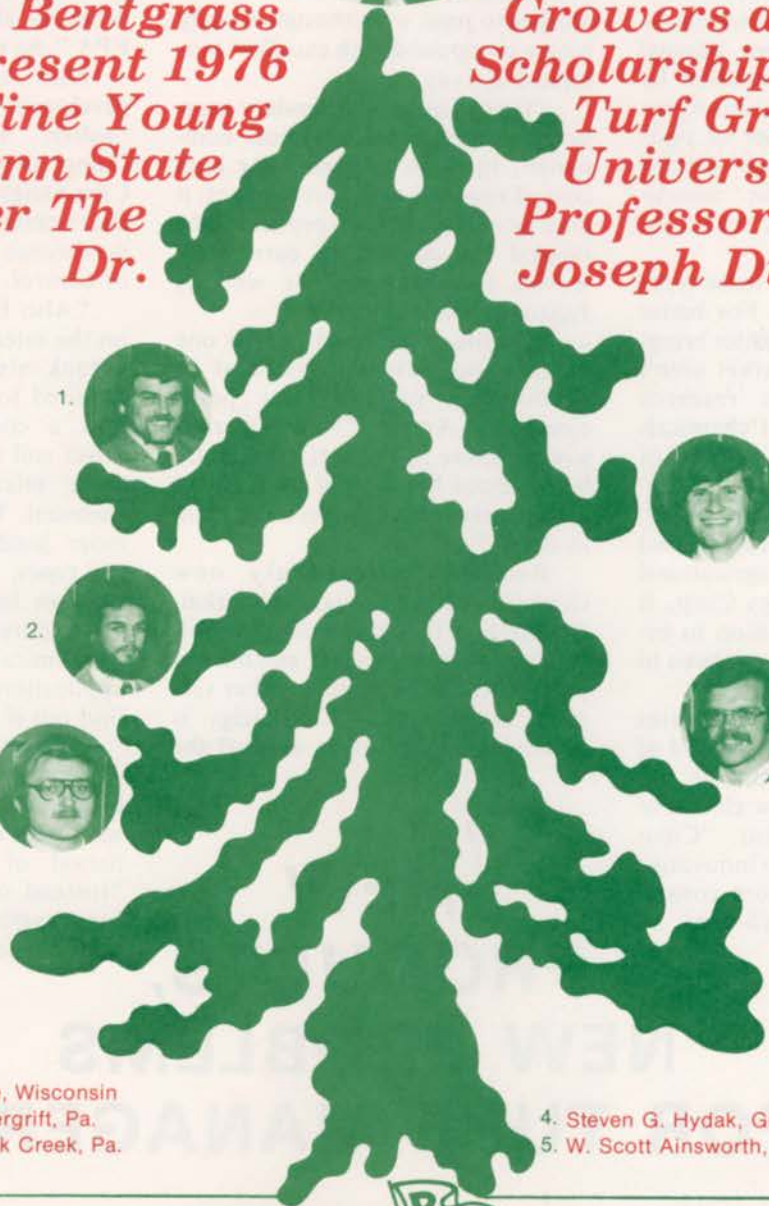


# There's More to the Grass Seed Business than Making a Dollar!



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There's More to the Grass Seed  
Business than Making a Dollar

## The trend is away from persistent insecticides

Days are numbered for environmentally persistent insecticides. Some chlorinated hydrocarbons which were employed extensively by turf managers have been banned and others are being contested by the Environmental Protection Agency (EPA). Also a number of pests have built up resistance toward chlorinated hydrocarbon insecticides — Japanese beetles are an example.

The trend away from these types of products is apparent. For better or worse, chemical companies bringing new products to market aren't likely to spend much research money on new persistent chemicals to replace those banned because of EPA opposition.

According to Dr. Wayne Arthur, vice president of research and development for the agricultural division of the Ciba-Geigy Corp., it currently costs \$8-10 million to bring one compound from synthesis to the marketplace.

