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OCTOBER 1993 • \$3.00



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AS WE SEE IT

JERRY ROCHE, EDITOR-IN-CHIEF



Growing not always easy in this economic climate

Et tu! To grow or not to grow—that is the question. Whether 'tis nobler to be static, or to suffer the slings and arrows of expansion.

Okay, so I'm no Willie Shakespeare.

But in that first paragraph, you can read what happens when someone tries to be something he's not...it just doesn't work.

Growing (the subject of our cover story this month) is not easy, ever—much less in the current economic climate.

One of the great quotes I wrote down while researching the cover story is this: **"You cannot push growth; you have to release it."**

Another: **"The act of growing implies, at the least, paying attention to the world around you; learning from others; and changing yourself."**

In this context, paying attention to the world around you means knowing the market, knowing the general economic climate, and predicting what future services might be in demand.

Learning from others means getting critical feedback from customers. It's not enough—any more—to be content with a batch of kind comments. **You have to really work to pry information from your customers.** The information can then be used to improve your business and your standing with your customers. Mostly, though, it's information that you can learn from.

Learning from others also might mean getting critical feedback from your employees. **You cannot plot out a growth curve that might exceed the growth curve of your employees. They have to grow with the company.**

One of the reference books I read suggests this:

"Sit down with employees and explain how you think the business is going to grow in the next year, and how you believe this will affect the different jobs or departments. Then find out what each employee thinks of the scenario...and whether they

will be with you or against you."

Sound advice.

Once you've determined how you're going to improve and grow, sometimes the hardest part of the entire process is changing your business to accommodate the anticipated growth.

If you're lucky, you'll be able to grow without having to sink a lot of money into materials and equipment, at least initially. (If a branch office is necessary, you could be facing additional start-up costs approaching as much as \$500,000, according to one landscaper we talked to.)

Finally, after all the growth mechanisms are in place, you wake up every morning to the sound of chirping bluebirds. The phone is ringing off the hook. The sun is highlighted against a cloudless azure sky.

...But wait just a minute. All might not really be right with the world.

One expert says that **the most perilous time is when a company starts to succeed wildly, enjoys high earnings and shows rapid sales growth.** Those symptoms can breed mistakes that are masked by the company's outward prosperity.

When you're hustling to please all your customers and working long hours to keep pace with all the new sales, small things can start falling through the cracks. And then the pendulum begins to swing the other way. Maybe you hear more complaints; maybe you start losing employees; maybe your pre-tax profits plummet.

No, growing in this economic climate is not easy.

But it's possible—likely, even—if you follow some of the suggestions in our cover story.

LANDSCAPE MANAGEMENT

OCTOBER 1993 VOL. 32, NO. 10

COVER FEATURE

6 Growth strategies

A business is never stagnant. According to a recent publication, it's either growing or dying. Here are some tips on avoiding the latter.

Jerry Roche

If you've been entrusted with expanding your golf course, here are some pleasures and pitfalls this experienced superintendent would like to impart.

Jerry Coldiron

FEATURES

11 LM Reports: Large equipment

Big-ticket items are now more adaptable to landscaping uses. A widening array of attachments adds versatility and efficiency to skid-steer purchases.

Ron Hall

14 Mulch selection

Buying and installing mulch is not an insignificant expense. Here are some tips from the National Bark & Soil Producers Association to get the full value of mulch.

18 Keeping your customers

Steady customers are the backbone of your business. But losing them and having to replace them could break your back.

Bess Ritter May



TECH CENTER

22 Sizing up trees

If you tell customers a tree is safe and it falls apart, there's hell to pay, say these tree and litigation experts.

James E. Guyette

26 Green up with iron

Using this micronutrient for rapid color enhancement is making turf and turf managers look good.

36 Beware desiccation

The biggest cause of winter's lasting gift, desiccation, is intense cold wind at times of low humidity. Snow mold waits in the wings.

Terry McIver

GOLF 'SCAPING

40 Wetting agent injections

Harold Edgerton runs liquid soil wetting agents through his water injection aerator to relieve stressed-out greens. But he adds an effective metering system that uses a proportional injector attached just off-green.

Bob Coleman

43 GCSAA looks for CEO

With the Lawrence, Kansas staff realignment proposed by Arthur Andersen & Co. and the resignation of CEO John Schilling, the GCSAA will sport a whole new look by mid-1994.

Jerry Roche

LAWN CARE INDUSTRY

44 The big pay-off

Margins just so-so? Exceeding customer expectations will help strengthen them—perhaps to as high as eight percent profit—this landscaper says.

45 LCO charged with murder

Richard B. Huff allegedly tried to build a lawn care company the wrong way—with dirty tricks, insurance fraud, arson and, finally, murder. That's why he may spend the rest of his life in prison, if a West Virginia grand jury has its way.

Ron Hall

46 It's a swap meet!

President Bill Clutter and about 100 other Ohio Lawn Care Association members gather at O.M. Scott's picnic grounds for the first OLCA swap meet.



HOT TOPICS

48 Floodwaters hit home

Russell Schmidt says customers are anxious to restore lawns/landscapes following this year's historic Mississippi River deluge.

Ron Hall

J. Walter Wolfner, Jr. is experimenting with bentgrass in mid-summer because he has no choice. The Meramec River destroyed two of his courses.

DEPARTMENTS

1 As We See It
4 Ask the Expert
19 LM Grapevine
27 Bio-Turf News

53 Jobtalk
54 Product Showcase
58 Classified
60 Ad Index

ON THE COVER

A picturesque view of Boone Links Golf Course in Florence, Ky. Boone Links superintendent Jerry Coldiron tells readers how to deal with a new construction project beginning on page 6.

