 years ago for a cool-season sod. Research has shown that it is possible to produce a warm-season grass sod in less than 65 days on a four-inch thick organic layer or plastic.

An advantage of using RILS for sod production is that any reasonably level land close to an urban center could be used for production. In addi-



Figure 1: The sod develops an extensive root system.

tion, urban and suburban centers must dispose of organic wastes, like sewage and sludge and leaves. If used in this sod production system, it could provide an attractive economic and environmental alternative to landfills, incineration or land application.

With this in mind, studies were initiated in 1986 by Cornell University to examine the feasibility of the RILS for cool-season sod production. The objectives of these studies were to:

---

### *Reducing sod production time to less than nine months has seldom been accomplished without the use of netting.*

---

● determine how long it would take to produce Kentucky blue or bluegrass-ryegrass mixture sod by RILS vs conventional sod production techniques;

● determine if the season of the year had an effect on the time required to get a harvestable sod by RILS; and

● determine if the physical and chemical properties of the organic medium have an effect on the time of production.

Experiments were conducted during 1986 under both greenhouse conditions and in the field at the Cornell Turfgrass Field Research Laboratory, Ithaca, N.Y.

Under greenhouse conditions the following factors were studied: two temperatures, three rooting media and two seeding mixtures. The temperatures selected would conform to cool conditions of spring and fall (70°F day/60°F night) and warmer summer temperatures (80°F day/70°F night).

Black plastic was used to line flats filled with one of the following organic materials: composted pharmaceutical residue (Lederle Laboratories, Pearl River, N.Y.), composted horse manure/stable waste (Saratoga Organics, Saratoga, N.Y.) or air-dried, aerobically-digested sewage sludge (Groton, N.Y.).

Seed of either straight Kentucky bluegrass (cv. Adelphi) or a mixture of 50 percent bluegrass and 50 percent perennial ryegrass (cv. All\*Star) were mixed into the organic medium. Sod tensile strength and germination were determined periodically over the 90-day period of the study.

Composted horse manure provided the best conditions for germination. Within seven days, 50 percent germination occurred; within 21 days, 100 percent. In comparison, the germination on the other two media ranged from 15 percent to 37 percent after 21 days. These differences in germination also carried over into sod strength (see table 1).

*continued on page 66*



DEEP DOWN TURF PROTECTION WITH

# TURCAM<sup>®</sup>

INSECTICIDE

NOW AVAILABLE IN  
NEW GRANULAR  
FORMULATION



Now you have two choices—TURCAM<sup>®</sup> WP liquid or new TURCAM<sup>®</sup> 2½G granular. Whatever your choice, TURCAM's advanced carbamate chemistry goes right to work knocking down white grubs, mole crickets, chinch bugs, sod webworms and many other destructive pests. TURCAM's federally-approved nationwide label provides these positive benefits...

- Fast action
- Good residual
- Doesn't tie up in thatch
- Easy to apply (liquid or granular)
- Cost-effective
- Odorless
- Doesn't damage turf or ornamentals

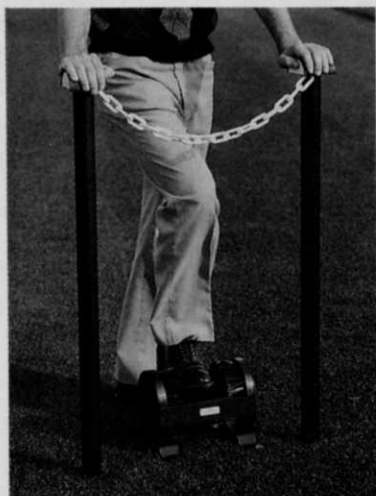
Powerful reasons for assigning TURCAM to your toughest turf pest control problems. For more information on TURCAM, including full labeling and recommendations for use, contact your local distributor or write to...

 **NOR-AM**  
NOR-AM CHEMICAL COMPANY

3509 Silverside Road, P.O. Box 7495, Wilmington, DE 19803

IMPORTANT: Please remember always to read and follow carefully all label directions when applying any chemical.





## SCRUSHER

Scrapes 'em and brushes 'em... the new better way to clean spikes and shoes.

The Scrusher is a must around heavy traffic areas like the clubhouse, locker room entrance, or pro shop. It keeps dirt in its place — outside!

The Scrusher is a heavy duty brush that cleans spikes and sides of the shoe at the same time. The lower brush has three rows of stiff nylon bristles to thoroughly clean spikes. Spaces between the rows of brushes allow grass and dirt to fall through and help keep brushes free from clogging. Side brushes are softer nylon bristle that won't scratch shoes. All brushes are replaceable. Can be mounted on turf or concrete. Posts, chain and mounting spikes optional.

**STANDARD**  
**GOLF** ProLine

Standard Golf Company  
Box 68  
Cedar Falls, Iowa 50613  
(319) 266-2638

See Your Local Standard  
Golf Distributor

SG-148

**Table 1. Days to produce a harvestable sod ( $\geq 3.3$  psi)**

Seed Type*	Organic Medium	Cooler	Warmer
		Temperature (60°F/50°F)	Temperature (80°F/70°F)
100 KBG	Composted horse manure	54-57	68-71
100 KBG	Pharmaceutical residue	68-71	82
100 KBG	Sewage sludge	82	—**
50 KBG:59 RG	Composted horse manure	54-57	54-57
50 KBG:50 RG	Pharmaceutical residue	54-57	54-57
50 KBG:50 RG	Sewage sludge	—*	82

\* 100 KBG (100% 'Adelphi' Kentucky bluegrass, 50 RG (50% 'Allstar' perennial ryegrass)

\*\* A "—" means the sod strength of  $\geq 3.3$  psi was not obtained over the 90 days of the study.

**Table 2. Weeks to produce a harvestable sod ( $\geq 3.3$  psi)**

Seed Type*	Rooting Media	Seeding date, 1986		
		June 18	August 3	September 11
100 KBG	Composted horse manure	17.5	—*	—
100 KBG	Pharmaceutical residue	11.5	7.5	—
100 KBG	Soil	—**	—	—
50 KBG:50 RG	Composted horse manure	10.8	9.0	—
50 KBG:50 RG	Pharmaceutical residue	8.0	5.3	—
50 KBG:50 RG	Soil	—	—	—

\* 100 KBG (100% 'Adelphi' Kentucky bluegrass, 50 RG (50% 'Allstar' perennial ryegrass)

\*\* A "—" means the sod strength of  $\geq 3.3$  psi was not obtained over the course of the study.

Reproduced with Permission

Based on our equipment, a commercially suitable sod should have a strength of at least 3.3 psi. Under either temperature condition, Kentucky bluegrass sod could be produced within 57 days on composted horse manure and between 68 and 82 days on composted pharmaceutical residue. A harvestable sod ( $\geq 3.3$  psi) was produced faster on these two rooting media when a seed mixture of bluegrass and ryegrass was used. Sod production on sewage sludge was found to be slower and was related to a high soluble salt level in the sludge.

Using the greenhouse results, composted horse manure and pharmaceutical residue were tested in the field. Another treatment was included in the field, which was to seed the existing soil (Hudson silty clay loam) and manage it under conventional sod production methods. The time of seeding was used to replace the different temperature greenhouse. Seedlings were made in early summer (June 18), late summer (August 3) and the recommended fall seeding (September 11).

The best time to seed (see table 2) to produce the fastest harvestable sod was late summer (August 3), followed by early summer (June 18). The fall seeding did not result in a harvestable sod. Of the organic rooting media, pharmaceutical residue produced one to six weeks faster than in composted horse manure. None of the seeding in

the soil resulted in harvestable sod in 1986, typical for soil seedings.

The late summer seeding was probably superior to other times for several reasons. First, it was very wet in August and September, which did not result in any drought stress normally experienced in late summer seedings. The fall was also very wet, cool, and winter arrived sooner than normal.

Pharmaceutical residue proved to be a better rooting medium than composted horse manure. This was true primarily because of both better fertility (higher in nitrogen) and waste relations. However, by itself, pharmaceutical residue was too soft for normal mowing equipment and required a fly mower.

Further testing is under way at Cornell to examine different rooting media under larger scale production (five acres). It appears that if mechanization of planting and harvest is done, the RIL System of sod production can either increase the total sod produced on the same acreage or keep the same production amount on less acreage.

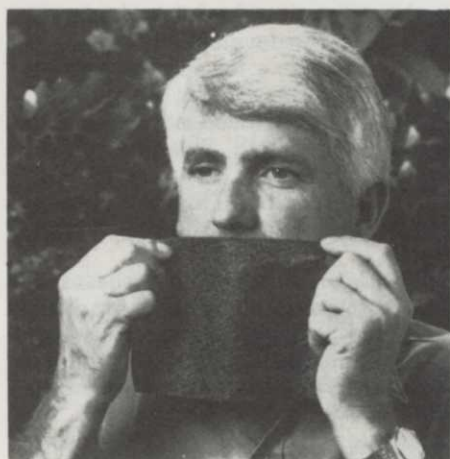
To a consumer or producer of sod, the RIL System might offer a wider selection of sod in terms of species of grass as well as cultivars. The sod grower could have the ability to produce sod to a bid specification and supply "exotic" or more difficult to grow sods of cool season grasses like tall fescue (without bluegrass), perennial ryegrass and bentgrass.



# THIS TEST WON'T HOLD WATER —OR AIR.



*Water passes easily through highly permeable Duon Weed Control Mat.*



*Just blow through Duon to see how easily air passes through it.*

## The proof is stronger, longer lasting plants with **DUON**<sup>®</sup> Weed Control Mat.

Both water and air pass easily through Duon Weed Control Mat, made of Phillips Fibers non-woven polypropylene. As a landscaper, you know how important that is to a plant's root system and to the future well-being of your big landscape jobs—especially those you use as references.

When water and air can't get through, plants die. Black plastic won't work for the long-term. And woven polypropylenes are nowhere near as permeable as nonwovens. For example, the air permeability for nonwoven Duon is about 14 times greater than for woven polypropylenes and the water

permeability for Duon is about 10 times greater.

Put our words to the test. Hold Duon under running water, then take another piece and breathe through it. Then try the same test with a competitive weed control mat.

When covered from sunlight, Duon is virtually permanent. It allows plants to thrive and impedes about 95% of weed growth (in most areas). It also keeps mulch from going down into the soil.

For your quality landscape jobs, order Duon. For further information, call Phillips Fibers (803) 242-6600.

