



TURFLON[®] D HERBICIDE

For the Control of Annual and Perennial Broadleaf Weeds in Ornamental Turf

Active Ingredients:
2,4-Dichlorophenoxyacetic Acid, Butoxyethyl Ester 84.4%
Butoxyethyl Ester 16.0%
Tolclopramide (3,6-Dichloro-2-pyridinylphenoxyacetic acid, Butoxyethyl Ester) 14.0%
Inert Ingredients 14.0%
2,4-D Acid Equivalent 23.7% - 3 pounds per gallon
Tolclopramide Acid Equivalent 11.0% - 1 pound per gallon
E.P.A. Registration No. 484-589
E.P.A. Est. 484-MI-1

KEEP OUT OF REACH OF CHILDREN

CAUTION

AVISO: PRECAUCION AL USUARIO:
Si usted no lee inglés, no use este producto hasta que le asegure a haya sido traducida apropiadamente.

PRECAUTIONARY STATEMENTS
Hazards to Humans and Domestic Animals
HARMFUL IF SWALLOWED
Avoid Contact With Eyes, Skin, or Clothing • Avoid Contamination of Food • Wash Thoroughly After Handling

STATEMENT OF PRACTICAL TREATMENT:
In case of skin contact, flush skin with plenty of water. Get medical attention if irritation persists. Remove and wash contaminated clothing before reuse.

Do not use if reseeded. Do not reduce mowing. Call a physician.

Physical or Chemical Hazards

COMBUSTIBLE

Do not use or store near heat or open flame. Do not cut or heat container.

Environmental Hazards

This pesticide is toxic to fish. Keep out of lakes, ponds, or streams. Do not concentrate water by cleaning of equipment or disposal of wastes.

See Back Panel for Important Use Precautions.

In case of an emergency endangering life or property involving this product, call collect 817-636-4400.

AGRICULTURAL CHEMICAL

Do not contaminate water, food or feed by storage or disposal.

NOTICE: Read the entire label. Use only according to label directions.

Before buying or using this product, read "WARRANTY LIMITATIONS AND DISCLAIMER" on side panel. If terms are not acceptable, return unopened package or order to seller for full refund of purchase price paid. Otherwise use by the buyer or any other user constitutes acceptance of the terms under the Limit of Warranty and Liability.

9.46 L/2.5 gal

THE DOW CHEMICAL COMPANY
Midland, Michigan 48640 U.S.A.

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INTRODUCING New TURFLON* D FIRST LINE OF DEFENSE.



New TURFLON* D herbicide. Here's a post-emergence herbicide for broadleaf weeds. It's been thoroughly tested by the major universities in the Bluegrass Belt and proven under Experimental Use Permit (E.U.P.) on hundreds of lawns.

It works. It will reduce callbacks. It will make you money!

Here's why: TURFLON D will get the early season weeds including the tough ones like veronica spp. along with dandelions and other easier-to-kill weeds. A later application gives outstanding control of wild violets, ground ivy, spurge, oxalis and others.

TURFLON D wide-spectrum control works to your advantage when it comes to customer satisfaction. You'll make more money because you'll reduce callbacks, customer cancellations and probably save

**Stops the
broadleaf invasion...
...even tough weeds
like veronica,
ground ivy, oxalis,
wild violet, spurge.
New
cost-efficient
weed fighter!**

a round or two of herbicide application.

TURFLON D herbicide is a combination of triclopyr and 2,4-D that will control both the tough and standard weed species without injuring established cool-season

turf such as tall fescue, bluegrass and perennial ryegrass. It is a low-volatile ester formulation designed especially for professional applications.

And it offers reduced potential for off-target injury because of low volatility and little movement in the soil.

Now there's cost-efficient broadleaf control you can count on. TURFLON D herbicide... your first line of defense... for better weed control! For more information, contact your chemical distributor or write: The Dow Chemical Company, 9001 Bldg, Midland, Michigan 48640.