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ASK THE EXPERT

DR. BALAKRISHNA RAO

Poisoning ivy plants

Problem: We find poison ivy plants growing beneath and climbing on trees in our clients' properties. Would you please suggest some methods to get rid of them? (Indiana)

Solution: Assuming that you have properly identified the plants as poison ivy (*Rhus radicans* is referred to as *Rhus toxicodendron* or *Toxicodendron radicans*, which are older names), it can be controlled either by mechanical means, such as digging and mowing, or by applying herbicides.

Although difficult, digging and removing all plant roots in long pieces can provide effective control. Cut the poison ivy vines at the base of the tree and pull out as much of the plant as possible. However, if a small piece is left behind, it can sprout again.

Remember that poison ivy's skin irritant is found in all parts of the plant, including the roots and fruit, but especially in the sap. Therefore, protect your skin as much as possible. Contaminated clothes, gloves, etc. should be washed thoroughly or burned (if you can afford it) after use.

Roots and stems that are removed should also be destroyed because even the dry plant parts are poisonous. If the plant parts are burned, keep away from the fumes, as they are potentially very dangerous.

Another method of control is to mow or prune young stems until the plants are killed. The objective here is to deplete the nutrient supply of the plant.

Herbicides sprayed on foliage will kill the leaves and may kill roots. Amitrole (trade names Amizole, Amino Triazole, Weedazol) is very effective, especially in the late spring or early summer. Apply this material when the leaves are fully expanded. If necessary, re-treat when new growth occurs. This is a systemic material which translocates inside the plant; therefore, permanent control can be expected with two to three applications.

Glyphosate (Roundup) can also be used. Although slower-acting, it is preferred in some situations because it has a shorter soil residual than amitrole. Here again, if regrowth occurs, re-treat as needed.

Read the labels and follow the directions for safety and better management results.

Wasps cause galls

Problem: One of our clients' shingle oak trees has a large number of galls on the twigs. They are very hard. We see quite a bit of dieback in the crown. What causes this? Would this spread to other oaks (not shingle oaks) nearby? Is there anything we can do to manage this? (Missouri)

Solution: The galls you are referring to are most likely caused by a tiny wasp. These are commonly called gouty oak galls. They can be very destructive, and their management is very difficult.

Reports indicate an increase of galls last year, because of the mild winter. Some of the galls may not have become evident until this year's growing season because of their complex lifecycle.

The adult wasps consist of only females, which emerge from twig galls during leaf expansion in spring. They lay eggs along the

veins and midribs of the new leaves. The eggs hatch into tiny larvae, and their feeding swells the tissues underneath the leaves. They generally pupate in late June to early July. The new generation, unlike the previous, will have both males and females which mate and lay eggs on oak twigs. These eggs hatch and produce galls on twigs, which take two to three years to mature into a hard woody structure.

In the case of gouty oak galls, there are no protruding structures called "horns." A similar gall called horned oak gall will have protruding horns. These galls can cause extensive dieback and may lead to the tree dying.

Management is very difficult because of the complex and overlapping lifecycles, and because the larvae are protected inside the gall tissues. Applying insecticides to manage these wasps after the gall formation doesn't help. Where feasible, consider selective pruning and destroying the affected plant parts to help minimize the problem.

Reports suggest that applying horticultural oil combined with a labeled insecticide (contact your local extension office) can help manage the hatching larvae. This should be done before the larvae enter the host tissue. Even with this approach, managing this problem is very time-consuming, difficult and may not be practical.

For fruit in sweetgum, sycamore

Problem: Is there a chemical we can use to get rid of unwanted fruits from sweetgum and sycamore trees? (Michigan)

Solution: I am not aware of any products labeled specifically for this problem. However, the Florel brand plant growth regulator from Rhone-Poulenc Ag Company is showing promising results in our research trials.

Both sycamore and sweetgum have objectionable fruits and present a serious problem on lawns and sidewalks. Florel should take care of these "messy" problems.

A Rhone-Poulenc representative indicates that Florel has been submitted for label expansion. Registration is expected by early 1994. The expanded label will have both sweetgum and sycamore listed.

Dr. Balakrishna Rao is Manager of Research and Technical Development for the Davey Tree Co., Kent, Ohio.

Mail questions to "Ask the Expert," LANDSCAPE MANAGEMENT, 7500 Old Oak Blvd., Cleveland, OH 44130. Please allow two to three months for an answer to appear in the magazine.



Snow Mold

Stop Snow mold cold all winter long. Go with Daconil 2787® this fall.

To stop Snow mold cold and help ensure green and healthy turf come spring, go with the fungicides you trust all summer long: Daconil 2787® Flowable Fungicide and Daconil 2787 WDG Fungicide from ISK Biotech Corporation. And, to be sure you control both Pink and Gray snow mold, mix with Chipco† 26019 at recommended rates for the last two applications right before the snow flies.

Otherwise, all through the winter, whenever moisture and temperature conditions are right, Snow mold spores can germinate, creating infection.

Fifteen years of independent research confirm there is no better Snow mold control. And remember, there's never been a documented case of disease resistance to Daconil 2787.

Daconil 2787 and Chipco 26019. The proven way to stop Snow mold cold this fall and ensure healthy turf next spring. And that's one more reason to stick with Daconil 2787 all season long.

**ISK Biotech Corporation,
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5966 Heisley Road, P.O. Box 8000,
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Stop Snow Mold Cold. Daconil 2787.