MARKETED THROUGH: 8923 South Octavia  
**Blunk's** Bridgeview, IL 60455  
(312) 430-2025



**PHILLIPS FIBERS CORPORATION**  
A SUBSIDIARY OF PHILLIPS 66 COMPANY

TEXTILE NONWOVEN FABRICS MARKETING  
P. O. BOX 66, GREENVILLE, SC 29602  
(803) 242-6600

\*Trademark Phillips Petroleum Company



# PROBLEM MANAGEMENT

by Balakrishna Rao, Ph.D.

## Pruning azaleas

**Problem:** We need some guidelines for timing and proper methods of pruning azaleas in Georgia. We have to deal with small to large, overgrown plants in different places. (Georgia)

**Solution:** By proper and selective pruning, the size, appearance and flowering can be improved, and diseased plant parts can be removed. When azaleas are not pruned on schedule, they often tend to produce long stems without many branches and flowers. This can be corrected by "heading back" (reducing in length) and encouraging the development of several side branches. The ideal time for such pruning is soon after flowering to produce strong branching.

These plants should be fertilized and watered as needed to stimulate new growth. This new growth can be "tip pruned" (pinched) by early July so it can produce more lateral branches. This method will produce compact plants which will produce more flowers.

Dead and dying branches due to diseases or winter kill should be removed. For smaller branches use hand pruners, and for larger branches use lopping shears. Cut back into healthy tissues. For larger wounds, application of wound dressing materials may be beneficial.

When plants grow too fast and overgrow the desirable size, or when planning to move large plants to another location, they should be pruned properly to maintain their size and shape. Species of azaleas, like Southern Indian (Indica or Formosa type), grow fast and may require severe pruning. To minimize shock, severe pruning should be done three to four weeks before blooming. The growth produced after this can be further pruned to develop a compact growing plant. Small azaleas should be pruned several times during the growing season to produce a nice compact plant. Maintain good fertilization, watering, and pest management programs to ensure good growth and flowering.

## Turf in shade

**Problem:** What would be the best way to establish turf under large trees such as maple or oak? Is it better to cut roots and put down soil and seed or simply topdress with soil on existing roots and then seed? Which would be better? (Ohio)

**Solution:** The two basic problems are shade and lots of surface-growing roots. Growing turf under trees, like maple and oak that have dense canopies, is possible. Selectively thinning the tree canopy will allow enough sunlight to penetrate through the tree to the grass beneath. Even a slight increase in sunlight may be enough to allow the turf to grow and remain reasonably thick. This process will have to be repeated every few years if the tree is a fast grower and fills in the open spaces.

If pruning the tree still doesn't provide enough sunlight to sustain turfgrass, then a shade-tolerant

ground cover should be used in place of grass underneath the tree. Trees that develop surface-growing roots are doing so because of compacted soil and/or poor drainage.

Oxygen is the prime limiting factor in determining depth of root growth. Compacted or wet soils do not have the oxygen-holding capacity to allow roots to grow beyond a few inches of the soil surface. Cutting the roots will only result in more surface roots developing later. Topdressing will further stress the tree by suffocating the sensitive feeder roots.

As little as one inch of soil over the root system can kill the entire tree. Surface rooting is the symptom of a problem, so cutting the roots or topdressing with soil is only a temporary solution. Aerifying the soil with a coring machine or an auger will allow oxygen and water, as well as the root system, to penetrate deeper into the soil horizon. Not only will the growing conditions of the tree be improved, but it will also be easier to maintain turf underneath a tree without surface roots.

## Tall fescue seeding

**Problem:** We seeded some lawns under shady conditions with a good mixture of certified tall fescue seeds around the second week of September last year. Seeding was done with an aro-seeder and lawns were well watered after seeding and during establishment. However, we are seeing a large number of 3/4-inch bare spots now. Will these areas fill in? Do we have to reseed now? Is it better to wait till spring? (Ohio)

**Solution:** Since you have used certified seeds with a good percentage of germination and used an aro-seeder, you should have obtained good results. Several possibilities exist as to the cause of the problem you are experiencing. If the soil was not prepared well, some of the tree roots might have prevented proper seeding and establishment.

Another possibility might be that seeds were washed off or rotted, or the area remained dry at times. Tall fescues spread slowly by producing tillers, which grow laterally, resulting in a bunch-type growth habit. Because of this growth habit, 3/4-inch bare spots may not fill in for a long time. To correct the situation you can consider dormant overseeding, or better yet, wait until spring and see how much of an area may need reseeding and then overseed. Maintain good watering throughout the germination and establishment period for better results.



Balakrishna Rao is Director of Lawn Care Technical Resources for The Davey Tree Co., Kent, Ohio.

Questions should be mailed to Problem Management, Landscape Management, 7500 Old Oak Boulevard, Cleveland, OH 44130. Please allow 2-3 months for an answer to appear in the magazine.



# HOW TO TELL IF YOUR COMMERCIAL MOWER IS BUILT FOR A LONG LIFE



There is a simple way to be sure your commercial mower is designed for a long life, and is built to achieve it.

## Buy Bunton

to be sure your mowers have welded one-piece steel construction, lubrication points at each moving part, pneumatic puncture resistant tires and more.

## Specify 2-cycle

for an engine that often provides 4 seasons of hard commercial use without major maintenance (2 season warranty), as much torque from an 8 hp as with an 11 hp 4-cycle, the piece of mind provided by taking the critical engine lubrication function out of the hands of your operators, and a cost competitive with the most popular 4-cycle engines.

## Use the System

that puts your key equipment on the same fuel/oil mixture, with Bunton trimmers, backpack blowers and mowers.



Bunton builds 'em better.  
**BUNTON CO.**

P.O. Box 33247  
Louisville, KY 40232  
502/966-0550  
Telex: 204-340

GSA No.: GS-07F-13196



# BOOKSTORE



**345 - COST DATA FOR LANDSCAPE CONSTRUCTION 1987**  
*Kathleen W. Kerr, Editor*  
 An updated unit cost data reference for designers and cost estimators. Developed to fill the tremendous need for detailed landscape construction cost data. Laid out in easy-to-use CSI format. Annual **\$32.00**

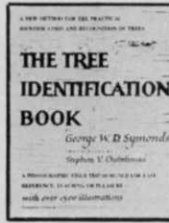
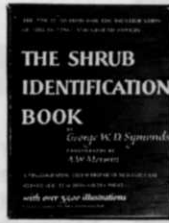
**350 - HANDBOOK OF LANDSCAPE ARCHITECTURAL CONSTRUCTION**  
*edited by Jot Carpenter*  
 A practical how-to reference on landscape construction. Published by the Landscape Architecture Foundation, the book carries the expertise of more than 25 landscape professionals. **\$45.00**

**300 - LANDSCAPE DESIGN: A PRACTICAL APPROACH**  
*by Leroy Hannebaum*  
 Geared for the commercial designer/salesperson, this is a one-stop guide to the landscape design process. Covers the entire highly competitive field including design analysis techniques, pointers on land forms, specialized business landscaping methods, environmental design guidelines, specifications, estimations, bids. **\$33.95**

**370 - LANDSCAPE OPERATIONS: MANAGEMENT, METHODS & MATERIALS**  
*by Leroy Hannebaum*  
 An in-depth examination that combines technical training in landscape science with methods of accounting, business management, marketing and sales. Discusses effective methods for performing lawn installations, landscape planting and maintenance. Step-by-step accounting calculations are explained in simple terms. **\$31.95**

**365 - LANDSCAPE PLANTS IN DESIGN**  
*by Edward C. Martin*  
 An annotated photographic guide to the design qualities of ornamental plants and their aesthetic and functional use in landscape designing. Over 600 trees, shrubs, vines, ground covers and turfgrasses are described in nontechnical language. Over 1900 photographs. Provides a basis for selecting the best plant materials for any particular use in landscape design. Contains detailed indexes that provide quick reference to particular design qualities and growing conditions. **\$55.00**

**375 - RESIDENTIAL LANDSCAPES**  
*by Gregory M. Pierceall*  
 An excellent reference for individuals involved in the design and development of plantings and constructed features for residential sites. Illustrations and actual residential case study examples are used to communicate graphic, planning and design concepts which are the focus of this text. **\$36.95**



**665 - ARBORICULTURE: THE CARE OF TREES, SHRUBS AND VINES IN THE LANDSCAPE**  
*by Richard W. Harris*  
 Provides comprehensive coverage of complete planting, site analysis, preparation and special planting methods, fully detailed coverage of fertilization, irrigation and pruning guidelines on preventative maintenance, repair and chemical control, how-tos of diagnosing plant problems, practical data on non-infectious disorders, diseases, insects and related pests and pest management. **\$47.95**

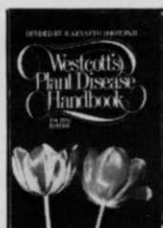
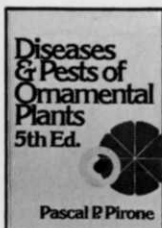
**720 - SHRUB IDENTIFICATION**  
*by George Symonds*  
 Pictorial key to identify shrubs. Contains more than 3,500 illustrations to check specimens. Popular and botanical names are given for each shrub and handy index tabs for quick reference. **\$12.95 paperback**

**750 - TREE IDENTIFICATION**  
*by George Symonds*  
 Pictorial reference to identifying trees by checking leaves, buds, branches, fruit and bark. Like its sister publication, SHRUB IDENTIFICATION, popular and botanical names are listed with index tabs for easy reference. **\$14.95 paperback**

**760 - TREE MAINTENANCE**  
*by Pascal Pirone*  
 The fourth edition of this guide for anyone involved in the care and treatment of trees. Special sections on tree abnormalities, diagnosing tree troubles, non-parasitic injuries and assessing the suitability of different trees. **\$49.95**

**565 - WEEDS**  
*by Walter Muenscher*  
 Second edition. Premier text for identification and basic natural history for seeds found in the continental United States and Canada. Ecological data on weed biology combined with excellent keys and plant descriptions make this an essential reference book. **\$39.95**

**405 - WOODY ORNAMENTALS**  
*by Partya, Joyner, Rimelspach, Carver*  
 Illustrates plant identification characteristics. Organized in two basic sections: plant identification and plant disorders, this text utilizes 430 color photos, 430 line drawings and 45 black and white photos to simplify identification. **\$32.50**



