



TOTAL TURF CARE IS HERE!

Dacthal®

Start your Total Turf Care this year with Dacthal W-75 herbicide. Or use the convenient 5 percent granular form if you like.

Dacthal gets the jump on most annual grasses and broadleaf weeds. This preemergence herbicide prevents weeds as they germinate. Crabgrass and *Poa annua* don't have a chance. Yet, Dacthal is a truly selective herbicide that will not affect established grass. It's even safe for new grass when used according to label directions.

Just one application in early spring will control weeds for a full season. In the case of *Poa annua*, another application in late summer keeps this late germinating pest out of sight.

Don't worry about residue build-up either. Dacthal degrades in one season; it's not persistent in the soil.

Dacamine®

For those areas where broadleaf weeds are a problem, use Dacamine Turf herbicide to sustain your Total Turf Care. Postemergence Dacamine kills dandelion, plantain, poison ivy, knotweed and other broadleaf weeds.

Dacamine is an oil soluble diamine form of 2,4-D which is formulated to

Get a full course of protection against weeds and disease.

be used *only* with water. It combines the weed-killing power of an ester with the safety of an amine. Dacamine stays put—kills the weeds you spray it on but won't vaporize and damage valuable plants nearby. Its unique formulation penetrates waxy weed foliage—then moves all the way to the roots, killing the whole plant not just the top.

Daconil 2787®

Total Turf Care includes broad-spectrum disease control. Daconil 2787 is the one fungicide that solves most disease problems. Why use a group of fungicides to do what Daconil 2787 can do by itself?

Use Daconil 2787 to prevent or cure: Brown Patch, Copper Spot, Dollar Spot, Leaf Spot, Melting Out, Red Thread and more. Many leading golf courses use Daconil 2787 in their disease prevention program.

Daconil 2787 has performed well on over 25 grass species and varieties. Excellent turf tolerance allows you to use it even in hot, humid weather.

Just mix Daconil 2787 with water and spray. You don't need a surfactant. It's compatible with many commonly-used pesticides. Follow label directions for exact usage.

Daconate®

Round out your Total Turf Care with Daconate postemergence herbicide. Get those escape weeds that slipped by your preemerge. Daconate will effectively control crabgrass, chickweed, wood sorrel and other hard-to-kill weeds. It's economical, too.

Daconate is a ready-to-use arsonate liquid, pre-mixed with the right amount of surfactant for maximum coverage and control. Since it is an organic arsenic compound, it does not have the more toxic properties of inorganic arsenic compounds, such as calcium or lead arsenate. For best results, spray Daconate during warm weather when weeds are actively growing.

Ask your turf chemicals supplier for more information or write: Agricultural Chemicals Division, Diamond Shamrock Chemical Company, 1100 Superior Avenue, Cleveland, Ohio 44114.

Be Diamond Sure!



**Diamond Shamrock
Chemical Company**

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Buy a Chipco[®] something, get a Chipco[®] something else absolutely free.

Why are we doing this?

To help you save money. But, we have something else in mind, too.

Chipco is the best group of products you can use for an effective turf management program.

And we know once you use Chipco anything, you'll soon be using Chipco everything else.

If you buy:	You get free:	If you buy:	You get free:
24 lbs. Chipco Spot Kleen	1 gal. Chipco Turf Herb. MCPP (\$ 9.85 value) Or 6 lbs. Chipco Thiram 75 (\$ 6.84 value) Or 1 gal. Chipco Spread Act. (\$ 6.70 value)	30 gal. Chipco Turf Herb. MCPP	1 gal. Chipco Buctril (\$18.54 value) Or 3 gal. Chipco Turf Herb. D (\$13.62 value) Or 15 lbs. Chipco Thiram 75 (\$17.10 value)
10 gal. Chipco Buctril	6 lbs. Chipco Thiram 75 (\$6.84 value) Or 1 gal. Chipco Turf Herbicide MCPP (\$9.85 value) Or 1 gal. Chipco Turf Kleen (\$7.52 value)	15 gal. Chipco Turf Kleen	1 gal. Chipco Spread Act. (\$6.70 value) Or 1 gal. Chipco Turf Herb. MCPP (\$9.85 value) Or 6 lbs. Chipco Thiram 75 (\$6.84 value)
		10 gal. Chipco Microgreen Liquid	1 gal. Chipco Turf Kleen (\$7.52 value) Or 1 gal. Chipco Spread Act. (\$6.70 value) Or 1 gal. Chipco Turf Herb. MCPP (\$9.85 value)

Chipco Buctril[®] controls broadleaf weeds in newly planted grasses for sod or seed production.

Chipco Turf Herbicide MCPP controls clover, chickweed, knotweed and other surface creeping weeds and is safe and effective for use on most bent grasses.

Chipco Turf Kleen controls broadleaf and surface creeping weeds with a wider margin of safety around trees and shrubs.