"Many chemical companies won't be willing to risk that kind of money on long-shot, though innovative, research on new classes of compounds," says Arthur. "Ciba-Geigy will continue to do innovative research, but will be more conservative in assessing whether to develop a compound.

"Cost, safety and the effect on the environment have to be taken into consideration and are major hurdles to pass, even though we may have a compound with excellent biological activity.

"Turf is often a secondary market in the eyes of chemical companies. In order to justify the high cost of research and development, it may be necessary for a product to be labeled for control of corn rootworm, for example, as well as Japanese beetle.

"On the other hand, turf is one of the applications considered in development of each new pesticide," says Arthur. "New materials with promise in the turf market are being tested by us right now. But it is too early for me to describe them in detail."

Because fewer truly new chemicals will be brought to market, Arthur says that turf managers will be making more use of established products like Diazinon or other versatile compounds. "Ciba-Geigy is making more effort to expand the

labeled uses of such established products. Major research dollars have already been spent and those products already are registered by EPA," he explains.

New turf pesticides being developed for the future will be "softer," according to Dr. Haney Camp, director of biochemistry at Ciba-Geigy. Softer pesticides will be characterized by less environmental persistence and narrower spectrum of control.

"Also EPA is asking us for data on the interaction of chemicals used as tank mixes," says Camp. "We are required to do extensive studies on how a combination of chemicals affect soil microorganisms and how these microorganisms affect the chemical. We must do pH studies, more leaching studies on various soil types, and hydrolysis studies to see how fast they break down. We are required to trace the movement of chemicals, if any, from the site of application to adjacent streams and find out if residues build up in fish.

"The time is fast approaching when a single product will no longer be available that controls several insects with one application for a long period of time," observe Camp. "Instead one product will be used for a narrow range of insect species. It will need to be applied several

# NEW PRODUCTS, NEW PROBLEMS FOR TURF MANAGERS



times a year and even then will probably have to be applied against the most susceptible stage of pest development."

For example, one application of chlordane gives many years of control of grubs. But when using an organophosphate like Diazinon, applications may be required every year.

Narrow-spectrum products mean more work for turf managers and for chemical manufacturers. Historically, one product might control several insect species. In the future a tank mix of several products might be needed to do the same job.

According to Dr. Richard Miller, extension entomologist at Ohio State University, use of short-residual compounds requires a lot more expertise on the part of turf managers.

"With a chlorinated hydrocarbon, turf managers don't have to be quite so careful about observing the fine points of rates and application techniques because of the nature of the material," notes Miller.

"With some of the popular short-residual organophosphates,

special care must be taken. Many products need to be watered in thoroughly to get the material down to the insects. Too heavy a thatch layer, not enough water, or improper application techniques can all contribute to insect-control failure," reports Miller.

Miller outlines some basic principles turf managers should follow when using a short-residual chemical control program:

1. Every week inspect all turf areas, paying special attention to trouble spots. "Turf managers must take the time for thorough inspections," states Miller. "Turf is difficult to keep up with because of the many different insects and diseases that can abound during the year."

2. Identify turf problems quickly and accurately to determine whether the culprit is an insect or a disease. "If the wrong diagnosis is made, money is wasted on the wrong treatment," says Miller. "University extension entomologists, county agents, chemical manufacturers and distributors are more than willing to help when identification of a turf pest is in question."

3. Once the pest is diagnosed,

the appropriate product should be applied.

4. Application techniques often make the difference between success and failure. Proper rates, watering-in methods, and wind speed affecting distribution of the chemical, are some of the factors that need to be carefully observed. "The best insurance for good control is to follow the labeled instructions. Most of the failures I'm acquainted with aren't related to the material, but to the person who applies it," reports Miller.

5. Accurate records should be kept regarding what insects were controlled, when the chemical was applied and which chemical was used. "Taking it even further, it's wise to record the lot number of the chemical," advises Miller. "Sometimes chemicals get produced at plants where something went wrong. With good records, it can help experts determine the cause."

