VAPAM® GOES UNDERGROUND TO HELP YOU DIG UP NEW PROFITS.

Your customers may not know there's a simple way you can wipe out the weeds, diseases, nematodes and insects that lurk underground in their gardens.

Now you can help them clean out these pests with one application of Vapam soil fumigant. It's easy to apply. And it's a new way for you to increase your income and the services you offer. Cost to you is only about $10 for enough Vapam to treat a 20' x 20' area. And you'll have no problem profitably billing your clients for this simple but valuable service.

You can do it easily with a hose-end sprayer — or even a watering can. Just apply two weeks ahead of time to put seed or plants into the garden. And always use Vapam before you do new landscape plantings. It'll pay off in better looking landscaping.

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Their plants will be healthier. And you'll be wealthier.

For the name of your nearest supplier, contact the Stauffer sales office shown at left. Always follow label directions carefully.

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Stauffer Chemical Company
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Circle No. 131 on Reader Inquiry Card

TREES DESERVE PROTECTION FROM HARMFUL INSECT PESTS

Insects will attack a stressed tree in the urban environment just as they will attack a sick or old tree in the forest, according to Dr. Dave Nielson, entomologist at the Ohio Agricultural Research and Development Center (OARDC) in Wooster.

"The problem," says Nielson, "is knowing when the insect population will change from harmless to destructive. "It's important to identify the harmless insects as well as the harmful ones. If you don't know, call your exte.ısion agent for advice. Then apply insecticides when insects reach a harmful level."

Some of the harmful insects reaching serious populations are the gypsy moth, Japanese beetle, birch leaf miner, eastern tent caterpillar, elm leaf beetle, the spring cankerworm and the elm span worm. All of these harmful insects can be controlled with applications of Imidan® from Stauffer Chemical Company, Sevin®, malathion, diazinon, Dursban®, Orthene® or Dipel®.

"Imidan is fairly new to the arborist, but it has a successful record in the fruit growing area," says Dr. Richard Miller, extension entomologist at Ohio State University in Columbus. "it made its debut in fruit, controlling codling moth, green apple aphid, maggots and others. It is a relatively safe material and covers a pretty good range of insects for the arborist and the pesticide applicator of landscapes. One of its greatest benefits is its safety to the user as well as to beneficial insects. That's important to an up-to-date insect control program."

Insect control is a major part of tree care. Many countries around the world put a higher price on the value of trees than here in North America. In Vienna, Austria, you can be fined as much as $25,000 if you are caught chopping down a tree that isn't yours.

Landscape architects in this country say a well-placed, mature shade tree in good condition adds more than $1,000 to the value of a home. Studies show a thick evergreen windbreak can block out noise pollution from a busy street, hide an eyesore, and save nearly 25 percent on winter heating bills. Customers should be educated to the value of trees and ornamentals. They should be calling you to solve a problem rather than a fence company.

Once they know you'll apply insecticides only when necessary and use insecticides that are safer than others, they'll trust their valuable trees and shrubs to you for other services.

®signifies registered trademark.

Arborists and tree care companies guard 20 percent of the value of their customers' property.

YOU DESERVE TO TAKE TWO OR THREE MONTHS OFF.

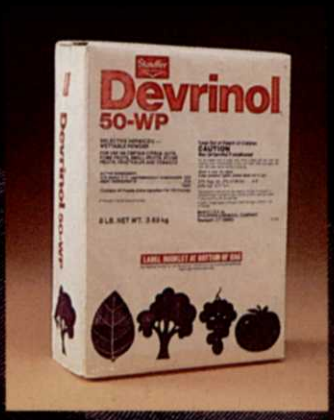
Not from landscaping or ground maintenance, but from call backs for weeds in ornamentals. Which is what Devrinol® herbicide protects you against.

With remarkable safety to flowers, shrubs and trees, one application in the spring (or fall) keeps weeds out for months. And that keeps you out of ornamentals for months.

Devrinol delivers long-lasting control because it resists leaching in rain, and chemical breakdown when the weather heats up.

