

Toro has a sprinkler fo



# Playing fields that's out of sight.



People run across lots of different sprinklers in the parks, playgrounds and stadiums of America. One is made so they don't run an extra risk while doing it. The TORO 640 pop-up head.

When a Toro automatic system is installed on your field, the 640 pop-up heads are buried below turf level. They pop up during watering. Then disappear out of sight. And out of the way.

We designed this head of rugged, non-corrosive plastic and stainless steel. And its exposed surface area is minimized. In fact, conventional sprinklers measure up to seven times the exposed surface area of the TORO 640.

Anyone responsible for a field knows only too well that vandals find it hard to resist sprinklers. Which is another reason why we made the TORO 640 hard to find. And even harder to damage. It's built so tough that we can



back it with a seven year limited warranty. Features like a gear drive permanently sealed in oil and a stainless steel riser help it stand up to years of use and abuse.

The TORO 640 is part of a fully automatic system that can be programmed to water at times that are best for growing a healthy playing surface. That's usually at night, when no players are around.

So if you're interested in both improved safety and more playable turf, you're on solid ground when you install Toro automatic irrigation. Call our Larry Hagen on his 24-hour number, (714) 359-0700, for information on a Toro system with 640 pop-up heads. They're out of sight.

The Toro Company, Irrigation Division, P.O. Box 489, Riverside, CA 92502. International Telex: 676-490.

Circle 116 on free information card



IRRIGATION DIVISION

# Introducing

# RAM I

KENTUCKY BLUEGRASS

## -a shade better...and better in the shade.

RAM I was found growing on the ninth putting green at Webhannet Golf Club in Maine. There it grew vigorously though consistently mowed at  $\frac{1}{4}$ ". It was selected by Mr. Ernest W. Brown, superintendent, in consultation with Alexander M. Radko, National Research Director, USGA Green Section. The original plant was submitted to Dr. C.R. Funk at Rutgers University for further evaluation and testing. University testing proved this new variety to have superior qualities.

Having been selected and tested by two of the leading turf specialists, RAM I is now brought to you by two leading seed companies.

Available through your nearest Lofts or Jacklin distributor.

Test results available on request.

- Thrives, even in the shade.
- Gives faster spring green-up when compared with other Kentucky bluegrasses.
- Is very competitive against *Poa annua* even when mowed under  $\frac{3}{4}$ ".
- Has improved disease resistance — especially to stripe smut and powdery mildew.



**Lofts  
Pedigreed Seed, Inc.**  
Bound Brook, New Jersey 08805

## Jacklin Seed Company

Route 2, Box 402, Post Falls, Idaho 83854

Circle 148 on free information card



RAM I Kentucky bluegrass is in no way connected  
RAM I of the Colgate Sports Group of Companies.

# WT&T

# CONTENTS

AUGUST 1979/VOL. 18, NO. 8

**Bruce F. Shank**

Editor

**John Kerr**

Assistant Editor

**Ron Morris**

Technical Editor

**Robert Earley**

Lawn Care Editor

**Scott Scredon**

Reclamation Editor

## Business

**Richard J.W. Foster**

Publishing Director

**Richard Gore**

National Sales Manager

**David J. Slaybaugh**

Executive Editor

**Clarence Arnold**

Research Manager

**Chris Simko**

Advertising Production

## Corporate Officers

**James Milholland Jr.**

Chairman

**Hugh Chronister**

President

**Bernie Krzys**

Sr. Vice President

**Dayton Matlick**

Sr. Vice President

**Charles Quindlen**

Vice President



Copyright © 1979 by the Harvest Publishing Co., a subsidiary of Harcourt Brace Jovanovich, Inc. All rights reserved. No part of this publication may be transmitted or reproduced

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. Address: 9800 Detroit Ave., Cleveland, Ohio 44102.

Single copy price \$1.25 for current and back issues. Foreign \$1.50. Subscription in the U.S. and Canada are \$12.00 per year. \$15.00 in other countries. Foreign air mail optional at an additional \$24 per year. Controlled circulation postage paid at Cleveland, Ohio 44101. Postmaster: send form 3569.