Times are changing, chemicals are changing and turf management will change as well. "More professionalism on the part of pesticide users can go a long way towards muting the demands of those who shortsightedly promote a total ban on all chemicals," says Miller. □

*Dixie Cassell extracts pesticide residue from crop sample in Ciba-Geigy's Greensboro, N.C. labs.*





*New charm for an old*





# Boston landmark



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## A beautiful new tree-lined mall for Fanueil Hall Marketplace

In the city of Boston, tradition is almost taken for granted. Yet in late August, 1976, an event was staged that brought new excitement and a resurgence of interest in Boston's downtown area that is unique to the city.

Exactly 150 years to the day it first opened, the Marketplace at Fanueil Hall re-opened. It had taken more than 10 years of planning, design and development by various agencies, departments and the Rouse Company of Baltimore to restore the buildings which house the marketplace adjacent to Boston's famous Fanueil Hall.

Inside the original buildings, the Rouse Company has provided space for vendors of all kinds of food-stuffs, offices, restaurants and shops. Outside, between the two buildings and leading to the steps of Fanueil Hall itself ("where it all began" 200 years ago), a new pedestrian mall beautifies the area. In fact, some 25 shade trees, benches and seating, plus romantic gaslights make the mall an attractive haven for visitors throughout the day and evening.

It took Frost and Higgins — specialists in tree care for almost a century — to get the large trees moved and installed before opening night. And because of the historical significance of opening night — 150 years to the day of the original opening — installing the trees was almost as dramatic as the rebuilding of the entire project.

To illustrate: Of the 25 trees to be emplaced, 22 are honey locusts. With 7-10" diameter trunks, each tree with root ball weighed about 15,000 pounds. Because of the extreme heat of New England's late August, the trees were moved entirely at night. This meant over-the-

road hauling from New York State, where they were grown. After the ten-hour ride from New York, the trees were thoroughly watered at Frost and Higgins' main yard in suburban Burlington, Mass.

The next night, the trees were trucked into Boston and installed during darkness. Under normal conditions, moving and installing the trees would have been a delicate operation. Complicating the task was, naturally, a heat wave, plus a severe lack of rainfall during the entire moving period, as well as the mounting pressure of that deadline.

The deadline was important because the trees had to be in place prior to cobblestone paving, which was the last step before opening. As the first ten trees were installed, there was another problem. The excitement of the new Marketplace was becoming contagious. While the trees were being gingerly moved into place by a massive specially designed tree crane, cameramen and reporters from Boston's TV stations and newspapers were running around, through and over the site for "dramatic shots" for the late news and next-morning editions.

But in spite of the TV cameras (complete with hot lights) and the hundreds of workmen swarming throughout the project to complete it on-time, the trees were installed . . . one full week ahead of the official deadline.

The installation required six nights of labor, working from dusk (about 9:00 PM) until almost dawn. But when the new Fanueil Hall Marketplace opened, 22 Honey locusts and three little leaf Lindens were standing proudly in their new home. It is expected that these shade trees will grow to mature heights of about 35 feet each. □





# How to protect your turf from the world's toughest critic: the golfer.

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**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** is a broad spectrum herbicide that controls broadleaf and surface creeping weeds with a wide margin of safety around trees and shrubs.

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

**Chipco Thiram 75** prevents and controls snow mold, large brown patch and dollar spot. Used with Spot Kleen, it offers a complete disease control program.

**Chipco Microgreen Liquid** prevents chlorosis which results in 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 quality adjuvant to increase the efficiency and effectiveness of turf chemicals.

**Chipco Crab Kleen** gives economical and selective post-emergence control of crab grass, chickweed and other grassy weeds in established turf.



Rhodia Inc., Agricultural Division, Monmouth Junction, New Jersey 08852



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# THE GREEN INDUSTRY/ a self portrait

In this series of exclusive interviews, numerous Industry leaders talk candidly about the Green Industry 1976-1977.