**410 - DISEASES & PESTS OF ORNAMENTAL PLANTS**  
*by Pascal Pirone*  
 This standard reference discusses diagnosis and treatment of diseases and organisms affecting nearly 500 varieties of ornamental plants grown outdoors, under glass or in the home. Easy to understand explanations of when and how to use the most effective fungicides, insecticides and other control methods. **\$34.95**

**690 - INSECTS THAT FEED ON TREES AND SHRUBS**  
*by Johnson and Lyon*  
 Essential information for identifying more than 650 insect pests and the injuries they cause. More than 200 color illustrations. **\$49.50**

**570 - WESTCOTT'S PLANT DISEASE HANDBOOK**  
*by Kenneth Horst*  
 This fourth edition offers professionals the latest diagnostic and disease control information. Plant entries designed to simplify diagnosis, plus background on the classification of plant pathogens. This handbook gives a specific description of each disease, susceptible plants, specific symptoms of the disease, reported locations and control measures for each disease and their side effects. **\$41.95**



# BOOKSTORE

## 010 - ADVANCES IN TURFGRASS PATHOLOGY

by Joyner and Larsen  
Leading U.S. turf pathologists report on turfgrass diseases, pythium blight, snow molds, fairy rings, leaf spot of Kentucky bluegrass in Minnesota, initial and field fungicide screening, turfgrass disease resistance, etc. Contains new ideas on how to combat turfgrass problems. **\$27.95**

## 220 - CONTROLLING TURFGRASS PESTS

by Shurtleff, Ferriarman, Randell  
New comprehensive guide provides the most up-to-date information available on the identification, biology, control and management of every type of turfgrass pest. Covers weeds, insects, animal pests and diseases in detail. Also provides information on cultural management practices: the establishment, care and renovation of low-, medium-, and high-maintenance turf areas. 50 color and 400 black and white photographs. **\$27.95**

## 654 - MANAGEMENT OF TURFGRASS DISEASES

by J.M. Vargas  
Identifies turfgrass diseases by description and illustration. Includes a holistic approach to healthy turf and lawns. Presents practical management strategies for golf courses, lawns and athletic fields. 204 pages, illustrated. **\$26.70**



## 615 - TURF MANAGEMENT FOR GOLF COURSES

by James Beard  
Written by an eminent turfgrass researcher, this USGA sponsored text is an ideal reference and "how to" guide. Details all phases of golf course design and construction, turf management, course administration, irrigation, equipment and disease and pest control. Fully illustrated. **\$52.75**

## 620 - TURF MANAGEMENT HANDBOOK

by Howard Sprague  
Practical guide to turf care under both healthy and poor turf conditions. Chapters cover turf in cooler and warmer regions, fertilizer use, regular turf care, weed and disease control and special turf problems. Useful seasonal schedules for management of turf areas. **\$19.00**

## 110 - TURF MANAGERS' HANDBOOK Second Edition

by Daniel and Freeberg  
ENTIRELY UPDATED. A practical guide for the turf practitioner. Chapters on grasses, growth regulators and diseases have had extensive modification. Innovations resulting from research and practice have been added to reflect the current techniques available for turf managers. Offers recommendations for effective turf protection through integrated pest management. Included are alternate plans for providing and improving safe, uniform turfgrass for sports fields. Outline format plus newly added index make this new edition easier to use and a more comprehensive approach to turfgrass science. **\$32.95**

## 225 - TURFGRASS MANAGEMENT

Revised edition. Covers the latest developments in turfgrass science and technology. Heavily illustrated with dozens of new drawings. Provides specific recommendations for applying the newest pesticides, fertilizers and other materials to combat turfgrass problems. A valuable reference for diagnosing problems and determining their causes. **\$32.95**

## 630 - TURFGRASS: SCIENCE AND CULTURE

by James Beard  
Comprehensive basic text and reference source used in many leading university turf programs. Includes findings of current research compiled from more than 12,000 sources. **\$34.95**

## 640 - TURF IRRIGATION MANUAL

by James Watkins  
A guidebook for engineers, architects, designers and contractors. Keeps pace with the latest developments in turf and landscape irrigation. Specific chapters devoted to rotary sprinkler design systems. Golf course design systems and expanded engineering and reference material. **\$23.95**

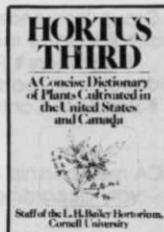


## 800 - THE GOLF COURSE

by Cornish and Whitten  
The first book ever to give the art of golf course design its due, and golf course architects the credit and recognition they deserve. 320 pages and 150 color and black and white photographs. Traces the history and evolution of the golf course, analyzes the great courses, shows how they were designed and constructed. **\$35.00**

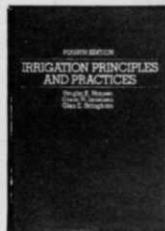
## 510 - HORTUS THIRD

from Cornell University  
A 1,300 page concise dictionary of plants cultivated in the United States and Canada. A reference which every horticulture professional should have. **\$125.00**



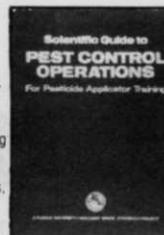
## 635 - IRRIGATION PRINCIPLES AND PRACTICES

by Hansen, Israelsen, Stringham  
A new fourth edition of this highly successful textbook presents essential concepts pertaining to water conveyance, application, storage in the soil and use by plants. Basic underlying principles that govern irrigation practices are stressed. **\$57.00**



## 125 - SCIENTIFIC GUIDE TO PEST CONTROL OPERATIONS

by Truman, Bennett, Butts  
Provides a sound basis for studying the technical aspects of pest control. Covers pesticides, safety, health and environmental concerns, equipment, flies and mosquitoes, rats and mice, birds and much more. **\$35.00**



Mail this coupon to: Book Sales

Harcourt Brace Jovanovich Publications  
One East First Street, Duluth, MN 55802

Name \_\_\_\_\_

Street Address \_\_\_\_\_

P.O. Box Number \_\_\_\_\_

City/State/Zip \_\_\_\_\_

Phone Number (\_\_\_\_) \_\_\_\_\_

Purchase Order Number \_\_\_\_\_

Signature \_\_\_\_\_ Date \_\_\_\_\_

Please send me the following books. I have enclosed payment\* for the total amount.

Please charge to my Visa, MasterCard or American Express (circle one)

Account Number \_\_\_\_\_ Expiration Date \_\_\_\_\_

BOOK NUMBER AND TITLE	QUANTITY	PRICE	TOTAL PRICE

\*Please add \$3.00 per order plus \$1.00 per additional copy for postage and handling.

Please allow 6-8 weeks for delivery.

Prices subject to change.

Quantity rates available on request.

(postage & handling)

Total Enclosed \_\_\_\_\_

LM



Turfco's light and rugged  
**Turf Cutter**

- Self-Propelled
- Low Initial Cost
- Easy to Operate
- Less Service



Only 140 lbs. but rugged enough for all types of turf. Cuts 12" wide, 3/4" to 1 1/4" thick at up to 75 fpm. The lowest cost turf cutter in its class features a high speed oscillating blade that keeps vibration at a minimum; ease of handling; one-lever, no-adjustment operation; and minimal maintenance.

**TURFCO MFG., INC.**  
 3456 N. Washington Ave.  
 Minneapolis, MN 55412-2688

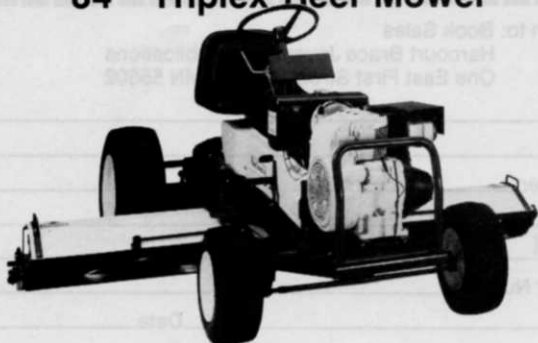
Write for  
 detailed  
 literature

Ph. 612/588-0741  
 Telex 5106013762

**TURFCO**

Circle No. 148 on Reader Inquiry Card

**National**  
 84" Triplex Reel Mower



- **Superior Quality of Cut** with National's 6 bladed reels
- **Performance & Durability** with National's rugged design
- **Excels on Hills & Slopes** with National's low center of gravity

**Features**

- 12 hp Kohler
- 8 mph transport speed
- heavy duty rollers
- long life bed knives
- 84" cutting width



**NATIONAL MOWER COMPANY**  
 SINCE 1919 700 Raymond Avenue  
 St. Paul, Minnesota 55114  
 (612) 646-4079

WRITE OR CALL TODAY!

Circle No. 132 on Reader Inquiry Card

**EVENTS**

**MAY**

**American Horticultural Society Annual Meeting**, May 13-16, Omni Park Central Hotel, New York City, N.Y. Contact: Harriet Sweeney, AHS, P.O. Box 0105, Mt. Vernon, VA 22121; (703) 768-5700.

**Western Chapter, International Society of Arboriculture Annual Conference**, May 15-18, Santa Cruz Holiday Inn, Santa Cruz, Calif. Contact: Donald F. Blair, 1958 Latham St., Mountain View, CA 94040; (415) 967-4676.

**North Carolina Turf & Landscape Field Day**, May 20, NCSU Turf Field Center, Raleigh, N.C. Contact: J.M. DiPaola, Box 7620, North Carolina State University, Raleigh, NC 27695-7620; (919) 737-2657.

**JUNE**

**Northern Michigan Turf Managers Association M.T.F. Benefit Day**, June 8-17, Treetops Golf Course, Sylvan Resort, Gaylord, Mich. Contact: Tom Reed, N.M.T.M.A., 37333 Apollo Dr., Traverse City, MI 49684.

**Arboriculture II Training Course**, Warrenbrook Golf Course, Warren, N.J. Contact: William R. Oberholtzer, Cook College, Rutgers University, P.O. Box 231, New Brunswick, NJ 08903; (201) 932-9396.

**Kentucky Cemetery Association Meeting**, June 11-13, Ashland, KY. Contact: George W. Little, Jr., P.O. Box 43445, Louisville, Ky 40243; (502) 245-5996.

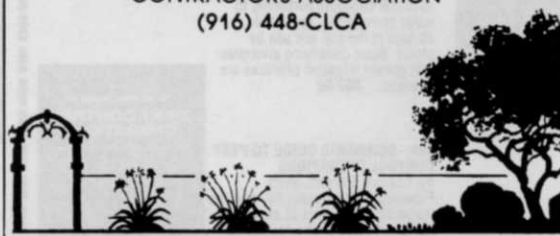
COME GROW  
 WITH US.