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.

Letters	8
Landscape Contractor News	12
Government News	14

## GREEN INDUSTRY NEWS

Pacific Horticultural Trade Show to Stress Indoor Tropicals . . . International Garden Show Set for Cologne, Germany . . . Japanese Beetles Cause Airport Limitations . . . U.S. Pesticide Market Pegged at \$5.1 Billion. 10

## FEATURES

### Chain Saw Safety Linked to Technique, Size

A preview of a brand new audio/visual program produced by the National Arborist Association. A list of ten other programs available is presented. 16

### Precautions for Out of Season Digging

Extension horticulturist Maria Cinque explains necessary precautions for digging and moving plant stock in hot and dry months.

### Rising Costs Spur Growth Regulator Use

Dr. Ray Freeborg of Purdue University provides a history and characteristics of today's growth regulators. Starting with auxins and showing the original work was intended to increase plant growth. 25

### Penn State Test Show Pros and Cons of Growth Regulators

Dr. Thomas Watschke describes information obtained from research at Penn State over the past eight years. 32

### Pistons and Rings Indicate Engine Maintenance Needs

Part three of the Summer Equipment Series. Kohler's Paul Scholten provides diagnosis of engine problems from pistons and rings. 38

Vegetation Management	41
Proscapes	43
Products	48
Classifieds	55
Events	60
Advertiser Information	62

**Cover:** From just released audio/visual program by the National Arborist Association on Chain Saw Safety and Use.



For the turf you care for: proven protection against nine damaging diseases from America's leading fungicide for turf. Now a 500 gram per liter flowable formulation.

# Daconil 2787



Daconil 2787 is the broad-spectrum fungicide that helps you fight such problems as dollar spot, gray leaf spot, large brown patch and red thread. Easy to handle with great flowability. Disperses quickly in the spray tank. Effective even in hot weather. Daconil 2787 also provides effective disease control on a number of ornamentals. Now in a new 500 g/l formulation.

**Diamond Shamrock gives you all the help you need for weed problems, too.**

**Dacthal®** is the preemergence herbicide that controls more than 20 weeds and unwanted grasses. Stops early and late germinating weeds without affecting healthy,

growing turf grasses. Tough weeds like crabgrass and Poa annua can't stand up to Dacthal.

**Dacamine®** gives postemergence control of over 70 broadleaf weeds including dandelion, annual chickweed, knotweed and Canada thistle. Kills 'em right down to the roots so they won't come back.

**Daconate®** is the postemergence herbicide that knocks out nutsedge, chickweed, wood sorrel, sandbur and other grassy weeds. It's a ready-to-use liquid herbicide with a built-in surfactant for uniform wetting.

For beautiful turf and ornamentals, count on the big four from Diamond Shamrock to make your job easier.



**Diamond Shamrock**  
The resourceful company.

Circle 112 on free information card

See your turf chemicals supplier, or contact the Diamond Shamrock Agricultural Chemicals Division sales office nearest you:  
Three Commerce Park Square, 23200 Chagrin Blvd., Beachwood, OH 44112 • 1760 The Exchange, Suite 100, Atlanta, GA 30339 • 5333 Westheimer, Suite 850, Houston, TX 77002 • Commerce Plaza Bldg., 2015 Spring Rd., Oakbrook, IL 60521 • 617 Veterans Blvd., Redwood City, CA 94063.



## LETTERS

**Let Bergland Know!**

I am very pleased with the support of the Cooperative Extension Service you espoused in your editorial in the June issue of WTT. It is right on the mark!

Being a Horticulturist myself, and having my staff responsible for the educational aspects of the very successful GREEN INDUSTRY Seminars in the Detroit area, as well as being involved in educational programming with the metropolitan Detroit Landscapers Association, the Michigan Association of Nurserymen, the Michigan Turf Foundation, the Sod Growers Association of Michigan, the Metropolitan Detroit Flower Growers Association, Michigan Forestry and Parks Association, and others, most of which we were instrumental in forming, I can appreciate your sentiments exactly.