GROWTH



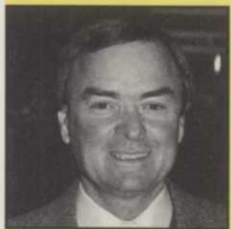
Turnbull

"I'm involved in everything now, and have a better handle on what's going on. I'm accepting my level of income, trying to work smarter and maintain my net."



Schlossberg

"The industry's days of large growth are over—but I don't see it going down the tubes. The need is there, and customers appreciate our services."



Carpenter

"It might be glamorous to do big volumes of work, but when you grow, you expand the overhead."

A business is never stagnant, it's either growing or dying. Here are some tips to keep yours healthy.

■ Because of the economy, many lawn care and landscape companies are now in a minimum growth mode. Some aren't growing at all. So they're being forced to look at the different ways they can grow their businesses.

In the lawn and landscape industry, the three directions in which to expand are:

- 1) **customer base:** selling existing services to a higher percentage of potential customers within your territory;
- 2) **territory:** expanding the geographical area in which you do business; and
- 3) **services:** offering new services to your existing customer base.

Because of the low interest rates now available from savings and loans, this could be the perfect time to expand. You may be considering re-financing your loans anyway, so why not borrow more money for expansion at the same time?

"You get to a point where you're going to bust through and hire people and buy equipment, or you stay where you're at," notes Jay Turnbull of Turnbull Landscaping in Nashville, Tenn. "I'm always evaluating, trying to decide which way to go."

Here are some thoughts that may help your decision-making:

● The main problem is lack of imagination, not capital, says Paul Hawken in his book "Growing a Business" (Simon &

FOR 90 Expanding y

by Jerry Coldiron, Boone Links

■ If you've been given charge of a new golf course, or an expansion project—as I was—remember this:

At 6 a.m. on opening day, no one will be able to feel the excitement and pleasure as much as you.

I would like to share some pleasures and pitfalls, as well as tips, I experienced during construction, though each construction or renovation project will doubtless vary.

1) Develop a realistic set of goals and budget (based on solid research), and be sure you understand exactly what the owner expects. Decide on the project's expense, type and style.

Carefully interview and select prospective architects and contractors. Field trips (we made six) are invaluable. Talk with owners, pros, superintendents—and even players.

2) Develop a "team approach," and make sure everyone has a clear understanding of

STRATEGIES

the ways our course?

and Lassing Pointe Golf Courses

duties and responsibilities. Our team: golf professional, golf architect, engineer, building architect, and myself (project manager). Schedule mandatory meetings. Communicate and document daily. Keep a solid filing system, log all calls, and maybe hire a secretary.

3) Develop a solid set of specifications and construction drawings. Study, review and tailor these specifications to your project. *Do not accept generic specifications.* Demand and fight for the little details. Keep everything in writing.

Be sure all parties understand the change order process. Develop a project timetable. Update and revise the timetable at your weekly meetings. Schedule for weather delays.

4) Determine your irrigation source pump locations and start the ball rolling early on getting electrical power.

My biggest headache was coordinating all

continued on page 8

Schuster, 1987). "Meaningful change almost always comes from the edge, the margins," Hawken writes. "Good ideas often do not look very good at first or second glance, but don't worry if it sounds weird, crazy or obscure. It may defy common sense or logic in the market as it now exists, but it may also be breaking new ground."

● The six keys to growth, according to Stephen Jenks, writing in *Home Office Computing* magazine, are: (1) energy, motivation and resilience; (2) innovative marketing; (3) market knowledge; (4) solid financial planning; (5) staying close to customers; and (6) using new technology.

● *Home Office Computing* offers these ideas for growth:

- *plow profits back into the business;
- *hire employees who can, by their presence and imagination, help spark growth;
- *develop a new niche or target empty niches;
- *focus energy on developing and improving services; and
- *be fast and flexible.

● Do your homework, writes Fred Klein in "Handbook on Building a Profitable Business" (Entrepreneurial Workshops Publications, 1990). Research the market. "When you get customized requests from customers, ask yourself if there is a market to the entire customer base."

● "You want to take a look at where this industry's heading," says Mark Schlossberg of Pro-Lawn Plus, Baltimore, Md. "The industry's days of large growth are over—but I don't see it going down the tubes. The need is there, and the customers appreciate our services."

continued on page 8



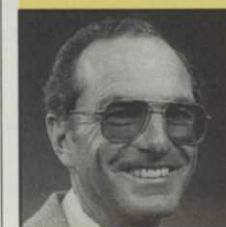
Doesburg

"We do more promotion-type marketing to keep our name in front of the public. We also work very closely with organizations like the home builders."



Berghuis

"Don't grow too fast...and never, ever kid yourself about what kind of financial shape you are really in."



Gerlack

"We're trying to offer more services. We've been looking at composting, but regulations make it difficult to get into."

The first decision—Initially, you might be happy with minimum growth.

"After seven years of growth, I plateaued in 1987," Turnbull says. "Then when building and everything slowed down in 1988 and 1989, I slid back and pretty much found my level. I've had no numerical growth in four years. But I've found a comfortable level that works best for me."

Likewise, Landmasters in Gastonia, N.C., has also slowed—but by design.

"We got into the trap of growing sort of 'free-fall' in the mid-'80s," observes Joe Carpenter. "Since 1986, I've restricted growth and put much more of a managed control on it. It might be glamorous to do big volumes of work, but when you grow, you expand the overhead."

Expanding customer base—If you choose to add more customers, you're going to have to intensify your marketing (including telemarketing) tactics.

"Twenty years ago when our name wasn't as well known, we tended to do more media marketing," says Rick Doesburg of Thornton Landscaping, Maineville, Ohio. "Now, we do more promotion-type marketing to keep our name in front of the public. We also work very closely with organizations like the home builders."