Take advantage of these Benefits when you join the California Landscape Contractors Association:

- Group Insurance
- Project Referrals
- Professional Identification
- Industry Contacts
- Trophy Awards
- Seminars
- Publicity
- Timely Information
- Educational Tools
- Expert Advice
- Advertising Aids
- Standard Contract Forms
- Political Advocacy
- Certification.

CLCA membership fees are surprisingly low, and they vary according to the size of your business.

CALIFORNIA LANDSCAPE  
 CONTRACTORS ASSOCIATION  
 (916) 448-CLCA



Circle No. 137 on Reader Inquiry Card



Surflan. Roundup. Mix them together, and you've got control that knocks weeds down and keeps them down. Three times longer, in fact, than Roundup alone.

That's what landscapers all across the country are now finding. They are getting better weed control and more satisfied customers. And they're saving time and labor costs because they're applying just once.

With a Surflan/Roundup tank-mix, you get complete control of over 50 different weeds—including such tough species as crabgrass, barnyardgrass, chickweed, spurge, johnsongrass and

foxtail. And Surflan won't harm your nearby landscaped areas, either. It works with little or no lateral movement.

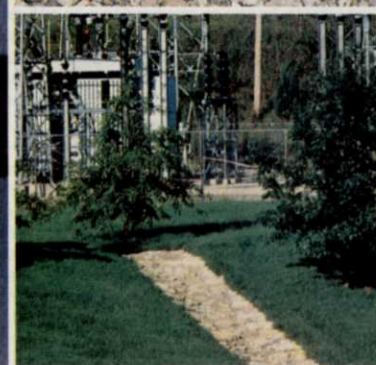
Join the growing list of satisfied users. Add Surflan to your Roundup and stretch your weed control three times longer. See your Elanco distributor for Surflan. Or call toll-free: 1-800-ELANPRO. In Indiana, call collect: 317-261-6102.

Elanco Products Company  
A Division of Eli Lilly and Company  
Lilly Corporate Center  
Dept. E-455, Indianapolis, IN 46285, U.S.A.  
Surflan®—(oryzalin, Elanco Products Company)  
Roundup®—(glyphosate, Monsanto)



Circle No. 113 on Reader Inquiry Card

**“I can control weeds three times longer just by adding Surflan® to my Roundup.®”**





# CLASSIFIEDS

**RATES:** \$1.00 per word (minimum charge, \$25). Bold face words or words in all capital letters charged at \$1.25 per word. Boxed or display ads: \$85 per column inch-1x (one inch minimum); \$80-3x; \$75-6x; \$70-12x. Agency commissions will be given only when camera-ready art is provided by agency. For ads using blind box number, add \$5 to total cost of ad. Send ad copy with payment to Dawn Nilsen, LANDSCAPE MANAGEMENT, 1 East First Street, Duluth, MN 55802 or call 218-723-9200.

**BOX NUMBER REPLIES:** Mail box number replies to: LANDSCAPE MANAGEMENT, Classified Ad Department, 1 East First St., Duluth, MN 55802. Please include box number in address.

## BUSINESS OPPORTUNITIES

Excellent business opportunity in northwest Montana, near Glacier National Park. Owners desiring to retire from rapidly expanding bluegrass sod farm. High return on investment; high potential for future growth. Negotiable terms with owner financing. Send letter of interest to: Sod Farm, P.O. Box 2401, Kalispell, MT 59903, or call 406-755-6655. TF

**WANT TO BUY OR SELL** a golf course? Exclusively golf course transactions and appraisals. Ask for our catalog. McKay Golf and Country Club Properties, 15485 N. East Street, Lansing, Michigan 48906. Phone (517) 484-7726. TF

Well established residential/commercial landscaping/nursery business, Central Iowa. Inventory, equipment, real estate and present accounts included. Owner will train. V. R. Business Brokers, 515-224-0100. 5/87

## HELP WANTED

**FOREMAN POSITION** available in a growing landscape care company for a motivated individual who has experience working with pesticides. Full-time year round, in South Hampton, NY. Call 516-283-8075. 5/87

Landscape maintenance sales position available for energetic, self-motivated individual. Education in agricultural related field and/or sales experience preferred. Base salary plus commission. Send resume/work history to Sales Manager, Maintain, Inc., 16008 Boss Gaston, Richmond, TX 77469. 5/87

**PROJECT MANAGER:** Excellent opportunity for career and goal oriented individual to work with a commercial landscape firm in Atlanta, Georgia. Must be experienced in all aspects of landscape construction and willing to assume total responsibility. Good salary, benefits and incentive program. Scapes, Inc., 404-956-7500. 5/87

**LANDSCAPE INSTRUCTOR:** Dept. of Golf Course and Landscape Operations - Teach all plant materials courses, landscape installation and maintenance, landscape design, help supervise summer on-job-training. M.S. degree in horticulture, plant science, or similar plus practical industry experience. Familiarity with plants of S.E. U.S. desired. Salary based on qualifications and experience. Deadline: Open. Contact Lake City Community College, Rt. 3, Box 7, Lake City, FL 32055, (904) 752-1822 ext. 313. AA/EO EMPLOYER. 5/87

Top turf equipment house needs a quality sales person with good agronomical background in fertilizer and chemicals for fine turf areas, mechanical aptitude, hands on experience with all types of turf products, sales and marketing experience in territory sales and management. Excellent opportunity for qualified person. Resume and qualified references required, P.O. Box 22628, Houston, Texas 77227. 5/87

**LANDSCAPE MAINTENANCE FOREMAN:** Expanding landscape firm, in the Boston MA area is looking for responsible foreman to do quality commercial maintenance. Experience should include complete knowledge of turf, bed-care, and ornaments. Year round full time position. Excellent salary and full company benefits. Send resume to G.S.G. Corp., P.O. Box 2071, Framingham, MA 01701. 5/87

Fleet Superintendent/Equipment Coordinator to perform maintenance on diesel/gas equipment 80 h.p. to 1 h.p. and coordinate the use of equipment for a grounds maintenance service company throughout the state of Florida. Please send resume to Quandt-Ayer Enterprises, P.O. Box 271880, Tampa, FL 33688. 5/87

**MANAGEMENT:** Ever-Green Lawns Corporation, a division of the multi-national Hawley Group, Ltd. is looking for experienced lawn and tree care professionals. Please respond in writing only to Richard D. Niemann, Corporate Recruiter, Ever-Green Lawns Corp., 1390 Charlestown Industrial Drive, St. Charles, MO 63303. TF

**LANDSCAPE MAINTENANCE FOREMAN NEEDED:** Expanding commercial landscape maintenance firm servicing Dallas/Ft. Worth areas. Knowledge of industry a must. Send resume to: **GROUND TECH INC.**, 2036 Bedford Road, Bedford, Texas 76021. 5/87

**LANDSCAPE CONSTRUCTION FOREMAN:** Excellent opportunity for a hard working individual to work with an expanding commercial landscape contractor in the Boston, MA area. Must be experienced in all phases of landscape construction. Year round full time position. Good salary and full company benefits. Send Resume to G.S.G. Corp., P.O. Box 2071, Framingham, MA 01701. 5/87

## HELP WANTED

### Assistant Managers & Foremen

Excellent growth opportunity with Connecticut's largest landscaping firm. Complete Interior and Exterior Construction and Maintenance Departments. Candidates should have an "A.S." or "B.S." in Horticulture or equivalent in experience also two years experience supervising and motivating people. Excellent company benefits. Salary commensurate with experience. Send resume with education, experience, and salary history in confidence to:



**MILFORD LANDSCAPING & MAINTENANCE, INC.**

P.O. BOX 2-186  
MILFORD, CT 06460  
203-878-8748

Landscape Maintenance Salesperson position available with Yardmaster, Inc. in Cleveland, Ohio. Excellent compensation plan and benefits. Join Ohio's largest design/build and maintenance firm. Send resume or call **YARDMASTER, INC., 1447 N. RIDGE RD., PAINESVILLE, OH 44077, 216-357-8400.** 6/87

Established 76 year old complete landscape and tree service firm has positions available for tree climbers and landscape foreman. Send resume to Chas. F. Irish Co., Inc., 24900 Groesbeck Hwy., Warren, MI 48089. 6/87

**OUTSTANDING OPPORTUNITIES FOR ARBORISTS** with sales experience to join rapidly growing, full-service tree care company. All benefits and incentives. Call or send resume to **SAV-A-TREE OF WESTCHESTER**, c/o Daniel Van Starrenburg, P.O. Box 527, Armonk, NY 10504. 914-666-8202. 5/87

**LANDSCAPE MAINTENANCE** - progressive Washington, D.C. area landscape firm is looking for responsible working foremen & trainees to join our Maintenance Department. Our Maintenance Program consists of 2-3 man crews doing residential tree, shrub & bed care with an emphasis on quality. Openings also in our installation department. We work a 4-5-day week and offer good pay and benefits. Willingness to work hard and produce is essential. Send resume and references to: **GARDEN GATE LANDSCAPING, INC.**, 821 Norwood Road, Silver Spring, MD 20904. 6/87

**TREE AND SHRUB CARE.** America's fastest growing tree and shrub company seeking experienced, aggressive horticulturists for existing and expansion markets. Experience, degree and motivation key ingredients. Management, sales and specialist positions available. Tremendous advancement opportunities. Excellent salary, benefits. All inquiries will be strictly confidential. Send resume, salary history to: Wm. Scott Carr, Tru Green Tree & Shrub Care, 2360 Jolly Road, Okemos, MI 48864. **EXPAND YOUR POTENTIAL WITH AN INDUSTRY LEADER.** 5/87

Landscape Maintenance Foreman to provide quality service on award winning landscapes. Join a strong team of professionals in setting the pace for quality craftsmanship. Reply to Joan Hickman, P.O. Box 9454, Naples, FL 33941. (813)597-8136. 5/87

Landscape Architects/Supervisors (project foremen) to join a nationally acclaimed firm looking to expand into its second generation Long Island area supports a high budget landscape industry. Year round employment, company benefits and continuing education available. Experienced and aggressive people send resume to: **GOLDBERG & RODLER, INC.**, 216 East Main Street, Huntington, New York 11743. 10/87

**GOLF COURSE/TURF INSTRUCTOR (ANTICIPATED):** Masters degree in agronomy, horticulture, plant science, or similar; minimum of two years' practical experience with a golf course, preferably in supervisory capacity; must have a working knowledge of golf course operations. Salary: Negotiable, based on qualifications and experience. Deadline: Open. Contact Lake City Community College, Rt. 3 Box 7, Lake City, FL 32055, (904)752-1822 ext. 313. EA/EO EMPLOYER. 5/87

**LANDSCAPE MAINTENANCE FOREMAN:** Firm needs individual able to supervise and motivate own crew. Candidate must know plant materials and standard horticulture practices. Position offers excellent growth potential and salary commensurate with experience. For more information, call American Lawn Care Company, Niles, IL. 312-965-2427. 5/87

**OLD WESTBURY GARDENS** is seeking a qualified Grounds Maintenance Supervisor and an Arborist. A.S. or B.S. in Horticulture or related field and two years experience required. Salary commensurate with experience. Attractive benefit package available. Contact: Robert E. Bowden, P.O. Box 430, Old Westbury, New York 11568. 5/87

**Manager/Sales Rep.** North Jersey tree expert co. seeks responsible, experienced, sales oriented branch manager. Learn area and meet clients as Tree Spray Foreman beginning April 1 - \$10.00/hr. Full scale operation begins July 15th. Excellent compensation for right individual. Send resume & salary history to LM Box 423. 5/87



Circle  
the  
Reader  
Service  
numbers  
of those  
items of  
interest  
to you.