So take a vacation from weeds. Apply Devrinol to ornamentals once. And maybe spend the time pitching new customers instead.

Stauffer Chemical Company, Agricultural Chemical Division, Westport, CT 06881. Follow label directions.



Stauffer CHEMICALS **DEVRINOL**

THE ONCE-IS-ENOUGH WEED CONTROL

Stauffer Chemical Company
Agricultural Chemical Division
Westport, Connecticut 06880

***Sod webworm resistant plots** of perennial ryegrass stand out at Rutgers test site.*

Insect Resistant Turf

Presence of endophytic fungi in ryegrass show increased insect resistance.

Seed companies may be able to help managers of golf course and landscape turf in the near future by enhancing the insect resistance of ryegrass.

Recent discoveries by Dr. C. Reed Funk of Rutgers University and others have established resistance to bill bugs and sod webworms by ryegrass when endophytic fungi are present in plant tissue. The fungi were first found in ryegrass in New Zealand in the 1940's. New Zealand scientists have since noticed ryegrass containing the fungi resisted attack by the Argentine stem weevil.

Dr. William Meyer, well-known turf breeder for Turf Seed, Inc., Hubbard, Oregon, believes the viability of the fungi may be affected by storing seed more than one year after production. He says this may require seed producers to start new generations of breeder and foundation seed more often than currently practiced to maintain the insect resistance in the seed. The fungi is spread only by seed transmission. As Meyer states, "The discovery of the endophytic fungus in ryegrass and its association with insect resistance is certainly the topic of the day."

Dr. Funk and Dr. Richard Hurley, vice president of Lofts Seed Co., Bound Brook, N.J., presented a paper to the Forage and Turfgrass Endophyte Workshop held in Oregon in May. Excerpts from their paper follow.

Recent discoveries associating the presence of endophytic fungi, living within the tissues of a host plant, with plant resistance to a number of serious insect pests will require important modifications in current methods of seed production, storage, labeling, and breeding.

The benefits of endophyte-enhanced pest resistance (EEPR) must be weighed against occasional adverse affects of endophyte containing plants on the health and performance of animals consuming such plants as a major part of their diet. We may want endophyte containing verieties in turf and other non-food plants.

Scientists working in New Zealand were the first to demonstrate an endophytic fungus was associated with resistance to the Argentine stem weevil, an important pest of pastures, turfs, small grains, and maize. They also showed non-endophyte containing plants were gradually eliminated from pastures as endophyte infected plants survived and dominated. The relationship between the fungi and perennial ryegrass is symbiotic.

Recent studies have demonstrated resistance to sod webworms attacking perennial ryegrass in New Jersey was associated with the presence of endophytic fungi. Twelve perennial ryegrasses were rated as having high resistance to sod webworms in the trials.

Resistance of perennial ryegrass to the bluegrass billbug has also been reported. It is likely such a unique resistance mechanism might well enhance resistance to many other insects and possibly fungal pathogens (diseases).

In nature, endophyte infected plants are very common in perennial ryegrass and tall fescue. Ryegrasses containing the *Lolium* endophyte have been selected from old turfs in widely separated areas of the United States. The endophyte is found in varying frequencies in commercially available perennial ryegrass cultivars.

Some popular turf type perennial ryegrass varieties had high frequencies of endophyte when they were originally released. In many instances, however, some or all of the seed lots of these varieties have lost most of the endophyte.

Endophytic fungi can be transmitted by both vegetative propagation of the host plant or through seed. It has been observed that endophyte viability can be lost by normal seed storage practices within a period of less than two years. Viability can be maintained by cold, dry storage conditions. This requires special attention to seed production, storage, and seed labeling practices. The seed industry needs to evaluate the costs versus benefits of new practices.

Plants containing certain endophytes might produce substances which could have adverse effects on the health and performance of animals consuming these plants under certain conditions. It may be necessary to limit the use of plants containing certain endophytes to non-food uses and to properly identify and label such materials.

It is possible endophytic fungi might be involved in host plant response to many additional insect, disease and neamtode pests. This makes it important to identify, stabilize, maintain, and properly label endophyte containing varieties.