Chipco Spot Kleen is a new systemic fungicide for control of dollar spot, Fusarium blight, large brown patch, copper spot, and stripe smut.

Chipco Thiram 75 prevents and controls large brown patch, dollar spot and snow mold.

Chipco Microgreen Liquid provides long lasting deep green color, more root growth and less desiccation.

Chipco Turf Herbicide D is a general purpose broadleaf herbicide ideally suited where economical control is desired.

Chipco Spreader Activator is a superior adjuvant to increase the efficiency and effectiveness of turf chemicals.

Note: offer expires April 1, 1974.

Chipman Division of Rhodia, Inc., 120 Jersey Avenue, New Brunswick, N.J. 08903



WEEDS TREES and TURF®

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James A. Sample
Editor

Hugh Chronister
President

Arthur V. Edwards
Publisher

D. D. Langley
Director of Circulation

ADVERTISING SERVICES

Darrell Gilbert
Advertising Production Manager
9800 Detroit Ave.,
Cleveland, Ohio 44102
Tel. 216+651-5500

ADVERTISING SALES OFFICES

Headquarters
Cleveland, Ohio 44102
9800 Detroit Ave./216+651-5500
Ext. 27

New York, New York 10017
757 Third Ave./212+421-1350
Russell Bandy

"Serving The Green Industry"

- \$20 Thousand In Savings Through Labor Management** 14
Superintendent Chet Wender, Plainfield Country Club, tells how he is coping with rising costs on all fronts — labor, equipment, chemicals.
- Dormant Brush Control With Less Oil** 16
If your business includes dormant spraying, you are probably feeling the fuel oil shortage about now. Here's a way to use dormant sprays with less oil.
- Green Grows The Business In Ohio** 18
A report on one of the largest and best attended Ohio Turfgrass Foundation Conference & Show in the history of this dynamic organization.
- Service To Industry** 22
What does the National Arborist Association's Home Study Program mean to the students? This article tells it like it is.
- Green Is For Go** 65
Comptroller for the State of Maryland, Louis L. Goldstein, tells sod producers in that state the importance of their business to the state's economy.

PULL OUT SECTION: Herbicides — Where Is The Market?

- Custom Application** CC
An interview with Wayne Carruth, turf products manager, Diamond Shamrock, about the business of custom application.
- Golf Courses** FF
Stan Frederiksen of Mallinckrodt Chemical Works looks at the golf course market for the custom applicator.
- Utility Weed Control** JJ
Weed control along transmission lines represents a continuing market for the custom applicator. Richard E. Abbott, Ohio Power Company, reports on the potential.
- Aquatic Weeds** SS
Custom application to control aquatic weeds is becoming more important daily. Jack Murnighan, Pennwalt Corporation, reports on this gigantic new market for spraymen.
- Commercial Turfgrass** TT
Public transportation routes account for much time and expenditure in weed control. A Pete Nicas, Ciba-Geigy Corporation, examines this vitally important market.
- Highway Weeds** VV
Green grass rates high with homeowners, business and industry. Gary Johnson, Elanco Products Company, talks about this developing market.

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The Cover

Highway weed control includes the use of environmental protection chemicals and modern mowing equipment. The tractor shown here sports a belly-mounted sickle mower and a trailing flail mower.

THE COVER — Pull Out Section

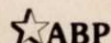
Weeds and experts make up a big part of the Green Industry. We put them together for this special pull out. Just in case you don't recognize it, the weed is knotweed. Photo was taken just after emergence of this pest.

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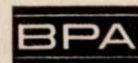
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**TORO**[®]

A TORO automatic sprinkler system stays out of sight, out of mind while people enjoy your park or recreation area. But when they go home, TORO goes to work . . . solving all your irrigation problems.

NIGHT CREW—With one turn of a dial on a central controller, you can program a TORO system to go on long after everyone's gone home. And TORO's gear-driven heads are silent . . . so the only noise your "neighbors" hear are the crickets.

NO MORE PUDDLES — TORO's exclusive valve-in-head sprinklers eliminate line drain puddles and damaged turf. And TORO has made repeat-cycle watering practical. So you automatically get just the right amount of water for your soil and terrain.

THE VANDAL HANDLERS—TORO heads pop up a high 2³/₈" (640 series, especially designed for parks) . . . then pop down *below* ground surface, preventing vandalism, mower damage and even serious acci-

dents. There are no protrusions to tamper with . . . or to stick out like sore thumbs on your healthy turf.

HARD TO ABUSE, EASY TO USE—TORO heads are made of indestructible CYCOLAC[®], and they're self-contained and sealed so a few grains of dirt or a stray leaf can't bring things to a halt. But TORO heads are easy to service . . . from top to bottom instead of vice versa. Easy to install with minimum turf disruption. And easy to convert with TORO's big, adaptable assortment of head sizes and variations.