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Circle No. 113 on Reader Inquiry Card



STOP LEAF SPOT FROM THE FIRST OFFENSE TO THE FINAL VERDICT.

Disease is a natural occurrence in nature, which proves that nature isn't as interested in beautiful, playable turf as you are. To overcome nature's little oversight, we present a proven product.

®DYRENE Turf fungicide is proven in control of leaf spot, melting-out, or going-out—popular names for diseases caused by *Helminthosporium (Drechslera)*.

DYRENE works on contact and should be part of any complete program of disease control.

It's compatible with other turf products, plus it provides control of dollar spot, brown patch, copper spot, snow molds, and rusts.

Leaf spot, one of nature's serious afflictions needs serious relief. DYRENE. Always read the label before use.



DYRENE.
**WHEN YOU'RE SERIOUS
ABOUT LEAF SPOT.**



Mobay Chemical Corporation
Specialty Products Group
Box 4913, Kansas City, Mo. 64120

DYRENE is a Reg. TM of Mobay Chemical Corporation.

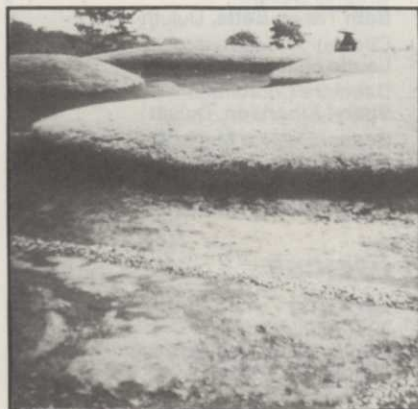
Circle No. 138 on Reader Inquiry Card

WEEDS TREES & TURF

The Magazine of Landscape and Golf Course Management Since 1962

26 Proper Drainage Saves Money

Proper attention to drainage in the initial landscape scheme is paramount to avoiding problems and increased costs down the road.



31 "Short Golf" on Grand Cayman

The world's first "short golf" course sits perched on an island in the British West Indies. Gene Bates built Jack Nicklaus' Britannia and knows only too well the challenges of building a golf course on a swamp.



35 Cayman Controversy Heats Up

Golf course architect Dr. Michael Hurdzan responds to the concept of Cayman golf. Will it revolutionize golf or is it just a way for some designers to make a quick buck?



42 Make Landscape Lighting Shine

Putting your landscape in the best possible light shouldn't be an afterthought. Well thought-out lighting can enhance plant material as well as add atmosphere and safety features to a landscape.

56 ANNUAL INSECT CONTROL GUIDE

Our popular guide to controlling insects returns, updated by Drs. Harry Niemczyk, Patricia Cobb, D.G. Nielsen and J.R. Baker. Turf and woody ornamental insect control are discussed in detail.



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by Bruce F. Shank, executive editor

Warren's expands Sunbelt farms

Warren's isn't getting out of the sod business as Wisconsin and Ohio sod buyers might suspect after Warren's announced they are closing sod farms serving those states. They are actually beefing up their sod operation, but in the Sunbelt.

Steve McLaughlin's energy tells the story about the company's California sod operations. He increased his sales for Warren's by more than 35% in 1984 and told Weeds Trees & Turf the company is leasing more acreage in California this year.

Warren's has also added more than 1,000 acres of production in Cameron, TX, near Austin. "It is our plan to concentrate on St. Augustine first and add zoysiagrass and Adventure turf-type tall fescue later in 1985," says Earl Daniels, farm manager.

General Manager Mike Holmes says the expansion in Texas and California, "is a part of our overall strategy to concentrate our efforts into growth areas of the U.S." Emory Hunter, special products manager, said rising oil prices made the Wisconsin operation less competitive in the Chicago and Milwaukee markets.

New generation aerifier?

Tom Mascaro, one of the developers of the core-type aerifier in the 1940's, may now have a better idea, more than 40 years after his first one. It has no moving parts, cuts six- to eight-inches deep, and is set to be offered by Ransomes in the near future as an attachment to its riding mowers.