Techniques for artifically inoculating plants with endophytic fungi have not been perfected to date. Such techniques would be helpful to the plant breeder but are not critical to the success of programs designed to develop and maintain endophyte containing varieties.

WTT

Endophyte Levels in Perennial Ryegrasses.

Variety	High	Moderately High	Moderate	Low
All*Star		x		
Birdie II		x		
Citation				x
Citation II	x			
Cowboy		x		
Dasher			x	
Delray			x	
Derby			x	
Diplomat				x
Elka				x
Gator				x
Linn			x	
Manhattan				x
Omega				x
Palmer			x	
Pennfine			x	
Pennant	x			
Prelude		x		
Premier		x		
Regal	x			
Repel	x			
Ranger				x
Yorktown II				x

AVAILABLE For Winter Over Seeding

Manhattan II guarantees greener turf or greenbacks.

Breakthrough.

Manhattan II's astonishing density surpasses any other ryegrass you can buy.

Ten years of careful research and testing has resulted in a ryegrass that's so dense, it gives you up to 40% more green grass, seed for seed, compared to other turf-type ryegrasses. What does it mean for you? Read on!

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Manhattan II is not only beautiful, it's beautifully practical. Because of its unusual density, it actually crowds out weeds. So it needs less herbicides. And it cuts clean and sharp, with no frayed leaf tips.

Ball sits up so pretty, it's almost like teeing up on the fairway.

Tough.

Manhattan II has very good resistance to Rhizoctonia brown patch, leaf spot, crown rust and stem rust. Add drought and heat tolerance and you've got a turfgrass that's tough and persistent.

Greener turf or greenbacks.

If you don't agree that Manhattan II is everything we say it is: denser, greener and tougher than the ryegrass you're using now, we'll send you a check for $50.00. Ask for complete details.

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Circle No. 118 on Reader Inquiry Card

LANDSCAPE MANAGEMENT

In the Hot Seat

With condominium and apartment starts up, landscape managers strive for communication and education while balancing the need for outside landscape contracting.

As the popularity of apartment, and especially condominium living continues to grow, landscape managers are finding communication and education two of their greatest allies. Communication seems to be the key to working with the sometimes unyielding condominium boards. Education of owners and association members in making them aware the bottom line isn't always in the best interest of maintenance procedures. Good maintenance procedures can translate directly into better resale value.

Good maintenance procedures can translate directly into better resale value.

These were some of the findings of an informal survey done by WEEDS TREES & TURF among apartment and condominium landscape managers.

One thing is clear, condo and apartment landscape managers are in a hot seat. Not only are condo starts up, but on the average, condo managers are responsible for 126 acres (WT&T survey figure) pointing to the tremendous growth potential of the market. Figures from the Community Associations Institute, a national, nonprofit membership education organization for people involved in creating, managing or governing condos or homeowner associations, show condos increasing as a percentage of total new sales.

James Dowden, executive vice president of CAI, estimates some 65,000 association communities (condos and townhouse communities) in the United States with about 35,000 of those in condominiums alone.

The Avance Mortgage Corporation estimates 20 to 25 percent of all new sales this year will be in condominiums and in some areas such as Florida, California, Chicago, New York, Washington, D.C., Denver, Atlanta, Houston and Dallas, as much as 50 percent.

"Condominiums first started big in Florida and California," said Dowden. "But now, other states are catching up, especially where single family home prices have escalated past the reach of the average buyer."

The Avance Mortgage Corporation estimates 20 to 25 percent of all new sales this year will be in condominiums and in some areas . . . as much as 50 percent.

The average condominium buyer is a first-time buyer, single or a childless couple (either young or retirement age), paying under $50,000 for their unit.

Dowden said roughly two-thirds of all condos have some form of professional management, and roughly 32 percent do it through boards. The majority, he said, contract out for maintenance because the average condominium in the United States is 100 units in size, too small to justify its own landscape management staff.

Roughly two-thirds of all condos have some form of professional management, and roughly 32 percent do it through boards.

