

Make sure your lawn care jobs don't come back to haunt you.

With labor and gasoline what they are today, the cost of a call-back is frightening. Add in the hidden costs of unhappy customers, and it's enough to scare you to death.

That's why you need DURSBAN* insecticide in at least two of your yearly applications. You see, in most parts of the country, insects are a problem in both the Spring and later on in the Summer. If they don't get you the first time, they just might get you the second.

And that can mean costly call-backs.

So think twice before you decide to skimp on DURSBAN. And think about how little it costs—as little as \$3.50 for a 10,000 sq. ft. lawn. Which is a lot less than the cost of a call-back.

DURSBAN insecticide gives you results you can count on, too. It gets all your major problem bugs. And it controls them for up to eight weeks instead of the more common four to six.

DURSBAN. Makes sure all your returns are happy returns. Available in 2E and double-strength 4E formulations.

See your Dow distributor. Also ask him about our new "DURSBAN delivers the goods" incentive program. Be sure to read and follow all label directions and precautions. Agricultural Products Department, Midland, Michigan 48640.

DURSBAN Call-backs haven't a ghost of a chance.

DOW Chemical U.S.A. *Trademark of The Dow Chemical Company.

Dow

Ad No.: 2901

Circle No. 115 on Reader Inquiry Card





Cover: Landscape at Sea World, San Diego.

MARCH 1982/VOL. 21, NO. 3



Jim McKay, GCSAA Show coverage.



Weed Control Guide-page 25

20 Jacklin, Vermeer **Found Strength** in Landscaping

Continuing our 20th Anniversary celebration, two green industry giants look back at their growth over the last 20 years.

25 Landscape Weed **Control Guide**

A compendium of information from 20 leading weed scientists, Weeds Trees & Turf presents its definitive first annual weed control guide.

Proper Green Construction Solves Later Problems

USGA Green Section Agronomist Brian Silva reveals how proper green construction now can stop problems from occuring later.

56 **Specify Tolerant** Trees For **Air Polluted Areas**

Karnosky and Myers continue with their second and final report on what trees fair best in polluted areas.

66 Fertilizer

Timing and Methods For Landscape Trees

Douglas Chapman, Dow Gardens horiculturist, reports on proper and improper fertilization of landscape trees.

DEPARTMENTS

Outlook	4
Green Industry News	6
Golf Update	12
Landscape Update	14
Government Update	18
Vegetation Management	72
Letters	76
Products	78
Events	888
Classifieds	105
Advertiser Index	108



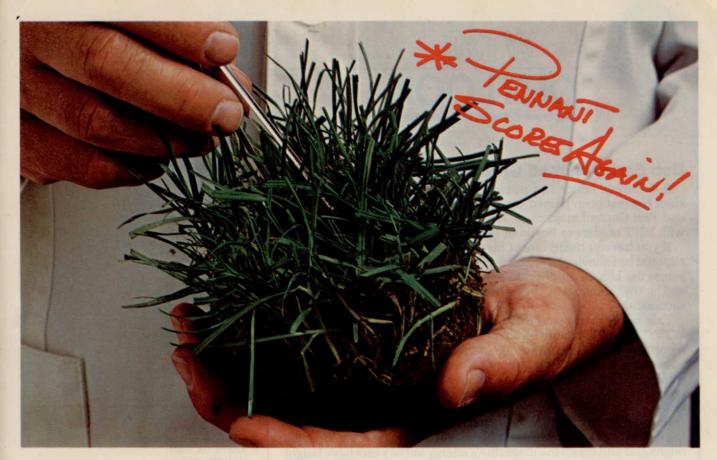
Golf Green Specifications-page 48

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

WEEDS TREES & TURF (ISSN 0043-1753) is published monthly by Harcourt Brace Jovanovich Publications. Corporate and Editoral offices: 757 Third Avenue, New York, New York 10017. Advertising offices: 757 Third Avenue, New York, New York 10017, 111 East Wacker Drive, Chicago, Illinois 60601 and 3091 Maple Drive, Atlanta, Georgia 30305. Accounting Adver-tising Production and Circulation offices: 1 East First Street, Duluth. Minneota 55802. Subscription rates: United States \$15 per year; Canada \$18 per year. All other countries: \$40 per year. Single copies: \$2 in the United States and Canada; all other countries: \$4.50. Second class postage paid at Duluth, Minneota 55806 and additional mailing offices. Copyright ~1982 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 WEEDS TREES & TURF, P.O. Box 6198, Duluth, Minnesota 55806-9898.