**JOHN NUNES**  
**NUNES TURFGRASS NURSERY**  
**PATTERSON, CA.**

*"On the West Coast we have seen one of the best years in the past several. Machine customers seem to be pretty happy with turf sales and building has not suffered here as it has in other areas of the country. Because of the climate here, we have a year 'round business and our emphasis has been on developing new techniques in marketing and advertising. Actually with a large market there is more pressure to promote our products and improve our public relations. . . ."*

*"Next year we will begin marketing a new machine which will lay synthetic netting and seed underneath new turf. The netting will act as a root system, and should increase the maturity time for turf. We have finished a number of test plots with considerable success and we are looking forward to another good year."*

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**JAMES LINCOLN**  
**SOUTHWEST HYDRO-MULCHERS**  
**DISTRIBUTING CO.**  
**DALLAS, TX.**

*"Hydro-mulching has typically in the past been used in erosion control and has been a reasonably good substitute for hay and straw mulching. We are seeing more and more use of hydro-mulching on home lawns, business properties, in city parks, and in almost all facets of the landscape industry. This growth is particularly noted where sod has been used at high cost. I think we'll see a lot more use of hydro-mulching in the landscape industry. We have a long way to go but I think we'll see a lot more of it in getting a bigger chunk of the turf market."*

**PETE MILLER**  
**FIRESTONE COUNTRY CLUB**  
**AKRON, OH**

*"In turf care we have seen sort of a backward move. Because of the development of resistant strains, we have gone back to some of the older chemicals. People are going to have to realize that they can't use one chemical longer than one season or two at the most. In turf plants we seem to be going ahead in some areas such as with bluegrasses and ryegrasses. We seem to have developed some good and useful strains. The bentgrasses seem to be at a standstill. The vegetative strains seem to have fallen apart completely. Actually there just isn't the research money in turfgrass that there should be. . . ."*

*"From a business standpoint, superintendents are going to have to be much more cost conscious with equipment and supplies in the future. The superintendents' association has got to get the move on in symposia to educate. Certification testing is a good move, but an empty one without the educational benefits that go along with it. Certification doesn't mean anything if you're not keeping up."*

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**RICHARD FIELDS**  
**INDUSTRIAL VEGETATION**  
**CONTROL MANAGER**  
**VELSICOL CHEMICAL**  
**CORPORATION**  
**CHICAGO, IL.**

*"There has been an availability of funds for vegetation control in the railroad industry which we haven't seen for several years. I believe that this is a function of a general upturn in the economy for the railroads which has been reflected in the*

*availability of more monies for maintenance. We have also seen a good deal of federal monies being allocated to the railroads.*

*"As far as Velsicol is concerned, we have developed and have an experimental permit for a new soil residual herbicide for grass and broadleaf weed control. Hopefully we will be introducing that with full label registration with the hope that it would be of major consequence in the industry. . . ."*

*"In the utility market, things seem to be easing up financially. Rate increases have alleviated what was an extremely depressed market in control programs. It seems that when monies are tight, maintenance is the first area which is cut. I would look for a positive trend in the next few years based on the realization of the industry that maintenance is an indispensable part of responsible and well-planned growth."*

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**TOM SCHILTZ**  
**DIRECTOR OF EDUCATIONAL**  
**AND TECHNICAL SERVICES**  
**SPRINKLER IRRIGATION**  
**ASSOCIATION**  
**SILVER SPRINGS, MD.**

*"We have been pushing for the licensing of irrigation contractors as a quality control measure. We are faced with a lot of moonlighting. In order to separate the weekenders from the professionals, we need some measures like this. . . ."*

*"Technically, more and more we are getting into wastewater application which will be a tremendous asset to the ecology and to the industry. Once this product is approved, I feel that it will be extremely marketable and useful to the entire green industry. . . ."*

*"One of our most important projects here will be in the education of architects and others with respect to*



irrigation techniques. Very few universities have irrigation programs. People shy away from industrial programs because they feel they might be sold something. I feel that it is our responsibility to bring the various facets of the industry together through education."