Klein, in his handbook, suggests Yellow Pages ads, direct mail, newspapers, radio and shoppers for service business advertising. Billboards, magazines and television are an advertising no-no, he says.

Expanding territory—"I could expand our territory, but I don't just want to grow for growth's sake," says Carpenter.

Expanding territory means hiring more help, buying more equipment, and possibly opening branch or satellite offices—all comparatively expensive procedures.

"My advice is to see if you can do it with the people, equipment and supervision you have in place," Carpenter observes. "If not, count the added costs to see if there is actually some profit in expanding."

(For more information on deciding whether to open branch or satellite offices, see Ed Wandtke's articles in the November and December, 1992 issues of LM.)

Adding services—The lawn and land-

Add-on services:

- ☐ aeration
- ☐ brick paving
- ☐ Christmas decorations
- ☐ composting
- ☐ edging
- ☐ fence and retaining wall construction
- ☐ gutter cleaning
- ☐ hauling
- ☐ irrigation maintenance
- ☐ lake management
- ☐ lighting installation and maintenance
- ☐ lime applications
- ☐ mulching
- ☐ patios and brick paving
- ☐ planting and maintaining flower beds
- ☐ seeding
- ☐ selling or recycling chips
- ☐ snow removal
- ☐ stump removal

scape market is becoming more full-service-oriented. "You have to make sure you're doing the job for the client or someone will come in the back door," says Doesburg. "We've even gotten into things like Christmas decorating and gutter cleaning."

According to *U.S. News & World Report*, large companies that sell multiple services are streamlining. This gives the smaller company the chance to expand into areas that the large companies are abandoning.

"We've done a lot of customer surveys," says Bob Ottley of One-Step Lawn Care, Rochester, N.Y. "A few years ago, we weren't doing everything the customer wanted.

"Now, we're pretty much customer-driven. We've also come up with ideas of what the customer might like—we're dabbling in mulching and planting flower beds now."

Adds Ken Gerlack of Contra Costa Landscaping, Martinez, Calif.:

"We're trying to offer more services. We've now got an eight-foot harvester and we're licensed for lake management. We've been looking at composting for the last three years, but regulations make it difficult."

(See list to the left for some add-on services we've come up with.)

A note—Peter Berghuis, president of the California Landscape Contractors Association, offers these final words of caution:

"Don't grow too fast—20 percent of something smaller is better than 0 percent of something larger. Have a plan for downsizing as well as upsizing. And never, ever kid yourself about what kind of financial shape you are really in."

—Jerry Roche

continued from page 7

the infrastructure (utilities, roads, buildings). If you are willing to accept responsibility, you might save enough to pay for your new turf building. Also, you end up being totally involved anyway, so you may as well capitalize on the situation.

5) If your project is a new course, consider building your turf care facility early. This will be the hub of the entire project. Fight for early funding and a state-of-the-art facility. If you cannot work it out, be sure to plan for temporary offices and/or buildings and trailers.

6) Be certain to obtain, in writing, all necessary documents and permits.

7) Use an experienced irrigation consultant/designer, if feasible. Be sure to explore the new variable drive pump stations and radio-controlled head technology—they are a must.

8) Determine green and tee construction methods, grass varieties—early. Research, compare prices; complete all necessary soil testing. Develop a fertility program to meet your needs. (Words of caution: an ample "grow-in" or "maturation maintenance" budget is a must. Prepare your owner for this cost: if it's done properly, it's not cheap and is often overlooked.)

9) Work closely with your building architect on the turf care clubhouse, restrooms, shelters, pumphouse, and chemical storage build-

ings. New ideas and technology are being developed daily. These considerations will affect the total project, especially cost.

10) Get solidly involved in: *sand, seed varieties and mixes (be sure your grassing contractor understands calibration); *working out grassing lines with the architect (we used color-coordinated survey flags); *field layout irrigation (it always changes from the paper design); and *play "construction golf" (hit a ton of golf balls).

Check distances and tee and approach angles as soon as the rough shaping takes place. Get everyone involved.

11) Allow time to hire and develop a strong staff. An assistant mechanic, irrigation technician and chemical technician are the first hires. Justify their presence by getting them involved.

12) Consider using a local nurseryman to document and help integrate native plants and trees. Stake, rope and clearly define all "natural" and "native" areas as well as specimen plants (a yellow ribbon or painted "x" will *not* suffice).

Finally—on a very serious note: allow times away from the project for yourself and your family. It can be an all-encompassing job, and this industry can quickly destroy a family. Also, be sure to surround yourself with quality people, machines, budgets and a solid plan. This type of project can be an exciting and fulfilling opportunity that only a few superintendents get a chance at. Good luck!

Big-ticket equipment now more adaptable to landscaping uses

A wide array of attachments add versatility and efficiency to skid-steer purchases.

■ In your landscape company business plan, in the space beside the word *diversity*, add the words *versatility* and *efficiency*. Keep them in mind when buying equipment, particularly big-ticket items like skid-steer loaders.

This is the type of equipment, particularly with the amazing collection of accessories being made for it, that will allow your company to do more—much more—with fewer people.

"Nobody in the landscape business wants people standing around with shovels and rakes. That's costly," says Mike McPherson, vice president sales for Glenmac/Harley Power Equipment, Jamestown, N.D. Making wise equipment choices will help prevent this.

When buying big equipment, experts say to:

- match equipment as closely as possible to the types of services you offer;

- review the availability of work-saving attachments;
- calculate the recovery of equipment costs; and
- consult with employees on ease of equipment use.