Keep up the good work. The Appropriations Bills, from both the House and Senate, have still to be acted upon. The House Appropriations Committee reported out a requested increase, above the President's Executive Budget, of \$16 million for Extension and \$11.5 million for agricultural teaching. Obviously this \$16 million is considerably short of the \$41.5 million we thought was conservatively needed, using only a 7% inflation factor.

This week the Senate Appropriations Committee will deliberate and we are attempting to have them add another \$4.5 million to the Extension budget. This is a tight budget year, and well it should be, but when we have a proven winner, such as the Cooperative Extension Service, in helping American citizens it doesn't make much sense to cut so deeply we find it extremely difficult to effectively function.

It might do a lot of good, for the FY 81 Budget, to let the Secretary of Agriculture Bob Bergland know how WTT feels about the Extension budget. The allocations of dollars within the USDA budget may well be where we can make the most gain and the time is NOW!

Thanks for your concern and help.

Donald D. Juchartz  
President  
National Association County Agricultural Agents

As a County Agent who works closely with the turf and ornamental horticultural industry, I appreciate your "Viewpoint" on Extension in the June 1979 issue of "Weeds, Trees and Turf."

While Extension may not be the purveyor of all information, many people do not realize that research findings often are passed on indirectly by Extension Agents or Specialists.

I hope the Green Industry will respond to your editorial.

E. V. Chadwick  
Extension Director  
Pennsylvania State University  
Wilkes-Barre, PA 18702

We heartily endorse your opinion expressed in "Viewpoint" in the June issue of Weeds, Trees and Turf. We need all of the help we can get if we are going to be able to continue receiving appropriations from the Congress to fund the important areas you point out in your "Viewpoint."

We are particularly pleased that you will be publishing news about Association efforts in Washington. We have been on this firing line for a long, long time and have been trying to stimulate grass roots' assistance with varying degrees of success over the years.

Actually, in view of budget limitations, overall we have been quite successful in getting money for horticultural programs. As of right now it looks like we will not suffer the budget cuts you were aware of when you wrote your "Viewpoint." Congressman Whitten, who is Chairman of the House Appropriations Committee and is a very strong individual indeed, is insisting that all research cuts be restored in Conference. We are strongly supporting his effort.

For whatever interest it may be, I have enclosed a copy of the American Association of Nurserymen testimony on the subject of agricultural appropriations. You will find that we dwelled at some length on the problem facing State Experiment Station Research.

One other point which involves terminology. In your "Viewpoint" you used the term "ornamental and turf" several times. I would like to suggest your consideration of using the term "environmental" in place of ornamental. We have been trying to spread this word for several years and have made some progress. I have enclosed an excerpt from testimony before the Agricultural Appropriations Subcommittee given some years ago. This is proof enough of the need for getting away from the term "ornamental." I think environmental plants is an all encompassing term that you may consider. It would include turf also. Turf too, has its image problem when it comes to getting money for research from the Federal government. The less we get specific, the better off we are.

We are most anxious to work with you and will welcome any contacts your reporters would like to make with us, either personally or over the telephone. We try to keep abreast of all legislative matters affecting the industry, and when we cannot give an answer right away, we will surely chase it down and get back to you as soon as possible.

Robert F. Lederer  
Executive Vice President  
American Association of Nurserymen, Inc.  
Washington, D.C.

I've delayed over-long in writing to commend you on the editorial concerning the loss of experiment station personnel to industry — mostly turf oriented. It is a grave situation! In pirating good turf people away from the universities, industry realizes that they are getting highly trained individuals. The industrial people can outbid univer-

# Weeds Trees & Turf FREE INFORMATION

Want free information on products and services advertised and featured in this issue? Use this card. Circle the numbers on which you want information and mail today.