A HARCOURT BRACE JOVANOVICH PUBLICATION



What do turfgrass experts say about Pennant* ryegrass?

The Turf Trial results speak for themselves. Pennant is a champion. Rigidly controlled, comparative testing involving **Pennant** and competing varieties of perennial ryegrasses were conducted by turf experts across a broad region of the U.S.—the Pacific Northwest, the Southwest, the Northeast.

Pennant topped many of its competitors in these tests, including overseeding and heat tolerance trials in the Southwest. Some of the expert's findings are illustrated below.

injury.)

PENNANT

CITATION

PENNFINE

PENNANT

REGAL

DERBY

ANNUAL

CBS

DERBY

LINN

MANHATTAN

Percent winter injury. Adelphia, N.J. March 1978. (10 of 26 varieties tested showed no significant

0%

0%

11%

14%

Average Turl Performance scores, February 1980. Southern Arizona turl overseeding on Tifgreen Bermuda. Sixteen entries seeded October 1979. (10 – Best).

23

18%

38%

7.3

6.3

5.7

5.5

Warm and cool season average turf score, Southern California first-year tests, 1979.

the second se	1001	0031
PENNANT		
PENNFINE		
DIPLOMAT		
YORKTOWN II		
MANHATTAN		
CITATION		

Pennant was best among 12 varieties tested for red thread disease (Corticium fuciforme) in 1-year average, 1979-80. Western WA. (Low score - Best).

PENNANT	20.7 %
CITATION	23.6 %
DERBY	26.3 %
PENNFINE	30.4 %
MANHATTAN	40.4 %
YORKTOWN II	47.8 %

* Plant variety protection pending and anticipated

Circle No. 101 on Reader Inquiry Card

Turf performance scores. North Brunswick, N.J. 1975-78. (9 – Best).

YORKTOWN II	6.4
PENNANT	6.3
CITATION	5.9
DERBY	5.4
PENNFINE	5.4
MANHATTAN	5.2

Pennant was best among 57 varieties tested for sod webworm tolerance (lawn moth - Crambus spp. of the order Lepidoptera), Adelphia, N.J., August, September, October 1980.

		Poor Best
	PENNANT	THE REAL PROPERTY AND INCOME.
1	PREMIER	
4	REGAL	100
	DIPLOMAT	./
	CITATION	
ľ	FIESTA	
i	PENNFINE	in Albor LA Jun
1	YORKTOWN II	in minist clyry
1	CARAVELLE	A A DE LE CLEAN
	DERBY	A THE REPORT OF
1	LORETTA	is a theavaith a a
1	MANHATTAN	the policesonia lin
	LINN	Test Labri Unit elesi

Reaction to brown patch disease (Rhizoctonia), Adelphia, N.J., 1978. (9 = least damage)

PENNANT	7.5
YORKTOWN II	7.0
CITATION	7.0
REGAL	6.3
DERBY	6.2
PENNFINE	5.8

At Adelphia, N.J., **Pennant** showed the best performance under low fertility and drought stress. We call it "The Trophy Turf". We think you will, too.



For additional information regarding **Pennant's** truly remarkable Turf Trial performance, contact: Agriculture Service Corporation, 5240 Gaffin Rd., Salem, OR 97301, Telephone: (503) 581-8899.



Bob Earley Named Group Publisher

Bob Earley, editor and publisher of Lawn Care Industry magazine, has just been named Group Publisher of Weeds Trees & Turf and Pest Control magazines. He now shares his bearded presence with WTT readers as he did in 1976 when he was managing editor.

If you haven't heard one of his speeches in the last three years at regional turf shows you are rare. He has given thousands of speeches across the U.S. in an effort to help the lawn care industry organize and grow. Obviously, his efforts combined with others were successful.

This same energy and drive will now be partly channelled into WTT. The results should be obvious within the next few months. His favorite method is to put people in the magazine. No doubt we will have many more profiles in coming months of successful men and women in all Green Industries. He also likes to visit every possible landscape event to keep in touch with the market on a first hand basis.