For fastest response, use the peel-off label from the front cover.

NAME \_\_\_\_\_

TITLE \_\_\_\_\_

FIRM \_\_\_\_\_ **PLACE COVER LABEL HERE** \_\_\_\_\_

ADDRESS \_\_\_\_\_ **PRINT PHONE NUMBER BELOW** \_\_\_\_\_

CITY \_\_\_\_\_

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

TELEPHONE (        ) \_\_\_\_\_

101	115	129	143	157	171	185	199	213	227	241	255	269	283	297	311	325
102	116	130	144	158	172	186	200	214	228	242	256	270	284	298	312	326
103	117	131	145	159	173	187	201	215	229	243	257	271	285	299	313	327
104	118	132	146	160	174	188	202	216	230	244	258	272	286	300	314	328
105	119	133	147	161	175	189	203	217	231	245	259	273	287	301	315	329
106	120	134	148	162	176	190	204	218	232	246	260	274	288	302	316	330
107	121	135	149	163	177	191	205	219	233	247	261	275	289	303	317	331
108	122	136	150	164	178	192	206	220	234	248	262	276	290	304	318	332
109	123	137	151	165	179	193	207	221	235	249	263	277	291	305	319	333
110	124	138	152	166	180	194	208	222	236	250	264	278	292	306	320	334
111	125	139	153	167	181	195	209	223	237	251	265	279	293	307	321	335
112	126	140	154	168	182	196	210	224	238	252	266	280	294	308	322	336
113	127	141	155	169	183	197	211	225	239	253	267	281	295	309	323	337
114	128	142	156	170	184	198	212	226	240	254	268	282	296	310	324	338

**LANDSCAPE  
MANAGEMENT**

**MAY 1987**  
This card expires  
July 15, 1987

MY PRIMARY BUSINESS AT THIS LOCATION IS:  
(PLEASE CHECK ONE ONLY IN EITHER  
A, B OR C)

**A. LANDSCAPING/GROUND CARE AT ONE OF THE  
FOLLOWING TYPES OF FACILITIES:**

- 0005  Golf courses  
 0010  Sport complexes  
 0015  Parks  
 0020  Rights-of-way maintenance for highways, railroads & utilities  
 0025  Schools, colleges & universities  
 0030  Industrial & office parks/plants  
 0045  Condominiums/apartments/housing developments/  
hotels/resorts  
 0050  Cemeteries/memorial gardens  
 0060  Military installations & prisons  
 0065  Airports  
 0070  Multiple government/municipal facilities  
 Other type of facility (please specify) \_\_\_\_\_

**B. CONTRACTORS/SERVICE COMPANIES/CONSULTANTS:**

- 0105  Landscape contractors (installation & maintenance)  
 0110  Lawn care service companies  
 0125  Landscape architects  
 0135  Extension agents/consultants for horticulture  
 Other contractor or service  
(please specify) \_\_\_\_\_

**C. SUPPLIERS:**

- 0205  Sod growers  Other supplier (please specify)  
 0210  Dealers, Distributors \_\_\_\_\_

Approximately how many acres of vegetation do you  
maintain or manage? \_\_\_\_\_

What is your title? (please specify) \_\_\_\_\_

I would like to receive (continue receiving)  
**LANDSCAPE MANAGEMENT** each month: YES  NO

Your Signature: \_\_\_\_\_ Date: \_\_\_\_\_





**BUSINESS REPLY MAIL**  
FIRST CLASS PERMIT NO. 665 DULUTH, MINNESOTA

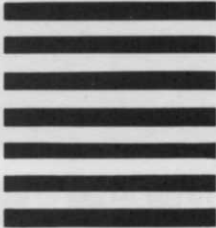
POSTAGE WILL BE PAID BY ADDRESSEE

READER SERVICE DEPARTMENT

**LANDSCAPE  
MANAGEMENT**

POST OFFICE BOX 6049  
DULUTH, MINNESOTA 55806-9749

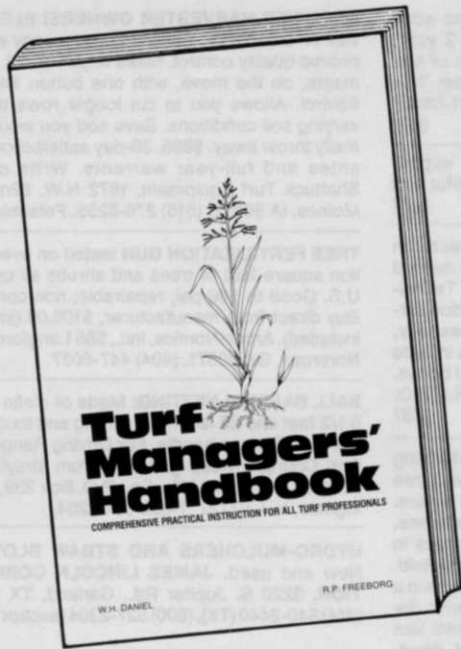
NO POSTAGE  
NECESSARY  
IF MAILED  
IN THE  
UNITED STATES



**GET  
MORE  
FACTS**







New Edition!

# Turf Managers' Handbook

by W.H. Daniel and R.P. Freeborg

**\$32.95\***

A Practical Guide for the Turf Practitioner.

Entirely updated, this new edition of an industry standard is one no turf professional should be without!

You'll get:

- Extensive modifications to chapters on grasses, growth regulators and diseases
- Innovations resulting from research and practice reflecting current turf techniques
- Recommendations for effective turf protection through integrated pest management
- Alternate plans for providing and improving safe, uniform turfgrass for sports fields
- Newly added index

**ORDER YOUR NEW EDITION TODAY!**

Return this coupon to: **HBJ Publications, ATTN: BOOK SALES**  
**1 E. 1st St., Duluth, MN 55802**

Please send me \_\_\_\_\_ copies of the new **TURF MANAGERS' HANDBOOK** at **\$32.95\*** each.

My payment is enclosed. (International: Payable in U.S. Funds in U.S.A.)

\*Add \$3.00 per order plus \$1.00 for each additional copy for postage and handling.

Charge to my VISA, MASTERCARD or AMERICAN EXPRESS (circle one)

Account Number \_\_\_\_\_ Expiration Date \_\_\_\_\_

Signature \_\_\_\_\_ Date \_\_\_\_\_

Name (please print) \_\_\_\_\_

Street Address \_\_\_\_\_

City/State/Zip \_\_\_\_\_

Phone Number ( ) \_\_\_\_\_

Quantity rates available on request. Scheduled for publication June 1987. Orders will be fulfilled within 60 days of the publication date or within 60 days of the date of order if received after the publication date.



## HELP WANTED

**CAREER OPPORTUNITIES:** ChemLawn is now accepting applications for the positions of Lawn Specialist in our expanding Florida Markets. Join the Nation's Leader in Lawn Care. Send resume to LM Box 422. TF

**SALES PERSON/MANAGER:** Expanding irrigation/landscape contractor is seeking a qualified individual for a full time highly diversified sales management position. Experience should include design, sales, estimating, scheduling, and administration. Massachusetts and New Hampshire territory—very desirable area. Send resume to G.S.G. Corp., P.O. Box 2071, Framingham, MA 01701. 5/87

**IRRIGATION FORMAN:** Full-time position available at southern Connecticut's most exclusive Landscape Design/Build firm. Applicant must be knowledgeable and experienced with in-field design, installation and maintenance of underground irrigation systems. \$20,000 plus per year with paid health insurance and paid vacation. Please reply by letter or resume to: Geiger's Site Planning and Development, 1135 Post Road East, Westport, CT 06880. TF

**LANDSCAPE MAINTENANCE AND CONSTRUCTION FOREMEN:** Suburban Cleveland firm is seeking experienced individuals who can work together with other people. Must be hard working, organized and capable of directing a project from beginning to end. You will report directly to the President. Salary commensurate with experience. Send resume to: P.O. Box 391002, Solon, OH 44139. 5/87

### ORKIN LAWN CARE

Orkin Lawn Care is looking for good lawn care Branch, District and Division Managers. Our expansion has created many opportunities. Advance quickly with the nation's fastest growing national company. We are looking for result oriented Managers who know how to manage people. If you're looking for opportunity and tired of the pace you're now at, call Gordon Crenshaw - 404-888-2770.