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**BRUCE CAMENGA**  
**MANAGER OF TECHNICAL SERVICES**  
**THE TORO COMPANY**  
**RIVERSIDE, CA.**

"We have been addressing the task of setting standards for testing procedures for irrigation equipment. Designers and users are faced with the problems of a lack of operational definitions of products by manufacturers from catalogue to catalogue. We need uniformity of criteria for describing products and listing figures in the books about irrigation products. . .

"We're trying to make the figures in the catalogue more believable. We must sell our products with integrity. Standard methods of testing and of reporting test data will go a long way towards accomplishing this."

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**RICK RANDALL**  
**RANDALL AND BLAKE, INC.**  
**ENGLEWOOD, CO.**

"We have directed most of our energies towards mining reclamation projects. We have gotten into some aerial seeding by helicopter. In reclamation products we have had considerable success with a new plastic extruded netting which is placed over erosion agents such as straw or hay to hold it on inaccessible areas where you can't crimp it. . .

"In addition to pursuing our mining reclamation interests, we will also have a good percentage of work coming from the highway. One other area that we will be into as far as reclamation is concerned is in experimental test plots for universities and corporations who are involved with oil shale on high altitude and dry land revegetation."

**THOMAS STEWART**  
**EXECUTIVE DIRECTOR**  
**ASSOCIATED LANDSCAPE CONTRACTORS OF AMERICA**  
**MCLEAN, VA.**

"What we've found in the last two years is that due to the general slowing up in the construction industry our landscape contractors have had to cultivate new markets. One of the most important new markets is in maintenance. Many existing landscaping companies are adding maintenance divisions; there are entrepreneurs who have contracting companies that are starting maintenance firms. Municipalities are turning to maintenance contractors to perform work that their own staff used to do. . .

"Another area that people have become involved in is interior landscape contracting. It is a new industry, and more and more new buildings are going up that to emphasize plant materials. The scale of this work is such that florists are getting into installation, or landscape contractors are picking up that business. . .

"Possibly the worst of the construction industry's problems are over and some contracts are beginning to come back. One thing that did occur as a result of bad times was the formation of the National Construction Industry Council. The organization is trying to impact government from the construction trade standpoint to speak with one voice. We are very interested in seeing this develop so that there is more representation of the construction trades in Washington."

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**ROBERT F. LEDERER**  
**EXECUTIVE VICE PRESIDENT**  
**AMERICAN ASSOCIATION OF NURSERYMEN**  
**WASHINGTON, D.C.**

"We have seen a mixed bag of results in the past year. Although the economic end of our industry seems to be in good health, I feel that nurserymen have suffered somewhat from our own complacency. We are nearing the end of the green industry boom which was aided by great

support from Mrs. Johnson during the Johnson years vis-a-vis the various beautification programs. . .

"We need more professionalism and better merchandising techniques. We all have to become experts in all phases of our industry so that we can educate and communicate with our customers. Green survival is a concept which encompasses a myriad of things. If we can put in people's minds some tangible sense of what green products can mean to them personally, we will have come a long way. I hope that we are headed in this direction in the future."

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**RICHARD READE**  
**MID CONTINENT AIR CRAFT CO.**  
**HAYTI, MO.**

"The trend this year has been towards the certification of applicators based on state law, under pressure from the federal law. This has caused a tremendous increase in expenses for operators but also an increased professionalism. And the groundwork has been for the continued expansion and use of aircraft in the application of pre- and post-emergent herbicides. That, coupled with the increased development and use of fungicides on wheat, soybeans, and rice, has highlighted our year. . .

"The green light that was given NASA to promote and expand their knowledge of the agricultural aviation industry to improve the state of the art and this should have long term impact on the industry. This seven- or eight-year program will help us improve dispersal systems and related flow systems around the aircraft. This should have greater impact in improving the quality of application work than anything since the advent of organic chemicals after World War II."