Bob and I started with these magazines eight years ago. Despite all the talk of staff changes, he and I have been here. Now we have the reigns and will direct the magazine's energy as the years have taught us. Please let us hear from you if you have ideas which you think need work to serve the Green Industries.

No Shamu For Weeds

You may have seen the newspaper accounts in February about Harcourt Brace Jovanovich moving its headquarters to Orlando, Florida. That is completely true, but Weeds Trees & Turf and Lawn Care Industry will remain in New York.

The costs of office space in New York are simply insane. HBJ leases more than 300,000 square feet of office space in New York. It simply was crazy to permit rental rates to triple without some action. What would you do if your rent tripled?

On the other hand, New York is the absolute hub of the publishing world. Therefore, the business publications will remain here.

Books, educational, and other HBJ divisions will relocate to Sea World property in Orlando by the end of 1984. Yes, Shamu is related to Weeds Trees & Turf.

Since this occurred in February when the temperature was less than freezing, you might understand a little interest on our part in moving to sunny Florida. As much as we travel it really doesn't matter anyway.

Hawaii Is Popular 82 Show Location

Four industry associations will hold their annual meetings in Hawaii this year. The National Arborist Association and the American Sod Producers led the way in February and March on Maui. The American Association of Nurserymen and the American Society of Landscape Architects meet in Hawaii this summer.

I can vouch that Hawaii is a heavenly place. Somehow, it doesn't make sense under the current recession and building crunch to have meetings so far away. It suggests the real purpose of an annual meeting is to play. Maybe learning shows are passe.

Executive Editor Bruce F. Shank, New York Associate Editor Thomas Paciello, New York

Publisher Dick Gore, Atlanta

Group Vice President Tom Greney, Chicago

Group Publisher Robert Early, New York

Production Manager

Mary Lindskog, Duluth Production Supervisor

Marilyn MacDonald, Duluth

Graphic Design Dave Johnson, Duluth

Circulation Manager Kristine Benike, Duluth

Directory Coordinator Patty Rusch, Duluth

Reader Service Manager Gail Kessler, Duluth

Promotion Director Linda Winick, New York

OFFICES

ATLANTA 3091 Maple Drive Maple Center One Building Altanta, GA 30305 (404) 233-1817 NEW YORK 757 Third Ave. New York NY 10017 Editorial: (212) 888-2563 (or 2892) 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, Minn. 55802 (218) 727-8511

MARKETING REPRESENTATIVES

James R. Brooks Atlanta (404) 233-1817

Dick Gore Atlanta (404) 233-1817

Ron Kempner Atlanta (404) 233-1817

Robert Mierow Seattle: (206) 363-2864



Member; American Business Press, Business Publications Audit, National Golf Foundation, American Sod Producers Association, Associated Landscape Contractors of America, National Landscape Association, Horticultural Research Institute.

Subdue. Controls Pythium blight and damping-off.

Subdue

No other fungicide works as well as Subdue[®] against Pythium damping-off and blight because only Subdue has twoway action against these diseases.

First, Subdue gives you systemic control that protects grasses from the inside out. Second, it works in the soil to control

Pythium by contact action. Two-way action that keeps turf healthy.

In established turf, Subdue is an ideal preventative treatment for Pythium blight. Plus in newly seeded or overseeded turf, you get protection from Pythium damping off and blight.

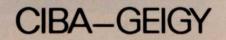
Subdue provides effective control for 10-21 days. Longer residual control than other Pythium fungicides. So Subdue can help you reduce application trips and labor costs. But just as important, Subdue fits

your total program because it's compatible with most other fungicides.

Subdue gives you protection like you've never had. Subdue, the only fungicide for Pythium with two-way action.

West A Valles for

© 1982 Ciba-Geigy Corporation



GREEN INDUSTRY NEWS

GCSAA SHOW Superintendents' Show Super Successfull

Over 7400 golf course superintendents and related industry personnel trekked to New Orleans to participate in the GCSAA Turfgrass Conference and Trade Show. Both the host city and the conference lived up to expectations.