Big items such as loaders and backhoes, more typically used in landscape construction rather than maintenance, represent a sizable financial investment for most landscape professionals. But they

can stretch dollars and increase the productivity of these purchases equipment by also investing in appropriate attachments. Manufacturers offer an ever-widening array of landscape-type attachments for skid-steer loaders and tractors. Most can be mounted quickly and easily.

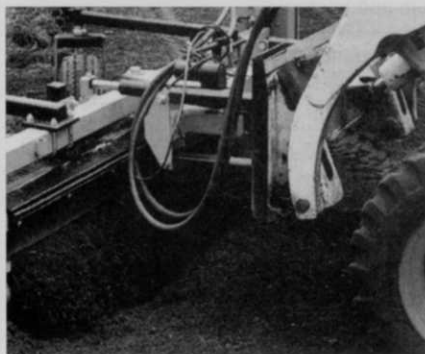
Even "maintenance" equipment such as front mowers and compact tractors can now be fitted with buckets, forks, blades, sweepers, etc. so that they can be used out of season, helping to recover their costs in a shorter time.

"Most people don't realize how versatile their equipment really can be," says Phil Lawrence, equipment designer at Lawrence, Inc., Spring Lake, Mich.

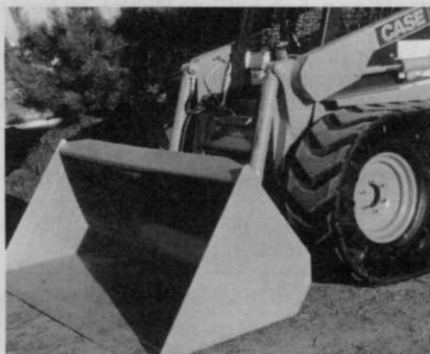
"For example, sometimes a landscaper will dump 30 yards of mulch on the parking lot of a condominium complex and he'll send in four guys with wheel barrows, and they're working like crazy. It just doesn't make sense," says Lawrence. A smaller crew, working with compact tractor equipped with a bucket, would get the job done much faster, decreasing labor costs significantly.

Adds McPherson of Glenmac: "Contractors are always looking for ways to eliminate hand labor. It's unpredictable. They want to keep their businesses small but profitable, and they can do that easier with the right equipment and implements than they can with more employees."