That brought up another concern that surfaced in the WT&T survey. There is increasing competition from landscape maintenance contractors. One respondent said his budgeting process had gotten more involved and complicated each year largely due to the increase in competition.

The highest rated survey categories serviced by outside landscape contractors were turf herbicide application, insecticide application, tree trimming and spraying and flower and ground cover care. Most in-house functions were turf trimming, fertilizer application, turf seeding and turf aerifying.

Tree-spraying was one of the least done in-house functions.

The majority of condo facilities own their own equipment.

continued on page 60

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WITH A BUILT-IN LIFE PRESERVER.

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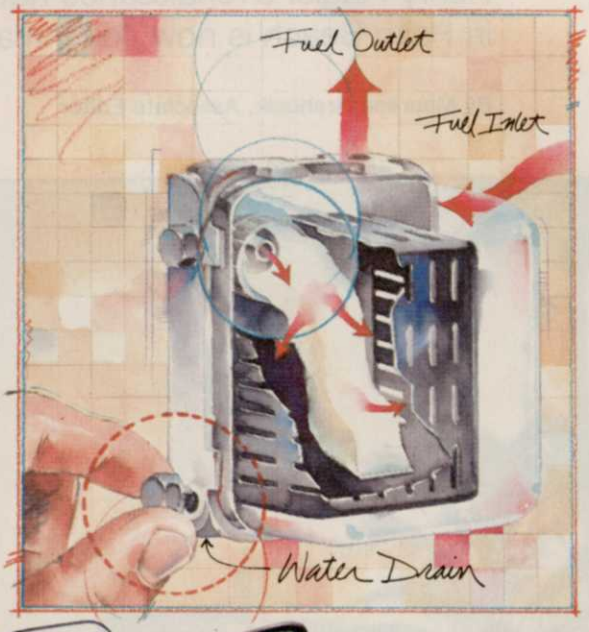
A mower that keeps you cutting. Gets the job done.

The latest example: our new Diesel powered Groundsmaster 72®. It offers you maximum productivity and reduced operating costs as well as remarkably low levels of noise and vibration.



But we didn't stop there.

We knew that water in fuel can literally drown a Diesel. Destroy its injectors and injection pump. And soak you with costly repairs and downtime.