**EXPERIENCED FOREMAN:** Landscape Design & Construction Firm, seeking an **EXPERIENCED** Foreman, 3-5 yrs. Individual must be able to take total responsibility of projects, from start to finish. Plant knowledge, Construction Techniques, and Blue Print reading a must. **SALES:** Landscape Sales person, 1-2 yrs. experience. Individual must be aggressive, and willing to learn. Design ability a must. Contact Jim at Vander Veen Landscape Co., 840 West Columbia St., P.O. Box 164, Mason, MI 48854. (517) 676-1093. 5/87

**TURF SUPERVISOR:** Position for trained, educated and experienced turf specialist at a rapidly expanding 150 acre corporate sculpture garden and arboretum. The general scope of the work will include the care of bluegrass and mixed turf areas: diagnosis, chemical application, mowing, aeration, renovation and training & supervision of staff. Snow removal and woodland work during off season. Excellent benefits. Send resume and salary history to Carmine Labriola, Inc., 200 Johnson Rd., Scarsdale, NY 10583. 5/87

**ASSISTANT MANAGER OR FOREMAN:** 3 yrs. experience Nursery or Landscaper. Must have plant knowledge, construction techniques, Blue print reading. Fillmore Landscaping Co., Inc., P.O. Box #125, Gurnee, IL. Phone (414) 857-7193 after 7:00 P.M. 5/87

**TREE CARE SALESPERSON:** Year round work. BS degree in forestry or horticulture. 1-2 years experience, knowledgeable in all phases of tree care plus physical work. Call G. F. Lester Tree Expert Company, Cincinnati, Ohio. 513-761-5348. 5/87

Turf Grass Foreman needed; must be experienced in delivering high quality beautiful turf grass. Send resume to LM Box 425. 5/87

Commercial Turn-key Landscape Contractor in Georgia area seeking responsible quality minded self-motivated individual to fill Irrigation Technician position. Experience and new installation servicing blueprint and equipment necessary. Opportunity for advancement. Benefits to include major medical, paid holidays, vacation and bonus. Pay commensurate with experience. N.E.S.I., P.O. Box 263, Alpharetta, GA 30201. 5/87

**ASSISTANT TO THE PRESIDENT:** Outstanding opportunity to join one of the fastest growing tree and shrub care companies in the United States. We offer an excellent starting salary and bonuses, all benefits and an opportunity to participate in developing the newest ideas in the arborist field. You must have a minimum 5 years experience in a related field, a college degree and a dynamic desire to succeed. Send resume to Mr. Daniel Van Starrenburg, President, Sav-A-Tree of Westchester, Inc., P.O. Box 527, Armonk, NY 10504-0527. 914-666-8202. 5/87

## FOR SALE

**FOR SALE:** Toro Parkmaster, micro adj., 7 gang, 5 blade, rebuilt cutting units, rebuilt engine, absolutely top cond., 100% ready for spring. \$12,900. Also 7 Jacobsen fairway mowers, no frames (rough) \$1,000. (313)653-5695, MI. 5/87

**JACOBSON MODEL F 133** self propelled 5 gang, 11 foot reel type mower, excellent condition. Plant Services, University of MN, Crookston, MN 56716, 218-281-6510 x 327. 5/87

**MOM & POP GARDEN CENTER/NURSERY:** Southwest Ozarks' fastest growing area Ready to explode! Our 16th year and we can't cope! Lake View Gardens, Rt. 3, Box 1007, Kimberling City, MO 65686. Owner/Agent. 5/87

New 1985 Locke Professional, 76", \$6500. Two new Ingram 582, 72" rotary, hydrostat, \$5500 each. **WANTED:** Old Jac and Toro greensmowers. Call 305-592-2206. 6/87

For Sale: Princeton Tow-Boy sod Harvester, Model 2040, has cut only 15 acres of sod, has been stored in a building for last several years. Mint condition - 815-633-0211. 5/87

**QUALITY BLUE GRASS & FALCON FESCUE, KY. 31, DERBY RYEGRASS. PALLETIZED. ANDY WHITE SOD CO., INC. 502-633-6902. 11/87**

**ATTENTION GOLF COURSE SUPERINTENDENTS:** Great Meyer Zoysia for your Fairways and Tees. Guaranteed Bermuda free. Beauty Lawn Zoysia (Cincinnati) 1-513-424-2052. 2/88

**1984 9-GANG Jerry Clipper Mower, \$6,500.00. Bossley's Dryer, P.O. Box 453, Bay City, TX 77414. 409-245-2043. 5/87**

**FOR SALE:** 1980 Toro Parkmaster HTN, 7 gang, 7 reel, 7 blade and a 1980 FMC D020 300 Gal. Sprayer. For more information call 305-225-1200, FL. 5/87

**FINN HYDROSEEDERS & MULCH SPREADERS.** New & Used. Wolbert & Master, Inc., P.O. Box 292, White Marsh, MD 21162, 301-335-9300. 6/87

**SPYDERS - Used and reconditioned 2500 S. Cooper, Arlington, TX 76015. 817-261-7346 Mark. 6/87**

**BROWER HARVESTER OWNERS! ELECTRIC DEPTH CONTROL.** Save time and money with improved quality control. Make depth-of-cut adjustments, on the move, with one button finger tip control. Allows you to cut longer rows through varying soil conditions. Save sod you would normally throw away. \$895. 30-day satisfaction guarantee and full-year warranty. Write or call: Shattuck Turf Equipment, 1872 N.W. 82nd, Des Moines, IA 50322, (515) 278-5255. Patented. 7/87

**TREE FERTILIZATION GUN** tested on over a million square feet of trees and shrubs all over the U.S. Good to 500 psi, repairable, non-corrosive. Buy direct from manufacturer. \$106.00 (shipping included). Arbor-Nomics, Inc., 585 Langford Lane, Norcross, GA 30071. (404) 447-6037. TF

**BALL BARRIER NETTING:** Made of olefin fibers. 6 1/2 feet and 25 feet high. Strong and tough. Will not rust. Easy to handle. For Driving Ranges and Golf Courses. Keep golf balls from straying off-course. J. A. Cissel Mfg. Co., P.O. Box 339, Farmingdale, N.J. 07727. 1-800-631-2234. TF

**HYDRO-MULCHERS AND STRAW BLOWERS** New and used. **JAMES LINCOLN CORPORATION**, 3220 S. Jupiter Rd., Garland, TX 75041. (214) 840-2440 (TX), (800) 527-2304 (except TX). TF

Dowdeswell model 650 (The Gem) walk behind commercial tillers are available—20", 24", 30"—gas or diesel. Save 10% now - from \$5193.00; other makes, types, sizes from \$289.95. Let us bid your equipment and service needs! G. Gandy Equipment Services, 2031 4th Ave., Joliet, IL 60433. 815-726-7921. 5/87

**HANNAY REELS:** New in the box, E1526s and E1530s, \$339.00. Lawn spray hose 275 psi and 600 psi, all sizes. Original Imler measuring wheels, \$48.00. Glycerin filled gauges 0-60 psi, 2-02100 psi, \$19.95. Polypropylene ball valves 1/2" to 2" Chemlawn guns \$75.95. Lawn spray boots \$16.95. Lawn spray gloves \$1.25/pr. Call **Herc's Chemical Inc.**, 1-800-843-LAWN outside of Michigan or 1-313-543-2200. TF

**LAWN SEED.** Wholesale. Full line of top quality grasses. Improved bluegrass varieties, fine fescues and fine bladed ryegrasses. We specialize in custom mixing. Oliger Seed Company, 89 Hanna Parkway, Akron, OH 44319. Call collect (216) 724-1266. TF

For Sale: 320 acres sod, tree, fish farm. 240 acres standing crop, St. Aug., Raleigh, Centipede, Bermuda. 60 acres standing crawfish/catfish. 20 acres young landscape trees. Full line modern equipment. Possible owner finance. 713-451-1515, Houston, TX. 5/87

**YANMAR** (John Deere) 165D, four wheel drive, 16 hp diesel tractor with front end loader and rototiller. Like new condition, only used for 150 hours. \$5,000. (313)737-0328. 5/87

**SPRAY TRUCKS:** 1983 and 1984 Internationals. Both with 1000/250 gal. tanks, Meyers pump, 2 Hannay reels each with 400 ft. hose, very well maintained, professionally serviced, excellent condition. Both have bedrails, spreader brackets, hand-sprayer holders, new paint. Call 203-372-3511. Tony or Bob. 5/87

**SPYDERS**—used and rebuilt. Also a complete line of replacement parts for your Spyder. Call or Write: Mobile Lift Parts, Inc., 5402 Edgewood Rd., Crystal Lake, IL 60012. 815-455-7363. 6/87

3 gang Jake rebuilt units - \$900.00. E-10 Jake, good condition - \$3100.00. 5 gang Jake rough mowers - \$2000.00. 501-664-2136. 5/87

**BOWIE HYDRO-MULCHERS AND STRAW BLOWERS**, New and used. Landscape Supply, Ltd., P.O. Box 22092, Greensboro, NC 27420. (919) 292-2922. 9/87



# DIAZINON. IT'S LEGAL.

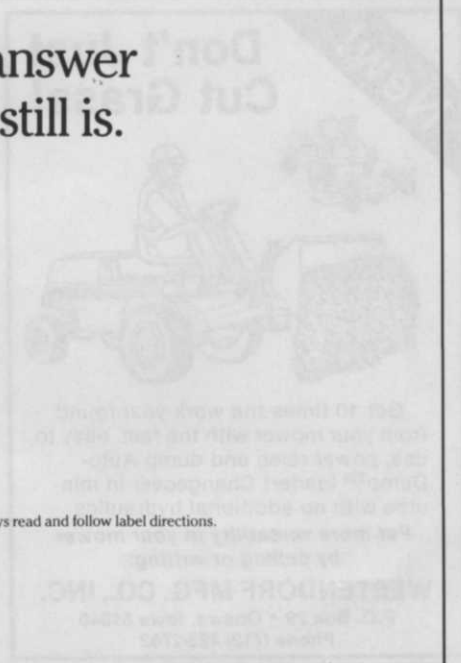
D·z·n<sup>®</sup> Diazinon is legal for use  
on golf courses and sod farms.

While the EPA has proposed  
cancellation on sod farms and golf  
courses, CIBA-GEIGY continues to  
support and defend all uses of  
Diazinon.

Diazinon. It's been your answer  
to turf insects for years. And still is.

**DIAZINON**  
CIBA-GEIGY

© 1987 CIBA-GEIGY Corporation, CIBA-GEIGY, Ag Division, Box 18300, Greensboro, NC 27419. Always read and follow label directions.