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**FARRELL HIGBEE**  
**EXECUTIVE DIRECTOR**  
**NATIONAL AGRICULTURAL AVIATION ASSOCIATION**  
**WASHINGTON, D.C.**

"We have been increasing our

## THE GREEN INDUSTRY

business at an approximate rate of 12 percent. This year was a bit below that because of drought in many parts of the country. The number of operators and aircraft has remained about the same with about 8,000 planes and about 3,300 steady operators. . .

"With the introduction of the turbine-powered aircraft this year we have a greater horsepower capability in a lighter unit. This has enabled us to do an ever increasing amount of herbicide work on corn and soybean with greater efficiency. Growth regulators are also becoming a big part of our business. . .

"Our operators are looking at a greater market for their service. If prices remain stable and the export market continues to grow we ought to do quite a bit of work next year."

**HYLAND JOHNS JR.**  
**SENIOR VICE PRESIDENT**  
**ASPLUNDH TREE**  
**WILLOW GROVE, PA.**

"We need to identify research needs in the green industry so that we can establish our priorities in development. In order to implement our research findings we must feed our results to the practitioners out in the field so that they can utilize the technical developments that are occurring, by government and private industry. . .

"In arboriculture, we would like to establish an information clearinghouse. In our industry, maybe 10 percent of the people belong to the International Society of Arboriculture. I would like to see a liaison among green industry people to advance our collective knowledge, particularly with reference to advocacy of our needs to mold government intervention in business and industry. . .

"We must educate the public as to what we are doing and why. Granted, we need to do a better job at self-regulation. At the same time I think that through better public relations we can make people aware of our in-

tentions to serve them without offending the environment."

**TOM WEATHERS**  
**DIRECTOR**  
**ALTON PARK AND**  
**RECREATION COMMISSION**  
**ALTON, IL.**

"We have a tree program here in Alton which I feel is among the best in the nation. If we can create green spaces and prevent our cities from becoming asphalt jungles, we can do a great deal for the morale of our cities. Our efforts have been in the area of making people aware of the visual image of their urban environments. In this regard we have created a 645-acre 'green buffer' on the edge of our city complete with recreational facilities. The monies for this have come from donations from foundations and personal gifts. . .

"Citizen input in making decisions with our green spaces has been extremely valuable. When we held a meeting, the citizens were invited to discuss the view into the park. They told us 'please don't cut down our bushes and trees.'"

**TROY SCARBOROUGH**  
**SCARBOROUGH GRASSING INC.**  
**BROOKSVILLE, FL.**

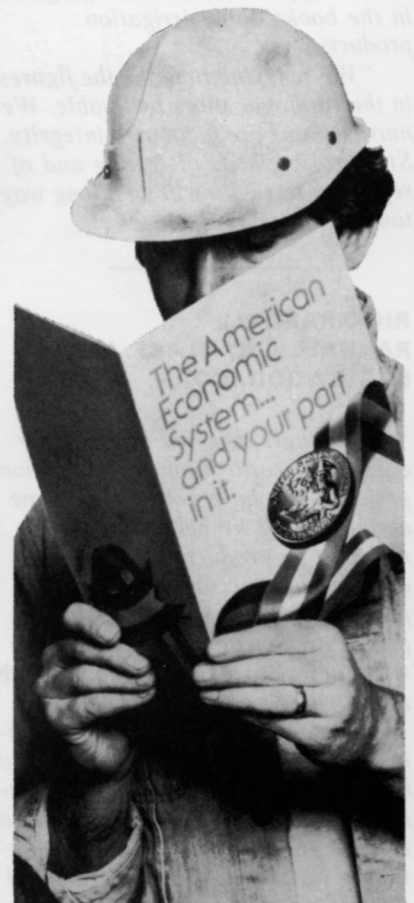
"Our business in Florida has been hurt this year by the overbuilding of condominiums and single family housing. It has become a glutted market, and the banks and REIT's have been hurt badly. New construction is almost at a standstill and you can imagine what that has done to the grass and turf market down here. . .

"I hope for the sake of the construction industry, that we can get some help from the new administration in Washington. If the unions have their way with the 'common situs' issue, it would be an awful blow to our business."

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