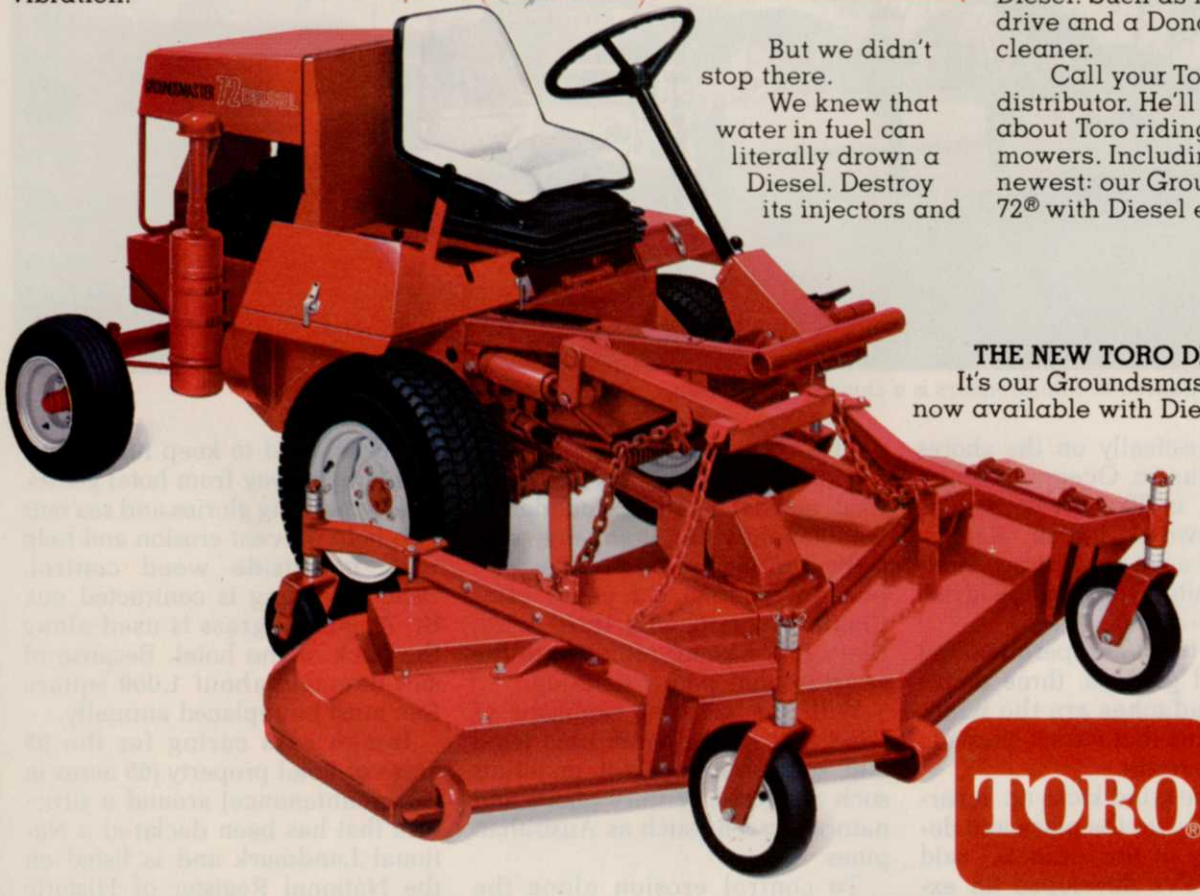
So we built in a Roosa-Master water separator that removes more than 95% of the water. You simply unscrew a plug and drain it out.

And we didn't stop there.

We added other features that keep you cutting. Like a fuel primer pump, start assist glow plugs and a maintenance free battery.

Plus, other advantages you get with every Groundsmaster 72®, gas or Diesel. Such as hydrostatic drive and a Donaldson air cleaner.

Call your Toro distributor. He'll tell you all about Toro riding rotary mowers. Including the newest: our Groundsmaster 72® with Diesel engine.



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It's our Groundsmaster 72®
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Circle No. 133 on Reader Inquiry Card

LANDSCAPE MANAGEMENT

The Breakers

Henry Flagler's renaissance hotel in Palm Beach is now Joe Inman's landscape.

By Maureen Hrehocik, Associate Editor

The Ocean Course *at The Breakers is a Donald Ross design.*

Sitting majestically on the shores of the Atlantic Ocean in Palm Beach, FL, is The Breakers. The world-renowned Italian Renaissance hotel each year attracts hundreds of visitors to enjoy the lavish life it has to offer.

For Joe Inman, superintendent of golf and gardens, three of his biggest headaches are the wind, sand and surf that attract guests to the opulent resort.

"When the wind kicks up, it carries sand all over the place and destroys many of the annuals," said Inman. "We've developed an excellent replacement program, though."

The resort is still run by descendents of Henry Flagler, railroad magnate and co-founder of the Standard Oil Company, who built the original Breakers. It burned in 1925, 12 years after Flagler's death. His third wife, Mary Lily Kenan, rebuilt it to the structure that is now standing.

With the constant problems of wind and sand, Inman uses wind and salt-resistant plant materials such as cactus, century plants and natural screens such as Australian pines.

To control erosion along the beachfront, Inman uses boulders to stop the ocean from gnawing at the beach and to keep turtles and mantarays away from hotel guests. Beach morning glories and sea oats also help prevent erosion and help with beachside weed control. Beach cleaning is contracted out. St. Augustinegrass is used along the back of the hotel. Because of salt damage, about 1,000 square feet must be replaced annually.

Inman says caring for the 95 acres of hotel property (65 acres in turf maintenance) around a structure that has been declared a National Landmark and is listed on the National Register of Historic Places, is an ideal job for him. He is responsible for the hotel