—Ron Hall



Glenmac Power Rake



Case 1840 Uni-Loader



Melroe Bobcat skid-steer loader



Ditch Witch trencher



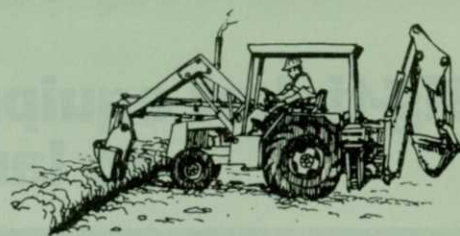
Du-Al 1250A trencher



Mustang 900 Series loader

HEAVY EQUIPMENT

...for the green industry



<p>Ditch Witch Circle No. 300, Reader Card</p>	<p>Underground construction equipment. Trenchers from walk-behind that can be taken through a yard gate to four-wheel-drive models. Vibratory plows. Boring and picing tools and attachments, including three Jet Trac directional boring systems.</p>
<p>Du-Al Manufacturing Circle No. 301, Reader Card</p>	<p>Model 1250A Trencher for compact utility tractors in the 18 to 35 hp range, patented Hydra-Creep worm gear drive. Model 1025, 1035 backhoes for mounting on tractors or skid steer loaders. Model 107 Commercial Loader.</p>
<p>Ford New Holland Circle No. 302, Reader Card</p>	<p>New Holland skid-steer loaders, nine models, self-neutralizing hand controls, maxiumu forward reach at maximum height. Full line of attachments, Tractor loader/backhoes. Ford powertrains.</p>
<p>Glenmac Circle No. 303, Reader Card</p>	<p>Model Pro-6 Power Landscape Rake, 6-foot design, left or right throw, oil-bath drive, three-point hitch, front-mounted scarifier, double-drive rollers, for 27 to 45 hp range tractors. New: the Model Pro-8 Power Rake with 8-foot design.</p>
<p>Jl Case Circle No. 304, Reader Card</p>	<p>Model 1840 Uni-Loader, Case coupler and bucket design for one-person attachment changes in field, 50 hp diesel, rated operating capacity is 1,350 lbs.</p>
<p>Deere & Co. Circle No. 305, Reader Card</p>	<p>John Deere loaders. Five models, from the Model 375 with 17 hp, Yanmar, three-cylinder, liquid-cooled diesel engine, 675-lb. operating load capacity to the Model 875, 65 hp John Deere liquid-cooled diesel, operating load capacity 2,000 lbs Backhoes for tractors and skid-steer loaders. Loaders for compact, utility tractors and series tractors.</p>
<p>Kelley Manufacturing Circle No. 306, Reader Card</p>	<p>Backhoes. Double-acting swing cylinders protected with hydraulic "cushion valve" for smooth operation and less maintenance, digging depths 6 to 8 feet, bucket sizes 12 to 36 inches, two lever control.</p>
<p>Kubota Circle No. 307, Reader Card</p>	<p>Model BT650 designed to be used with company's B20 tractor, 2,888-lb. digging force, 92.9-inch digging depth, automatic return-to-dig mechanism.</p>
<p>La Barge Equipment Co. Circle No. 308, Reader Card</p>	<p>Attachments Plus Hopper/Scoop (1.2-yard capacity), fits any three-point hitch and many front mowers with adaptable lift fram. Fork Set/Tote Platform for front mowers and tractors.</p>
<p>M-B Companies Circle No. 309, Reader Card</p>	<p>Mechanical Power Brooms. Models include walk-behind (36 inches long, 20-inch diameter poly), and those that can be mounted on tractors, skid-steer loaders, and on a John Deere out-front mower, Model MLT (60 inches long by 25-inch diameter, all steel-welded).</p>
<p>Melroe Circle No. 310, Reader Card</p>	<p>Bobcat Skid-Steer Loaders, 14 models from 16.5 hp, air-cooled gas 440B (600 lbs. load capacity) to 74-hp, liquid-cooled diesel 2410 (2400 lb. load capacity). Full line of attachments.</p>
<p>Mustang Manufacturing Circle No. 311, Reader Card</p>	<p>900 Series Loaders, five models, from 15 to 57.5 hp, 650 to 1,700 lb. lift capacities, single-lever Fast-A-Tach. Full line of attachments.</p>
<p>Power Equip. & Hydra Mac Circle No. 312, Reader Card</p>	<p>Hydra-Mac, Model 1450: hydrostatic, all-gear final drive, 40-hp Cummins diesel engine, two-hand lever control.</p>
<p>Ransomes Circle No. 313, Reader Card</p>	<p>Cushman TurfTrak independent tractor unit with approximately 20 attachments, including rotary boom, slip scoop, chipper/shredder, etc. Three models with Kubota engines from 16.5 to 23.5 hp.</p>
<p>Sweepster Circle No. 314, Reader Card</p>	<p>Hydraulic Drive Sweeper Model LH mounts in place of bucket, requires minimum hydraulic system of 10 gpm at 2,000 psi, measures 6 feet wide by 32 inches in diameter, manual 30-degree angle change, quick-attach.</p>
<p>Thomas Equipment Circle No. 315, Reader Card</p>	<p>Skid-Steer Loaders, 6 models from the T-83 (rated lift capacity 800 lbs., 19.5 hp) to the T-233 HD (rated lift capacity 2,300 lbs., 62 hp). Full line of attachments.</p>
<p>Toyota Circle No. 316, Reader Card</p>	<p>Model SDK10, rated at 1,800-lb. operating load (largest of Toyota 6-model line), 57-hp diesel engine, 12.5-cubic-foot bucket, maximum breakout force of 4,740 lbs., maximum dump height of 120.5 inches.</p>
<p>Trackless Vehicles Ltd. Circle No. 317, Reader Card</p>	<p>MT5 Tractor, Cummins 76 hp to 102 hp diesel, four-wheel drive, hydrostatic transmission. Attachments: plows, blowers, sweeper, spreader, spreader, commercial mowers.</p>
<p>Vermeer Manufacturing Circle No. 318, Reader Card</p>	<p>The V-1850 trencher is full hydrostatic-drive; powered by a Kohler Command overhead valve engine. Depth 0-48"; width 4-10". Good for close quarters; Porta-Bore attachment for sidewalk, driveway boring.</p>
<p>Worksaver Circle No. 319, Reader Card</p>	<p>Rakes. Also Model ULF-246 fork attachment increases versatility of small to mid-size tractors and skid-steer loaders, 2,000-lb. capacity, adjustable 46-inch long, alloy steel forks.</p>

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Circle No. 119 on Reader Inquiry Card

Mulch wisely to get full value

Buying and installing landscape mulch is not an insignificant expense. Use these tips to get full financial and plant nutritional value.

■ Using mulches in maintained landscapes reduces maintenance and improves plant health by retaining moisture and controlling weeds.

Mulches can also add beauty to landscapes. They're available in varying textures and colors.

But buying and installing mulch is not an insignificant expense. Here are some tips from the National Bark & Soil Producers Association (NBSPA) to get the full value of mulch in the landscapes you install or maintain:

Depth of application: 2 to 4 inches for most outdoor applications.

As a soil conditioner: Remove grass and weeds from the bed surface. Loosen the soil with a shovel or spade to a depth of 6 to 8 inches. Cover the bed with 4 to 6 inches of aged, shredded mulch and till

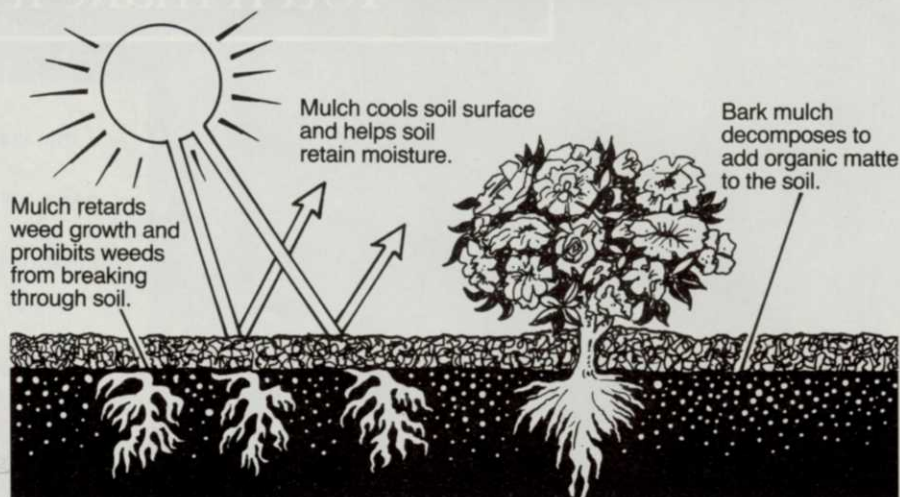


Diagram courtesy Hyponex Corporation

into the soil thoroughly.