**ZOYSIA MEYERS Z-52 SOD OR SPRIGS. EXCELLENT QUALITY DELIVERED ANYWHERE AT REASONABLE PRICES. ALSO ROW PLANTING AVAILABLE. DOUBLE SPRINGS GRASS FARM, SEARCY, AR. (501) 729-5691. 5/87**

**TURF MAINT. EQUIP:** 2 - 1983 Toro Diesel 72's; 2 - 1983 Howard Diesel 727's; 1 - Howard HP-180 Diesel 15' cut Riding Rotary; 2 Wood's Rotary Decks 8 1/2' and 10' cut, P.T.O. Drive; 1 - Olathe Riding Sweeper Model 48HL; 1 - FMC 18' Batwing Rotary P.T.O. Drive; Miscellaneous Trailers; Jacobson 5-Gang Fairway Reels w/frame and spare reel. All units are reconditioned, ready to work and ready to sell. California Only 1-800-325-6441. Others 714-857-6408. 6/87

**FOR SALE: JACOBSEN BLITZER UNIT. GEARS, BEARINGS AND SEALS, 2 YEARS OLD. MOHAWK TRAILS GOLF COURSE, NEW CASTLE, PA 412-667-8570. 5/87**

**FOR SALE:** 1979 Toro 84. Reel Mower in Good Condition. Asking \$6,500. Call B&S Inc. (215) 250-5757. 5/87

Lateral roll irrigation systems 2 1/4 mile units with 5" aluminum pipe: End water supply complete and ready for use. Seven City Sod, 319-391-1663. 5/87

Brouwer sod harvester MF1973, 2,200 hours. Good condition. \$15,000.00 or best offer. 317-896-2683 — Indiana. 6/87

**FOR SALE:** 1 - Beck big roll sod cutter, near new - \$4800. Also 1 5" X 6" irrigation water pump with Ford 361 motor on stand, bad motor \$950. (815)963-5015, Rockford, IL. 5/87

**1976 FINN 3000 GALLON HYDROSEEDER** mounted on 1979 Chevrolet C80. Completely rebuilt. Like new. Ready to work. Total line of new Finn Equipment. Hydrograss Corp., P.O. Box 1, 58 Hartland Avenue, Pittsfield, Maine 04967. Tel. (207) 487-2733. 5/87

**FOR SALE:** Dodge D-150 w/low volume spray system w/injection system. Also, 1978 1 ton low volume truck spray system w/injection system. Both ready to work. 315-637-8660 or 315-492-3217. 5/87

**Finneyfrock Big Brute Sod Cutter, good condition. Green Valley Turf Farms, Canfield, Ohio. Telephone 216-533-3354. 5/87**

**FOR SALE:** 3 used Brouwer Sod Harvesters 18" rolling-auto steer-Massey Ferguson & Ford. Reconditioned & ready to go. Hitchhiker 3600 Brouwer forklift-Demos & New in stock, also Hitchhiker trailers. 3 Spydors & 1 towable Baker York. All in good condition. Indiana, 800-553-0552; Illinois, Michigan, Ohio, Kentucky, 800-553-0554. Elsewhere, 219-552-0552. Huber Ranch Power & Turf Supplies, Schneider, Indiana. 5/87

**Spray Truck:** 1980 GMC — series 6,000 350 V8 4 speed and 2 speed axle. Unit is equipped with 1,200 gallon Tuflex fiberglass tank, mechanical agitation, 10 GPM Beam pump, 50 gallon side tank, 8 HP Kohler engine drive, Hanney electric hose reel and detachable 1,200 lb. capacity granular fertilizer box. Reduced to \$9,500. Call Jerry Mykietka. 1-312-932-8668. 5/87

155 Acre Sod Farm plus 130 leased, N.W. Mountain area. Nearly new 3 BR home, heated shop, plus storage buildings. Complete line of machinery. 140 acre center pivot irrigation. Eight miles from city of 100,000. Terms and seller financing available. Owner retiring. \$675,000. Phone 406-452-8824. 6/87

**1974 BROUWER SOD HARVESTER, 3,000 HOURS, EXCELLENT CONDITION. 918-227-0252. 5/87**

1983 Ransomes motor 180 Triplex reel mower, 71" cut, 5 blade reels, excellent condition, 400 hours, \$6,000. 1985 Ryan Ride Aire, low hours, excellent condition, \$1,900. Call Town of Breckenridge, Colorado, (303)453-2251, Ken. 5/87

## MISCELLANEOUS

2 year Turfgrass—Golf Course Management Program. Beautiful Lake Texoma-North Dallas Area. 'Hands on' experience. Grayson College, Denison, TX 75020. 214/465-6030, ext. 321. Scholarships available. 11/87

**LANDSCAPERS SUPPLY CORP.'S FREE CATALOG.** Buy direct and save up to 75% on a full line of commercial lawn maintenance equipment, engines, parts and accessories. Call Toll Free 1-800-222-4304. 5/87

**KELWAY® professional SOIL ACIDITY and SOLUBLE SALTS TESTERS,** available from distributors nationwide. HB-2 and SST brochures from **KEL INSTRUMENTS CO., INC.,** Dept. 1, P.O. Box 2174, Vineyard Haven, MA 02568. (617) 693-7798. 10/87

**FREE PARTS CATALOG**—If you own a 36"—48"—52" walk-behind mower and you feel you're paying too much for parts, call Preco Distributors toll-free and request our parts catalog. **BELTS, BLADES, GRASS CATCHERS, WHEELS AND LOTS MORE!** Replacement parts that fit: **BOBCAT, BUNTON, KEES, EXMARK & OTHERS.** 1 day shipping coast to coast available. All parts carry a 90-day warranty. Don't wait, call 24 hours a day. **TOLL-FREE 1-800-428-8004, in Mass. 413-596-5505. PRECO DISTRIBUTORS, 2400 BOSTON ROAD, WILBRAHAM, MA 01095. TF**

## USED EQUIPMENT

**BUCKET TRUCK:** Hi Ranger 65', 57', 50'. Skyworkers with chip boxes. Asplundh bucket trucks with chip boxes. Asplundh brush chippers. Bean 55 gal. sprayers. Parkway Equipment Company, 633 Cecilia Drive, Pewaukee, WI 53072. 414-691-4306. TF

**NEW AND USED EQUIPMENT**—Asplundh, Hi Ranger and Lift-all forestry bucket trucks, Chipmore wood chippers. Mirk, Inc., (216) 669-3567, (216) 669-3562, 7629 Chippewa Road, Orrville, Ohio 44667. TF

**BUCKET TRUCKS,** Straight Stick, Corner Mount and Knuckle Boom Cranes. Brush Chippers - New Morbark Disc Type, New Woodchuck Drum Type. Best prices anywhere. Used Chippers - Asplundh, Woodchuck, etc. 2 to 8 usually in stock. Sprayers, Dumps, stakes, Log Loaders, Crew Cab Chip Box Dumps, Railroad Trucks, 50 in stock. Sold as is or reconditioned. Opdyke's Hatfield (Philadelphia Area) 215-721-4444. TF

**HUGGET FLAIL SWEEPER** - Cut and sweep in one operation - \$6,900. Cloverdale Nursery, 2528 No. Cloverdale Road, Boise, ID 83704. 208-375-5262. 5/87

## WANTED TO BUY

**WANTED—PULL BEHIND TREE SPADE.** 414-275-6811 EXT. 4093. 5/87

## SERVICES

### RELINERS, TIRE REPAIR

#### Free Tire Supply Catalog



Hard-to-find ag tires, tubes, reliners, tire repair tools, hot-cold patches, boots, tire changers, low tire prices and more listed in **GEMPLER'S free catalog, 24 hr. UPS shipping.** Write: **Gempler's, P.O. Box 270-70, Mt. Horeb, WI 53572** or call 1-800-382-8473.

**EXCESS LANDSCAPE TREE?** We will buy or help you sell your excess landscape materials. We are located in Wichita, KS, Central U.S.A. (316)722-7230. Ask for Dave or Jim D., 2501 N. Maize Rd., Wichita, KS 67205. TF

## ATTENTION LANDSCAPE MAINTENANCE CONTRACTORS

We sell full-color brochures with your company name and logo imprinted to help you sell your services to your customers. Orders taken for as few as 100 brochures. "Give a professional touch to your sales calls!" For samples write: **Green Tree Brochures, 742 South 4th Street, St. Louis, MO 63102. Ph. 314-241-5609.**

## WANTED

**WANTED:** Large Lindig and Royer Shredders. Lewis Equipment, 320 Third Street S.W., Winter Haven, FL 33880. (813) 294-5893. 12/87

Wanted to buy **HYDRO SEEDER.** Please send photo. Johnson Hydro Seeding Corp., 13751 Travilah Road, Rockville, Md. 20850 301/340-0805. TF

**WANTED: 1983-84-85, E-Z-GO 4 WHEEL ELECTRIC GOLF CARTS. MOHAWK TRAILS GOLF COURSE, NEW CASTLE, PA. 412-667-8570. 5/87**

## REPS WANTED

**MANUFACTURERS REPRESENTATIVE:** Denver Leasing and Manufacturing, a major supplier of spray trucks, parts, and accessories for the lawn and tree care industry is seeking qualified manufacturers reps to represent our high quality product lines in multi state territories. Interested persons should send resume to Personnel Director, 6803 Joyce St., Golden, CO 80403. 6/87

## AUCTIONS

**BUYERS/SELLERS:** Now is the time to utilize the auction method as a viable marketing tool. We are Hamilton Auction Company - **PROFESSIONAL LANDSCAPE AUCTIONEERS,** 228 Main Avenue, Clinton, IA 52732. 319-243-1252. 6/87

New!

## Don't Just Cut Grass!

Get 10 times the work year-round from your mower with the fast, easy to use, power raise and dump Auto-Dump™ loader! Changeover in minutes with no additional hydraulics.

*Put more versatility in your mower by calling or writing:*

**WESTENDORF MFG. CO., INC.**  
P.O. Box 29 • Onawa, Iowa 51040  
Phone (712) 423-2762



# BEFORE WE DEVELOPED THESE PROBLEM-SOLVING TURFGRASS MIXTURES, WE MARCHED THROUGH ACRES AND ACRES OF PROBLEMS.



Nobody knows the troubles we've seen.

Our Northrup King turf specialists and researchers have hoofed through salt problems, soil compaction, disease, starved turf, baked turf, clefted-to-shreds turf, and dormant winter turf—all depressing sights. But it was a road well worth our travels.

The result is a complete line of Medalist® turfgrass formulas that meet the demands of the professional turf manager.

If you've been staring down at a turf problem, look up your solution here. And if you think it's a turf problem we haven't seen, just let us know.

Our business is putting your problems behind us.