50 YEARS OF PROBLEM SOLVING—TORO's been solving turf care problems for over half a century. And we're still coming up with innovative solutions to special problems. We'd like to take a crack at yours . . . through our network of expert distributors or with more detailed information. Just write TORO Irrigation Division, Dept. W-274, P. O. Box 489, Riverside, CA 92502.



*“I’ve played this course
for a year and
I haven’t seen a bad patch
of turf yet.”*

“Funny, I was thinking the same thing!”



Compliments on the quality of your turf management are always nice to hear. They make all those long hours of challenging work seem even more rewarding.

Speaking of compliments, we have a way that can help you earn more of them: the Du Pont TERSAN® 1-2-3 Disease Control Program.

Kudos from the greens committee.

With TERSAN LSR applied in the spring, TERSAN 1991 in the summer and TERSAN SP in the fall, you control all major turf diseases on all common turf grasses all season long. Helps keep your turf lush, green and resilient from the day the course opens till the day it closes.



Applause from the finance committee.

Read the label on each bag of TERSAN and you'll be surprised at how little you have to use and how long the protection lasts. Take TERSAN 1991, for example: a systemic, curative (eradicant) and protective fungicide. Just 1 ounce per 1000 sq. ft. applied every 10 to 14 days controls dollar spot on tees.

The TERSAN 1-2-3 Program is also designed to stop costly disease problems before they have a chance to cause trouble. So you get fewer tie-ups of men and equipment, more budget dollars saved.

Praise from your toughest critic.

As a turf professional, the standards you set for yourself are the most demanding of all. With the TERSAN 1-2-3 Program, you can come closer to meeting these standards and win praise from your toughest critic—yourself.

For complete information on this program and a supply of TERSAN turf fungicides, contact your golf course supplier.

With any chemical, follow labeling instructions and warnings carefully.



TERSAN 1-2-3 DISEASE CONTROL PROGRAM

Editorial

Positive action taken by the House of Representatives has pushed the Federal Noxious Weed Bill into committee in the Senate. This represents a massive step forward. The need for a law curtailing the movement of noxious weeds is long overdue. The bill currently rests with the Committee on Agriculture and Forestry.

In essence, the bill would limit the importation or distribution in interstate commerce of weeds considered by the Secretary of Agriculture to be undesirable. Without forming a definite opinion at this point, let's see what this means.

Almost daily, dealers in Florida ship exotic plants to customers cross state lines. Riding the coattails of these plants are troublesome and dangerous weeds such as water hyacinth, alligatorweed and hydrilla. In no time these plants become firmly established and adapted to a new environment where they reek havoc. One only has to recall how southern grown hydrilla was found in Iowa to understand the gravity of the situation.

Further, noxious weed seed because of its size can easily slip through even the most delicate screening process and be transported in a bag of turfgrass seed. Or foreign produced seed or other host parasites can slip past Federal inspectors at ports of entry. We certainly have enough domestic

Noxious Weed Law – Who Needs It?

weeds to control without the introduction of foreign species for which no control is available.

Senate Bill 2728 would clip the wing on these elusive noxious weeds. If passed, Agriculture Secretary Butz in protecting agriculture, commerce or public health could regulate the movement of weeds and make it stick with a penalty of \$500 and/or imprisonment. It would be accomplished in three ways: 1. stop the means of conveyance into the U.S. and inspect for noxious weeds; 2. stop the means of conveyance moving through the U.S. or interstate and inspect for noxious weeds; 3. enter, with a warrant, any premises in the U.S. for purposes of any inspections or other actions necessary under the Act.

We believe that passage of this Bill is important. Already a resolution for adoption has been submitted to the Southern Weed Science Society. It also has the approval of the Weed Science Society of America. In plain terms, we need it. The five billion dollars or more lost to weeds each year is something we must correct. Our future as a dynamic country depends on the limits we place on undesirable plants entering our country and the transportation of these weed bandits through interstate commerce. We urge strong local support through active senator-voter communications.

Certified

Manhattan

Turf Type
PERENNIAL RYEGRASS

Manhattan perennial ryegrass was selected and developed by Dr. C. Reed Funk, Rutgers University. Manhattan develops a uniform dark green, leafy, dense turf with leaf blades finer than most Kentucky bluegrasses. Excellent for hard use areas such as tees, green aprons, cart path flare areas and hard use problem areas. Mowability ratings are excellent.

■ Exclusive Marketing ■
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Manhattan blends well with other grasses. Here it is combined with Bluegrass.

Manhattan is outstanding for hard use areas. Cartpath flare area reseeded with Manhattan perennial ryegrass.

It's Kid Proof!

Manhattan's fine texture is illustrated in this comparison.

Left: FINE LEAF FESCUE
Center: MANHATTAN PERENNIAL RYEGRASS
Right: KENTUCKY BLUE GRASS