Avoid excessive mulch build-up: Re-mulching beds over several years may raise the bed level too high for shrubs and perennials.

When bed depth rises above the base of shrubs, remove 2 to 3 inches of the underlying mulch and save it for other planting uses. The humus created by decomposing bark mulch is an excellent planting medium for pots and planters.

Nitrogen adjustment: Mulches may tie up nitrogen as they decompose.

Gently work a specially formulated fertilizer (like 16-9-12, 18-11-12, or 20-10-10) into the soil before mulching. Fertilizer application rates depend on the type of mulch used.

After mulching, follow recommended fertilizer programs to maintain good plant growth.

Look for low wood content: Bark decomposes slower than wood, maintains its color longer, and presents a uniform product appearance.

MULCH PRODUCT SELECTION GUIDE

	Pine nuggets	Pine mulch	Cypress grade A	Cypress grade B	Hardwood mulch	Western mulch
Characteristics						
Color (1)	red brown	light brown	gold brown	gold brown	dark br/blk	red brown
Longevity (2)	multiple	multiple	single	single	single	single
Moisture retention	low	high	high	high	high	high
particle size	1.25-3.5 in.	<1.5 in.	<3 in.	<3 in.	<3 in.	<1 in.
Wood content (3)	<15%	>15%	<15%	>15%	<15%	>15%
pH	neutral	slightly acid	neutral	neutral	slightly acid	slightly acid
Benefits						
Decoration	excellent	good	excellent	good	good	good
Erosion control	fair	excellent	excellent	good	excellent	excellent
Moisture control	fair	excellent	excellent	excellent	excellent	excellent
Soil conditioning	fair	excellent	fair	fair	excellent	excellent
Weed control	good	excellent	excellent	excellent	excellent	excellent
Applications						
Edging	good	excellent	excellent	excellent	excellent	excellent
Drainage areas	fair	good	good	fair	good	good
Planting beds	excellent	excellent	excellent	excellent	excellent	excellent
Planters	good	good	excellent	good	excellent	excellent
Play areas	fair	excellent	fair	excellent	excellent	excellent
Slopes & grades	good	excellent	excellent	excellent	excellent	excellent

(1) Color may vary depending on regional tree species.

(2) Longevity is a rating of how long the product substantially maintains its original appearance and/or function. The rating for a single season or multiple season is an average based on a temperate climate and moderately intense sun.

(3) Wood content percentage is measured as a percentage of wood to total product weight.

Source: National Bark & Soil Producers Association

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Circle No. 115 on Reader Inquiry Card

10 ways to KEEP your

customers

Brown, Sam

Mr. & Mrs. Geoff and Karen
12502 Brooklawn Ave.
Cleveland, OH 44111

Howard, Jerry
1273 Walnut
Madison, OH 44321
555-1222

Lawn Care: Fertilizer: 4/5; 6/1 Pre-Weed: 3/10
Flower Beds: Weed: 6/3

Steady customers are the backbone of your business. But losing them could break your back.

Like most alert lawn and landscape entrepreneurs, you know how hard it can be to attract new customers. But do you

also do all you can to keep your old reliable "steadies"?

It's often thought that the customers who are the backbone of your business will always be loyal—unless some actual damage is done to his or her lawn or landscape. However, it has been proved that unless such mishaps are really drastic, they will be forgiven when they're corrected.

But what is rarely taken lightly by most

"old" customers—and will often lose them—is the inability to observe some simple, considerate and very easy common-sense business practices. To be sure that you and your employees are careful, check your answers to these "yes" questions:

1) Are your trucks neat, clean and businesslike in appearance? They should be spotless and freshly painted with the name of your company clearly visible. Many customers who employ a lawn/landscape contractor consider having the truck in the driveway to be a status symbol. But even the most loyal customers won't like a shabby, unpainted vehicle looking like a fugitive from a salvage dump in their driveway.

Handling complaints

- Problem customers include those who:
 - never seem to be fully satisfied with the completed work;
 - always seem to want some extra service for free;
 - are sure they're not getting their money's worth; and
 - insist on supervising the work to an annoying degree.

Proven ways to handle such sticky situations successfully include:

Guarantee your work. Offer to make good in any way you can.

You may need to warn the customer that "I'll do this your way, if you insist, but I won't be responsible for the results."

Offer money-back guarantees on any product you sell that is offered to you on the same basis by the supplier or manufacturer. "If you have a receipt and if you use this product according to directions and it doesn't deliver as promised, just tell us exactly where it failed."

Pay attention to details and more details. Let your client know this, even while you are working on the property. This can be extremely impressive, and will make your company and its services look very good indeed.

Offer to match the prices of your competition to customers concerned about prices. These prices should be in writing and include everything the customer has requested. (Ask for proof of a competitor's bargain price on that specific job; they are often only offered infrequently as "loss leader" bait.)

Never forget: it can cost a great deal to replace loyal customers. They are the lifeblood of your business, and your best sales reps. Remind your employees: if the company has no customers, there will be no business—and, consequently—no jobs.

—B.R.M.

2) Are your drivers safe and courteous?

Since your logo is (or should be) printed boldly on your trucks, they and their drivers are really moving advertisements. This makes it especially important to drive carefully and obey all traffic rules.

It's also important for your employees to avoid arguments with a customer's neighbor concerning traffic-related matters. Neglecting to do so can often result in losing a valuable customer—regardless of whether the employee is right or wrong.

3) Do your drivers show courtesy toward other motorists and pedestrians?

Or do they cut people off and then smirk at them? Rude and unnecessary traffic-related practices have a negative impact on the company's reputation.

4) Are your drivers' job-site parking practices considerate?