101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120
121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140
141	142	143	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	160
161	162	163	164	165	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180
181	182	183	184	185	186	187	188	189	190	191	192	193	194	195	196	197	198	199	200
201	202	203	204	205	206	207	208	209	210	211	212	213	214	215	216	217	218	219	220
221	222	223	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239	240
241	242	243	244	245	246	247	248	249	250	700	701	702	703	704	705	706	707	708	709
710	711	712	713	714	715	716	717	718	719	720	721	722	723	724	725	726	727	728	729

NAME \_\_\_\_\_ TITLE \_\_\_\_\_

COMPANY \_\_\_\_\_ TELEPHONE \_\_\_\_\_

ADDRESS \_\_\_\_\_

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

Do you want to receive Weeds Trees & Turf?  YES  NO  
If you are interested in receiving or continuing to receive WEEDS TREES & TURF? If you are, complete all the information on this card and mail today.

TELEPHONE \_\_\_\_\_ SIGNATURE \_\_\_\_\_

What is your primary business/industry? (Check one only)

- |   |   |
|---|---|
| <input type="checkbox"/> Rights-of-Way Maintenance (highway, utility, railroad)           | <input type="checkbox"/> Airport Grounds Maintenance                  |
| <input type="checkbox"/> Commercial/industrial contract chemical applicator               | <input type="checkbox"/> Military Installation Maintenance            |
| <input type="checkbox"/> Aerial applicator  | <input type="checkbox"/> Land Reclamation/Erosion Control Specialists |
| <input type="checkbox"/> Extension Services/Federal or State Regulatory Agency            | <input type="checkbox"/> Lawn Care Ccompany                           |
| <input type="checkbox"/> Parks or Grounds Management (Federal, State, Municipal) Forestry | <input type="checkbox"/> Lawn Maintenance Company                     |
| <input type="checkbox"/> Golf Course Management   | <input type="checkbox"/> Landscape Contractor                         |
| <input type="checkbox"/> Cemetery Grounds Maintenance                                     | <input type="checkbox"/> Landscape Architect                          |
| <input type="checkbox"/> Industrial Park Grounds Maintenance                              | <input type="checkbox"/> Sod Grower                                   |
| <input type="checkbox"/> Shopping Centers Grounds Maintenance                             | <input type="checkbox"/> Seed Grower                                  |
| <input type="checkbox"/> Hospital, Nursing Home (grounds maintenance)                     | <input type="checkbox"/> Tree Service Company/Arborist                |
| <input type="checkbox"/> School, College and University (grounds maintenance)             | <input type="checkbox"/> Wholesale nursery                            |
| <input type="checkbox"/> Athletic Fields Management                                       | <input type="checkbox"/> Tree Farm                                    |
|   | <input type="checkbox"/> Dealer/Distributor                           |
|   | <input type="checkbox"/> Other (Specify) _____                        |

If you are not personally receiving WEEDS TREES & TURF and want your own subscription, circle number 101. Subscription price is \$12.00 per year. U.S. and Canada.



NO POSTAGE  
NECESSARY  
IF MAILED  
IN THE  
UNITED STATES

## BUSINESS REPLY MAIL

FIRST CLASS

PERMIT NO. 2675

CLEVELAND, OHIO

POSTAGE WILL BE PAID BY ADDRESSEE

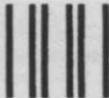
ATTENTION: THE EDITORS

## Weeds Trees & Turf

9800 Detroit Ave.

Cleveland, Ohio 44102





NO POSTAGE  
NECESSARY  
IF MAILED  
IN THE  
UNITED STATES

**BUSINESS REPLY MAIL**

FIRST CLASS

PERMIT NO. 665

DULUTH, MINN

POSTAGE WILL BE PAID BY ADDRESSEE

**Weeds Trees & Turf**

Box 6049

Duluth, Minnesota 55806



**My question or comment to the editor is . . .**

**Weeds Trees and Turf** is glad to answer your questions or publish your comments on any green industry topic. Questions will be answered by industry experts in the Vegetation Management or Proscapes columns. Comments will appear in the Letters or Viewpoint columns.

READER FEEDBACK CARD

NAME

TITLE

COMPANY

ADDRESS

CITY

STATE

- you may publish this letter with my name.
- do not publish this letter.
- you may publish this letter with my initials, and city.

sity administration because the very people they are hiring have helped them to make the kind of money by which they can raise the bid.