Mascaro's former company, West Point Products, developed the core-type aerifier now manufactured by Hahn. The new aerifier cuts a slit in the soil instead of punching a hole. Mascaro has successfully tested his new device on greens.



Mascaro's Second Aerifier makes slits instead of holes and has no moving parts.

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Flexible floater

Glide over fairways, trim around traps with the Jacobsen HF-5

Hop into the comfortable seat of the HF-5. And soar to new heights in lightweight mowing efficiency.

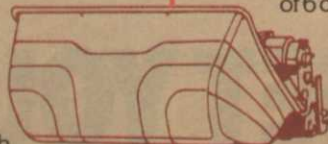
Glide over fairways with free-floating reel units and dual rollers that follow ground contours for a superb, carpet-like cut. And big Softrac tires, just 8 p.s.i. ground pressure, assure precision mowing with a lot less compaction.

Make tight turns easily with Jacobsen's compact design. Hydraulic power steering with adjustable

tilt wheel keeps you in command.

Match mowing speed to terrain conditions with a variable hydrostatic foot treadle. Change tractor speed or stop with a touch of your foot.

And check out these top-flight features: super-durable polyethylene/aluminum grass catchers; heavy-duty hydraulic reels; reversing reels for backlapping; handy lever selec-



tion of 3, 4 or 5 gang mowing; choice of 6 or 10 blade reels; fuel efficient 4-cylinder diesel engine; and a low maintenance design.

Rise to new levels of quality cutting with the HF-5. The flexible floater from Jacobsen.

Lease and finance plans available. Jacobsen Division of Textron Inc., 1721 Packard Avenue, Racine, WI 53403.

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Jacobsen Division of Textron Inc.

Engineered from the ground up.

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GET YOUR CREWS BACK ON COURSE FAST WITH ONE-SHOT ROUNDUP.[®]

Circle No. 139 on Reader Inquiry Card



With Roundup® herbicide, your crews will spend less time controlling weeds and more time keeping greens, fairways and other high-visibility areas up to par.

One-shot, versatile Roundup controls over 100 species of weeds, roots and all, so they won't grow back. That includes nuisance weeds like poison ivy, poison oak and kudzu. With one gallon of 2% spray solution, one man can treat 1,000 feet of fenceline for less than \$2.00*. Or the areas around 30 trees for about a nickel apiece. You can get as much weed control with one treatment of Roundup as you would with up to 6 string trimmings over the course of a season.

Let the versatility of Roundup free your crews from time-consuming mechanical or hand weeding jobs.

AROUND THE COURSE	AROUND THE CLUBHOUSE	HIGH-VISIBILITY AREAS
bunkers rough fairways cart paths	tennis courts swimming pools pathways patios	parking lots entrances steps shrub beds

With Roundup along the edges of the rough areas, you'll improve the looks of your course, plus improve and maintain "speed of play." Players will spend less time hunting for balls lost in dense undergrowth.

More groundskeepers are finding that Roundup is helping to keep their courses looking their best and playing their best—because their crews are giving their best.

FOR A FREE ROUNDUP USAGE GUIDE,
CALL TOLL-FREE 800-621-5800.
IN ILLINOIS, 800-972-5858.

*Based on cost of Roundup alone to treat low-growing vegetation using flat fan nozzles.



Monsanto

Former students honor Dr. Bill Daniel

The Dr. Bill Daniel era at Purdue University is over and a new era begins, the recent Midwest Regional Turf Conference signaled.

Participants, many of them former students, braved blustery March weather to fete (sometimes humorously) Daniel who, during a 34-year stint in central Indiana, carved a reputation as "Mr. Turf" of the Midwest and, together with Melvin Robey, invented the Prescription Athletic Turf system in 1972.

Daniel, honored at two dinners (the first, a get-together with former students, the second a more formal affair in the Purdue Memorial Union), capped his career as an educator and researcher at Purdue. Daniel retired from that university April 30.