Many superintendents and exhibitors took advantage of the Bourbon Street locale. On any evening of the week-long show, superintendents could be spotted doing their best to bolster the New Orleans economy by dining at Antoine's, Galatoire's or The Andrew Jackson or sipping Hurricanes (a local potable) at Pat O'Brien's. Some exhibitors customized their promotions to tie-in with the local atmosphere. Rain Bird Sprinkler Mfg. Corp., Glendora, CA, offered horse-drawn carriage tours and brochures of the French Quarter. Rhone-Poulenc Chemical Co., Monmouth Junction, NJ, sponsored an evening at the club of the famous jazz trumpeter Al Hirt.

Early arrival was encouraged and

the show profitted from good attendance at the day-long pre-conference seminars on Saturday and Sunday. While the opening session was planned for Monday and the trade show for Tuesday, over 200 guests of the Marriott Hotel (many of whom were superintendents) received a 6 am wake-up call Sunday morning from fire engines battling a blaze adjacent to the hotel. The fire was quickly brought under control and though the Marriott suffered minor smoke damage to its facade, the greatest loss to the guests seemed to be a good night's sleep. For those guests who managed to sleep through the cacophony of the early morning fire engines, a fresh crew of firemen tracked through the lobby to douse a small fire in the trash chute later in the day.

With the pre-conference activities anything but dull, the opening session got off without a hitch. The Grand Ballroom of the New Orleans Hilton was



Sunday morning fire next to New Orleans Marriott Hotel.



Ron Fream's seminar on employee motivation.

filled to near capacity by 9 a.m. as the audience applauded the GCSAA awards presentation. Paul Voykin, golf course superintendent of Briarwood Country Club, Deerfield, IL, received the Leo Feser Award for his article, "Overgrooming is Overspending." Additionally, editors of 12 newsletters published by the association's chapters received Chapter Newsletter Editor Awards. For outstanding service to the golf course superintendent's profession, Distinguished Service Awards were presented to Milton Bauman, GCS, Seattle Golf Club; Sherwood Moore, GCS, Winged Foot Golf Club, Mamaroneck, NY; Al Radko, retired national director of the USGA Green Section; and Ben Warren, founder of Warren's Turf Nurseries.

The highlight of the opening session was the keynote address delivered by Jim McKay, ABC-TV sportscaster. An avid golfer who also anchors ABC-TV's golf telecasts, McKay explained to the crowd that he views the superintendent's job as an art. "I appreciate the art of what you do," said McKay. "In golf, the surface plays a more important part in the game than in almost any other sport." He regaled the audience *Continues on page 12*

Aronimink Golf Club uses 50/50 Mix of Penncross and Penneagle to save water...



Aronimink Golf Club, Philadelphia, PA

Proof that two "Halfs" make a better hole

PENNCROSS

- 1. Increased hybrid vigor
- 2. Widely Adapted
- 3. Agressively Competes
- 4. The best Bentgrass available for over 25 years
- 5. Proven performance throughout the world

"The Old Standby"



For the name of your nearest Penncross/Penneagle dealer, call or write:

TEE-2-GREEN CORP.

P. O. Box 250 Hubbard, OR 97032 Toll free: 1-800-547-0255 TWX: 510-590-0957

Ten minute slide presentation available on loan. Call or write:

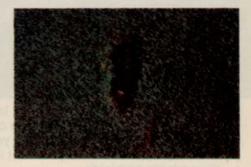
Tee-2-Green Corp. Information Coordinator

1349 Capitol Street NE Salem, Oregon 97303 503/363-1022

Circle No. 155 on Reader Inquiry Card



50/50 Mix on Number 9 Fairway Penncross germinating in divot



PENNEAGLE

- 1. Dark green color
- 2. Upright, tighter growth
- 3. Lower cutting (7/64" for tournament play)
- 4. More economical
- 5. Better disease resistance
- 6. Tighter growth habits

"The New Standard"



Banvel[®]4-S Herbicide gets a powerful new tank-mix label. So you'll get all the extras.

Banvel® 4-S Herbicide has a new label that gives you greater application flexibility. You can now tank-mix Banvel 4-S to add more weeds to your controlled list. And to get all the extras you want in a tough, dependable herbicide.

Extra options for tank-mixing.

You can now use Banvel 4-S Herbicide in a variety of combinations. Tank-mix it with 2, 4-D. Or MCPA. MCPP. Even bromoxynil. More than ever, Banvel 4-S fits your tank-mix preferences.