Industry has a moral responsibility, an obligation, to help finance the graduate students who must be trained to replace the people who have been hired away from the colleges. Every industrial firm engaged in "turf-for-profit" (equipment, irrigation, seed, sod, chemicals, fertilizer, etc.) could afford to budget a given amount each year to donate (tax-free) to the industry foundations to help train these replacements.

Fred V. Grau  
President  
Musser International Turfgrass Foundation  
College Park, MD

I serve as head of a department that is primarily horticulture, but with some forestry, and my own background is in physiology and culture of vegetable crops. I am very supportive of work in the area of ornamental horticulture or the "green industry" as you call it, and I especially appreciated your "Viewpoint" in the June 1979 issue. I think you are right in believing that only continuous pressure from the industry and its consumers will get a fair share of research and extension effort devoted to this area. The picture today is quite in contrast to that of the late sixties and early seventies when everyone was wanting to ride the "environmental horse" to greater support for their pet area. I certainly wish you success in your efforts.

I have tried to gain a broad viewpoint and some knowledge of all areas of horticulture since becoming department head. Your June 1979 issue of Weeds, Trees and Turf was full of information that I have digested. In fact, I don't know when I've seen a trade magazine with more information in it. Congratulations.

George Bradley  
Professor and Head, Horticulture  
University of Arkansas  
Fayetteville, AR

## Don't Meddle With Intrusion.

As a practicing urban forester, I feel compelled to reply to an article in the June, 1979 issue of WT&T, "Urban Forestry Suspected as Intrusion".

I work for the Virginia Division of Forestry, a state agency, as a Forester-Planner. As the title implies, I spend a good deal of my time working with state, regional, and county planning organizations to conserve the forest resource of Virginia. The rest of my time, however, is spent practicing urban and community forestry.

My job responsibilities include all the technical assistance programs mentioned in the article plus some others, including:

- promotion of all Division of Forestry programs, including forest management and forest fire protection,
- providing technical assistance to individual's or groups wishing to undertake environmental projects; eg. greenbelts, wildlife areas, parks, soil

erosion and sedimentation prevention, watersheds, etc.

- review and comment on all Environmental Impact Statements concerning the forest resource in rural and urban areas
- education of the public in complying with State Water Quality guidelines known as Best Management Practices (BMP's) in accordance with Federal legislation 92-500, the Clean Water Act.

What do these have to do with this magazine article? You have assumed that we "urban foresters" are meddling in the affairs of practicing arborists. We are, first of all, foresters; and as such most of our concern is placed on the forest resource as a whole. We have no intention of interfering with private enterprise, especially arboriculture, which concerns itself with the care and maintenance of urban trees. Rather, it has been my experience that our work promotes the work of arborists. Any tree ordinances that we may help to write and implement for communities encourage tree care and thus provide work for tree care firms. Whenever we provide any insect and disease control recommendations to the public, we also recommend the use of arborists (we are not allowed to suggest specific companies or individuals) to implement these controls. Finally, any municipally-owned forest land that we develop management plans for usually belongs to a municipality that requests our assistance or cannot afford a municipal arborist of its own.

Mr. Felix has suggested, according to your article, that the moneys provided for urban forestry under the Cooperative Forestry Assistance Act may lead to the formation of a federal agency to regulate the "urban forest" industry. In these times of federal budget cuts and government penny-pinching, do you think this argument is valid? Five pages previous to this article, you are encouraging action to stop the loss of Agricultural Extension personnel. Why then are you "biting the hand that feeds you" in this article? Foresters should not be "suspected", as you put it, of intruding into the world of arboriculture. We are an information source, as extension personnel are, and can work together with arborists to provide a valuable service to our urbanizing population.