MEDALIST TURF PRODUCT	MAJOR AREAS OF USE	SPECIAL FEATURES
Athletic Pro and Athletic Pro II	For athletic turf.	Well suited for new seeding or overseeding. Fast establishing, traffic tolerant, rapid recovery. Both provide good footing.
Boulevard Mix	Any area with high pH (roadsides, sidewalks, boulevards, alkaline soils, etc.).	Contains 'Fults' and Dawson red fescue for beautiful salt-tolerant turf. Performs at low to high fertility levels.
Landscape Pro Mix	School grounds, cemeteries, golf course roughs, home lawns.	Establishes fast. Adapts to broad range of conditions and management levels. Low to moderate fertility needs.
Overseeder II Mix	Fairways, tees, athletic fields.	Rapid germination and establishment. Withstands heavy traffic and resists diseases. Penetrates compacted soils.
Medalist North Mix	Fairways, tees, cart paths, wear areas.	Quality turf for high traffic areas. Clean mowing and disease resistant.
Premium Sod Blend	Commercial sod production.	Exceptional dark green color. Tolerates light shade. Superior disease resistance. Rapid sod producer.
Renovator Pro Mix	Problem solver for heavy traffic areas (athletic fields, golf tees, and fairways).	Penetrates compacted soils and combats <i>Poa annua</i> . Adaptable to most geographic regions.
Medalist Brand Overseeding Products	Winter overseeding of dormant bermudagrass.	Establishes rapidly and evenly. Tolerates traffic while providing a superior putting surface. Smooth spring transition.

Ask your Northrup King distributor about Medalist Turf Products to solve your turf problems. Or write Northrup King Medalist Turf Products, P.O. Box 959, Minneapolis, MN 55440.

Circle No. 133 on Reader Inquiry Card



# AD INDEX

NO. ADVERTISER	PAGE NO.	NO. ADVERTISER	PAGE NO.	NO. ADVERTISER	PAGE NO.
101 American Cyanamid/ Arsenal	30-31	107 Ciba-Geigy Corp./ Subdue	37	114 Roundup-Surflan	73
102 American Cyanamid/ Image (Reg.)	70-71	108 Ciba-Geigy Corp./ Diazinon	79	115 Excel Industries, Inc.	33
103 Anderson, The	23	109 Daihatsu America, Inc.	47	116 Fermenta Plant Protection Co.	45
104 BASF Corp., Chemicals Div.	26	110 Deere & Co., John	12-13	153 Growth Products	82
105 Brouwer Turf Equipment Ltd.	5	111 Dixon Industries	8	257 Jacobsen, Div. of Textron	53
106 Bunton Co.	69	112 Eberhart Plastics Div., Eberhart Steel	52	118 Kincaid Enterprises, Inc.	2-3
		113 Elanco Products Co./		119 Kohler Engine Div., Kohler Co.	28

**Equipment for the Turf Care Professional**



**Olathe TREE AND BRUSH CHIPPER**

SETTING NEW STANDARDS FOR CHIPPERS

- Hydrostatic drive on feed for instant speed & directional control
- Fold up feed apron now standard for safety & transport
- Hinged top housing for easy blade access
- Discharge chute rotates 360° & horizontally — no wrenches required
- Infeed 15° closer to curbside for operators safety
- New, more powerful feed motors
- 42" diameter cutter drum for power

**OLATHE MANUFACTURING, INC.**  
100 INDUSTRIAL PARKWAY, INDUSTRIAL AIRPORT, KANSAS 66031

**800-255-6438**  
913-782-4396

Circle No. 135 on Reader Inquiry Card

**DON'T GET BURNED!!**

**ORDER NITRO-26 CRN,**



You are probably already thinking about the **HOT** summer months and possible turf burn. **Nitro-26 CRN LIQUID SLOW RELEASE** fertilizer will give you the comfort level you need even at **LOW VOLUME** spraying or on valuable **GOLF COURSE GREENS**. **Nitro-26 CRN** has been tested by a leading university at high application rates with **NO** burn to turf . . . and **SATISFIED** customers using low volume spraying (1.5-1.0 gal/lm) sq. ft. have had **NO PROBLEMS**. With **Nitro-26 CRN** there is no need to switch over to coated granular products that can often cause problems in high traffic areas. **Nitro-26 CRN** is the **ONLY LIQUID MDU\*** product available.



Special high quality blends are also available.  
Call or write:  
**Growth Products**  
P.O. Box 1259  
White Plains, NY 10602  
**(914)-428-1316**

\*MUD — Methylene diurea is labeled by AAPFCO as a slowly available source of nitrogen.

Circle No. 153 on Reader Inquiry Card

119 Kohler Engine Div., Kohler Co.	28
233 Kut-Kwick	41
121 Lebanon Chemical Co./Turf Care Div.	58
122 Lesco, Inc./Image	35
123 Lesco, Inc./Greensmower	35
124 Lofts, Inc.	CV4
125 Millinckrodt, Inc.	39
126 Mobay Chemical/Bayleton Ornamental	CV3
127 Mobay Chemical/Bayleton Turf	16-17
128 Mobay Chemical/Dyrene	49
129 Mobay Chemical/Nemacur (Reg)	77
130 Mobay Chemical/Oftanol (Reg)	54-55
131 Monsanto Co., Roundup	42-43
132 National Mower Co.	72
133 Northrup King/Medalist	81
134 Nor-Am Chemical Co.	65
135 Olathe Mfg. Inc.	82
136 Phillips Fibers Corp.	67
137 Professional Turf Equipment (Reg)	72
138 Rhone Poulenc, Inc./Chipco 26019	11
139 Safer, Inc.	83
140 Sandoz Crop Protection Corp.	51
141 Std. Golf Co.	66
143 Tennant	44
144 Tennant	44
145 Tennant	44
146 Toro Co., The Irrigation Div.	15
147 Toro Co., The Irrigation Div.	59
142 Turf Seed	CV2
148 Turfco Manufacturing, Inc.	72
149 Westendorf Manufacturing Co.	80
258 Woods, Div of Hesston Corp.	25
151 Yamaha Motors Corp.	62-63

This index is provided as an additional service. The publisher does not assume any liability for error or omission.



# IF YOU'RE STILL USING CONVENTIONAL PESTICIDES, BE PREPARED TO HEAR OPPOSING ARGUMENTS.



Despite mounting evidence of the drawbacks of conventional, *petrochemical-based* pesticides, some companies continue to use them. Yet consider the situation that exists.

Consumer sensitivity to the problems associated with conventional pesticides has reached an all-time high. At the same time, the number of liability suits brought by employees of companies that rely on them grows by the day.

Why run the risk? Why not use the pesticides that contain *no* petrochemicals? Why not play it Safer™?

Scientifically derived from biodegradable ingredients, Safer pesticides are safe and effective. In other words, you can use them without worry. And if you're a crop producer, you can use them right up to harvest time.

To find out more about the advantages of Safer pesticides, phone the Safer Technical Hotline at 1-800-544-4453. Or call Safer, collect, at 617-237-9600.

And judge for yourself.



**Safer**<sup>TM</sup>  
The Safer Pesticide



## Dressing for failure

The scene is a major turf convention. The speaker asks a crowd of 70 or 80 landscapers how many issue uniforms to crew members. About 40 raise their hands.

If you think the above scenario is an accurate portrayal of the green industry's professionalism, you've got rocks in your head. Want to know how many landscape contractors actually raised their hands? Seven...maybe eight.

Keep in mind that this is a major turf convention. About 30 percent of the attendees were from out-of-state, an indication that they ran a business profitable enough to send somebody to a convention of this magnitude. We're talking about moderately successful business people here. Yet most didn't supply uniforms.

This bowls me over. If I were in a position to hire a landscape management company to handle my residential or corporate lawn, the last thing I'd want on that lawn would be somebody riding around on a lawn mower in a T-shirt and cut-offs. And you'd better believe that I'd never allow somebody like that around my house while I'm away during the day.

Okay, so you've got a nice profitable company, even though you could care less about uniforms. But have you ever considered how much more money you could be making if your employees radiated that confident, professional look uniforms provide?

If you haven't checked out the article in this month's issue about Torre & Bruglio Landscaping, you should. Here are two guys who do it right. They're two guys who are also reaping the rewards of "doing it right." If you don't dress your employees properly, you might take a hint from this multi-million-dollar company.



*Jerry Roche*

**Jerry Roche**, editor

### LM Editorial Advisory Board



**Doug Chapman**  
Horticulturist  
Dow Gardens  
Midland, MI



**J.R. Hall**  
Extension Agronomist  
VPI & SU  
Blacksburg, VA



**Kent Kurtz**  
Professor  
Horticulture  
Cal Poly-Pomona



**Harry Niemczyk**  
Professor  
Ohio State University  
Wooster, OH



**A. Marty Petrovic**  
Asst. Professor  
Cornell University  
Ithaca, NY



**Robert Shearman**  
Assoc. Professor  
University of Nebraska  
Lincoln, NE





Nothing fights fungus better.

Bayleton.

It strikes gently, but with long-lasting power against powdery mildew, rust, flower blight and leaf blight. BAYLETON fungicide. Keeps the world safe for ornamentals.

Mobay Corporation, Specialty Products Group, Box 4913, Kansas City, Mo. 64120



BAYLETON is a Reg. TM of Bayer AG, Leverkusen. 6-2255

Circle No. 126 on Reader Inquiry Card





*Palmer*

Turf-Type  
Perennial Ryegrass

## Shows up at some very nice places

It's no wonder courses like Bay Hill in Florida, Shinnecock in New York, PGA West in California and Sahara in Nevada are only a few of many places that demand the excellent performance of Palmer perennial ryegrass.

As a turf professional you're concerned with the overall performance

of the turf seed you select. For the second year in a row Palmer ranks first in the U.S.D.A. National Perennial Ryegrass Tests performed in 21 locations coast to coast.

Whether your ryegrass needs are on a golf course, an athletic field, cemetery, park or home lawn, go with the winner. Use Palmer.



**Lofts Inc.**  
World's largest marketer  
of turfgrass seed  
Bound Brook, NJ 08805  
(201) 356-8700  
(800) 526-3890

**Lofts/New England**  
Arlington, MA  
(617) 648-7550

**Lofts/Great Western**  
Albany, OR  
(503) 928-3100 or  
(800) 547-4063

**Lofts/New York**  
Brewster, NY  
(914) 278-2710

**Lofts/Maryland**  
Beltsville, MD  
(800) 732-3332  
(800) 732-7773 (MD)

**Sunbelt Seeds, Inc.**  
Norcross, GA  
(404) 448-9932 or  
(800) 522-7333

**Oseco Inc.**  
Brampton, Ontario  
Canada  
(416) 846-5080

To locate the Lofts' distributor nearest you, call (800) 526-3890 (Eastern US) • (800) 547-4063 (Western US)

Circle No. 124 on Reader Inquiry Card