Extra control in a weed and feed program.

With it's new label, Banvel 4-S can be applied using either sprayable liquid fertilizer or water as the carrier.

Extra broadleaf weed control.

The new Banvel 4-S label puts you in control of more weeds, including many of your worst problem broadleaves.

Extra application flexibility.

You're no longer limited to one application per year with Banvel 4-S Herbicide. Used at low rates, Banvel 4-S can be applied in retreatment programs up to two pints per acre during a growing season. Plus, Banvel 4-S can now be used on non-cropland, brush areas, fencerows and roadways, as well as turf and lawns.

Check all the extras you get with Banvel 4-S Herbicide's powerful new tank-mix label. See your lawn or turf chemical supplier today for more information.

Banvel Herbicide is a registered trademark of Velsicol Chemical Corporation. Before using any pesticide, please read the label.



VELSICOL 4-S

Velsicol Chemical Corporation, World Headquarters 341 East Ohio Street, Chicago, Illinois 60611

	numbers below, fill in appropriate information and mail today. 101 115 129 143 157 171 185 199 213 227 102 116 130 144 158 172 186 200 214 228 103 117 131 145 159 173 187 201 215 229	0050 CEMETERIES/MEMORIAL GARDENS 0055 HOSPITAL/HEALTH CARE INSTITUTIONS
Circle	102 116 130 144 158 172 186 200 214 228 103 117 131 145 159 173 187 201 215 229 104 118 132 146 160 174 188 202 216 230 105 119 133 147 161 175 189 203 217 231	0060 MILITARY INSTALLATIONS & PRISONS 0065 AIRPORTS 0070 MULTIPLE GOVERNMENT/MUNICIPLE FACILITIES
the	104 118 132 146 160 174 188 202 216 230 105 119 133 147 161 175 189 203 217 231 106 120 134 148 162 176 190 204 218 232 107 121 135 149 163 177 191 205 219 233	OTHER TYPE OF FACILITY (PLEASE SPECIFY)
Reader	108 122 136 150 164 178 192 206 220 234 109 123 137 151 165 179 193 207 221 235 110 124 138 152 166 180 194 208 222 236 111 125 139 153 167 181 195 209 223 237	B. CONTRACTORS/SERVICE COMPANIES/CONSULTANTS: 0105
Service	112 126 140 154 168 182 196 210 224 238 113 127 141 155 169 183 197 211 225 239 114 128 142 156 170 184 198 212 226 240	0120 TREE SERVICE COMPANIES/ARBORISTS 0125 LANDSCAPE ARCHITECTS 0130 EROSION CONTROL COMPANIES
numbers	Your primary business at this location is: (check one only in A, B or C) A. LANDSCAPING GROUND CARE FACILITIES: 0005 GOLF COURSES 0010 SPORT COMPLEXES	0135 EXTENSION AGENTS:CONSULTANTS FOR HORTICULTURE 0140 IRRIGATION CONTRACTORS OTHER CONTRACTOR OR SERVICE (PLEASE SPECIFY)
of those	0015 PARKS 0020 RIGHTS-OF-WAY MAINTENANCE FOR HIGHWAYS, RAILROADS, &	C. SUPPLIERS: 0205 SOD GROWERS
items of	UTILITIES 0025 SCHOOLS, COLLEGES & UNIVERSITIES 0030 INDUSTRIAL & OFFICE PARKS/PLANTS	0210 EQUIPMENT DEALER/DISTRIBUTOR OTHER SUPPLIER (PLEASE SPECIFY)
interest	0035 SHOPPING CENTERS, PLAZAS AND MALLS 0040 PRIVATE/PUBLIC ESTATES & MUSEUMS 0045 CONDOMINIUMS/APARTMENTS/HOUSING DEVELOPMENTS/	Approximately how many acres of vegetation do you maintain or manage?
to you.	HOTELS/RESORTS	What is your title? (please specify)

BUSINESS REPLY CARD

NO POSTAGE NECESSARY IF MAILED IN THE UNITED STATES

GET

MORE

FACTS

FIRST CLASS PERMIT NO. 665 DULUTH, MINNESOTA

POSTAGE WILL BE PAID BY ADDRESSEE

POST OFFICE BOX 6049

DULUTH, MINNESOTA 55806