Matthew J. Simons  
Forestry-Planner  
Commonwealth of Virginia  
Sandston, VA

*Take a good look at OSHA, EPA, HEW. Good intentions in every case, but tremendously harmful implementation at the cost of American business. Mr. Felix wasn't implying that the person, the urban forester, is the intruding party. Rather, he rightly projected past bungling in Washington, D.C. to arboriculture in cities. He warned of the possibility of poor implementation. He is saying, look before you leap bureaucrats.*

*Please don't confuse our stand on urban forestry with extension horticulture. They are separate issues despite overlap. In fact, it is the same bungling that is threatening to seriously reduce extension help to Green Industries, that can derail good intentions to restore forests to our cities. The Editor*

# GREEN INDUSTRY NEWS

## SEED

### Ryegrass purity test subject of debates

Three debates among administrators of the Federal Seed Act, perennial ryegrass growers, breeders and distributors, have taken place in the last eight months over the reliability of a fluorescence test for off-type perennials and annual ryegrass in fine turf type perennial ryegrasses such as Manhattan and Pennfine.

The first debate took place at the Golf Course Superintendents of America Show in Atlanta last winter. The second occurred during a symposium in Oregon in April, and a third in Washington, D.C., in June at the American Seed Trade Association's meeting.

Controversy centers around a test added to seed label regulations in

1972 which was further described in a letter of explanation by Federal Seed Act Administrator Clyde Edwards in 1973. The addition to the regulations required that the label should specify percentage of fluorescence on the seed tag.

The regulations have never been enforced and the test and the regulations are now the subjects of debate among regulators, growers, breeders and distributors.

In the test, suspected off type seeds, are germinated and the seedlings placed under ultraviolet light. The concept is that the fine-leaved perennial ryegrasses will not fluoresce, and annual and off-type ryegrass will. The significance of the test and how its results should be

listed on the label are just two of the points of controversy.

The result of the debates was a resolution passed by the American Seed Trade Association asking for a moratorium on the regulation until a study of the test and its effectiveness can be made.

## CHEMICALS

### Swift Ag Chemical renamed Estech Corp.

In an effort to build an awareness of Estech Corp., a division of Esmark Inc., and to minimize confusion between food and chemical divisions, Swift Agricultural Chemicals Corp. has been renamed Estech General Chemicals Corp.

Swift entered the commercial fertilizer business in 1899 and introduced Vigoro brand fertilizers for the homeowner in 1924. Swift is a major marketer of fertilizers to the turf industry. A few products will retain the Swift brand name.

Other companies owned by Esmark include Swift & Co., Vickers Energy Corp., International Playtex, STP Corp., and Pemcor.

### Jim Brooks joins Golf Business staff

Well-known former director of marketing for the Golf Course Superintendents Association of America Jim Brooks has joined Harvest Business Publications Golf

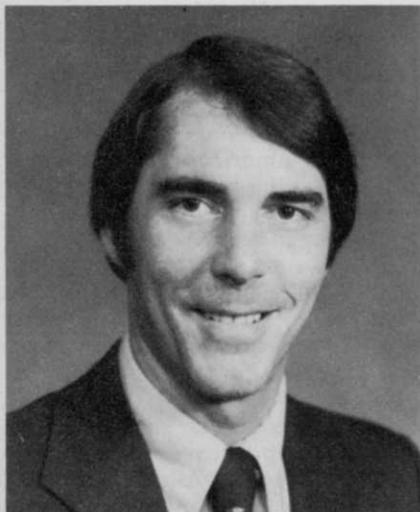
Business staff as sales manager.

Publishing Director Dick Foster announced the move in June. Brooks' contribution to GCSAA was substantial as director of sales and marketing for Golf Course Management magazine and manager of the increasingly popular GCSAA Turf Show held annually in the winter.

Brooks' office is located in Harvest's new Atlanta sales and marketing complex.

Ron Morris, technical editor of WEEDS TREES & TURF has been promoted to managing editor of Golf Business and will produce the publication from the Cleveland office.

Foster also announced publication of a new product magazine for the wholesale and retail nursery industry in August. Titled Nursery Product News, the new publication will be edited by Dave Slaybaugh and marketed from the Atlanta complex.



## SEED

### Bluegrass, tall fescue to rise in price

Bad weather in the Northwest and market conditions for tall fescue seed in the Midwest will result in increased prices this fall, according to seed industry sources.

Bluegrass losses have been estimated by some at 75 percent of this year's production in Oregon, Washington, and Idaho seed fields.