"He is a great mentor," says Ted Woehrle, former president of the GCSAA and Daniel's first student in 1950. "He taught me how to think and how to ask the question 'why?'"

Woehrle's comments echoed those of many former students in a bittersweet dinner at The Trails on the banks of the flood-swollen Wabash. The light-hearted affair, emceed by Dr. Jim Beard of Texas A&M, another Boilermaker grad, took on the appearance of a "Who's Who in Turf"



WT&T Executive Editor Bruce Shank honors Daniel as "Man of the Year."

"There were people there from all fields in the turf industry," Dr. Terry Riordan, U. of Nebraska notes. "That's just one indication of the work he's done. He's had quite an im-

pact on my career and on the careers of many people." Dr. Riordan is one of 15 former students Daniel helped guide to Ph.Ds.

continued on page 18



New ASLA headquarters in Washington D.C.

ASSOCIATIONS

ASLA settles into new historic home

A four-year effort to buy an historic building in Washington D.C. paid off for the American Society of Landscape Architects (ASLA).

The ASLA recently took title to its headquarters, a turn-of-the-century townhouse, after raising \$400,000 for the down payment. The Society began the drive to acquire the Victorian-style structure at 1733 Connecticut Ave. in 1980 when it signed a long-term lease with an option to purchase. In 1981, ASLA staff members began working in the extensively remodeled townhouse.

Says ASLA President Robert H. Mortensen: "All of our members can share a real sense of accomplishment." Nearly 3,000 individual members, 600 firms, and most of the ASLA chapters and some suppliers contributed to the building fund.

In 1982, the Washington Metropolitan chapter of the American Institute of Architects recognized the ASLA building for its first award for achievement of excellence in historic preservation and architectural design.

The ASLA has used its headquarters in the nation's capital to expand and consolidate its operations. The Society's staff has grown from seven to 30 in just seven years, and The Landscape Architecture Foundation is now also located at that address. Members of the Society's publishing staff, which produces the periodicals *Landscape Architecture* and *Garden Design*, moved from Louisville to the D.C. headquarters last year.

The American Society of Landscape Architects is a voluntary professional society serving the landscape architects across the country. Started in 1899 by 11 landscape architects, it now numbers over 7,000 members.

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, cleated-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.

BOOKSTORE



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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. **\$37.95**

345-COST DATA FOR LANDSCAPE CONSTRUCTION 1984
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. **\$28.75**

395-LANDSCAPE ARCHITECTURE
by John Ormsbee Simonds
A Manual of Site Planning and Design. This long-awaited second edition outlines and analyzes the complete landscape process from site selection to finished project. In simple and clear terms, it describes various planning constraints imposed by the forms, forces and features of the natural and built landscape. **\$37.50**

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. **\$22.95**

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 turf grasses are described in non-technical 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. Topics covered include Site Design and the Landscape Industry, Graphic Communications, Landscape Symbols, Residential Landscape Design Portfolio, Design Principles and Elements, Multifamily Site Design. **\$28.95**



625-ADVANCES IN TURFGRASS ENTOMOLOGY edited by H.D. Niemczyk and B.G. Joyner
A complete account of the facts presented at the 1980 Symposium on Turfgrass Insects. 200 photographs, tables and graphs make this volume an indispensable reference for anyone connected with the turfgrass industry or research. **\$24.95**

010-ADVANCES IN TURFGRASS PATHOLOGY by Dr. B.G. Joyner & Dr. P. 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**

645-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. **\$24.95**

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. **\$22.95**

615-TURF MANAGEMENT FOR GOLF COURSES by James B. 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 operations including course design and construction, turf management, course administration, irrigation, equipment and disease and pest control. Fully illustrated. **\$45.00**

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. **\$18.00**



110,120-TURF MANAGERS' HANDBOOK by Drs. William Daniel and Ray Freeberg
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