Do they always park away from driveways and the flow of traffic, or do they cause troublesome traffic jams by parking on busy highways during rush hour?

5) Do your employees wear near and appropriate uniforms?

With their name and company name embroidered on a pocket or on the backs of the shirts? Or do your people look like skid row characters rather than competent and reliable landscape workers because of their unwashed, unkempt hair and ragged and dirty clothes?

6) Do employees cooperate with each other?

Do they work together in harmony, efficiently and quietly, or do they quarrel with each other about who does what, where and how?

7) Are your employees considerate of your customers?

Your answer to this question must be "no" if workers don't bother to:

- * carry empty trash cans from the curb to the garage (or another location designated by the customer) simply because it's too much trouble or they're too busy keeping to their production schedule;

- * bag lawn clippings, pulled weeds and other trash and dispose of it properly and neatly, as directed by the customer. Or (even worse) do they leave it lying around in a pathway or garage?

8) Do you train your workers to be considerate and responsible?

For instance:

- * always moving garden furniture, croquet and other games, children's toys, and similar items on lawns before mowing, and—if appropriate—replacing them;

- * always carefully covering all items which can't be moved before spraying;

- * always neatly coiling and storing hoses near a faucet or some other practical place as designated by the customer, if you are responsible for watering.

LM GRAPEVINE

LANDSCAPE MANAGEMENT hears through the grapevine that the Professional Grounds Management Society will probably name a permanent executive director at its next Board of Directors meeting. **John Gillan** has been serving as interim executive director since the board decided not to renew **Alan Shulder's** contract in March...

Golf course designers are catching up with superintendents in the environmental arena. In the June 1992 issue of LM we reported on superintendents who provide excellent golfing conditions as they improve habitat for wildlife on their courses. Earlier this year, American Society of Golf Course Architects president **Art Hills** said, "Today, we're working closely with environmentalists to design and build courses that are...havens for all types of wildlife." Funny, **Joe Kosoglov** at Wolf Run and **David Stone** at The Honors Course (and many others) have been looking out for birds and wildlife for years...

The 13-mile-long Monarch Levee ruptured on July 31 and the swollen Missouri River rushed over the Chesterfield Valley in West St. Louis (Mo.) County. The showroom of dealer/distributor Outdoor Equipment Inc. got clobbered, but **Tom Walker** and his staff apparently had time to move equipment to another location on higher ground. LM drove through the valley the day U.S.40 reopened (Aug. 16) and saw the cleanup at Outdoor under way...

A tip of the LM hat to **Trey Rogers** of Michigan State University, leader of the research team that prepared sod for the Pontiac Silverdome prior to international soccer games this

past June. Rogers, **Paul Rieke** and **John Stier** not only created a great playing field, but also garnered positive national press for the green industry. Next summer, the MSU team faces the real test at Pontiac: the opening round of the World Cup...

Professional Applicators await indications of the Clinton administration's views on urban pesticide use. So far, the Prez has had his hands full with things like the budget and health care. **Carol Browner**, appointed EPA's top gun this year, has yet to take a strong stand. "She has continually made statements saying that reduction of pesticides will be a hallmark of the administration," **Allen James** tells LM. "But they've done very little so far." James is executive director of RISE, Responsible Industry for a Sound Environment, a consortium of pesticide manufacturers, distributors and applicators...

SPORTS TURF GURU **George Toma** says he's taking it easy in semi-retirement, shifting much of his workload to son **Chip**. But he was an excellent host to Turf & Ornamental Communicators Association members earlier this year. He gave TOCA members the grand tour of Royals Stadium, presenting his opinions on everything from synthetic turf to world politics. He also treated TOCA with some door prizes from his vast collection of sports memorabilia. (TOCA executive director **Den Gardner** won an autographed baseball, and LM's **Jerry Roche** took home an official "NFL Ground Crew" Super Bowl cap.)...

READERS! Got an item for "LM Grapevine?" Call us at (216) 826-2830 between 8:30 a.m. and 5 p.m., Eastern Time.

9) Do you offer your customers more than the usual services?

Sodding, seeding, liming, irrigation and installation work are good examples. This is an important way in which many companies hold their important "steady customers" and keep them loyal as well as generating considerably more trade and profit. You might also put together a complete lawn care program which includes preventive disease control and keeping customers' landscapes looking good all year round.

You may feel that angling for and obtaining such added business isn't worth the trouble, but neglecting to do so carries the

risk of losing "steadies" to the competition—especially when cut-rate fees are offered.

10) Are problem customers handled tactfully?

Smart companies do their utmost to answer complaints (see sidebar). Customers will usually promptly spread the word to others about their experiences. These verbal reports can be negative and result in the loss of a "steady" plus other potential or actual customers. Or they can be positive and have the opposite effect on business.

—The author, *Bess Ritter May*, is a freelance writer specializing in business topics for numerous trade magazines. She is headquartered in Philadelphia, Pa.



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Sizing up trees for possible dangers

**If you say a tree is safe,
and it falls apart, there's
hell to pay.**

by James E. Guyette

■ Let's say you and your crew are on a property thinning shrubs and pruning dogwoods. The homeowner comes out to ask about the big maple in the back corner; he's concerned about that overhanging branch. It's probably human nature to take a stab at assessing the risk, but if you're not trained in this type of work, you could bring a major financial problem on yourself and your business.

Landscape managers who give advice to customers on whether a certain tree represents a hazard can face serious legal and liability problems if they are incorrect in their assessment.

Although you may be tempted to help out—or you at least want to avoid sounding ignorant—it's often better to resist the urge. The experts say it's best to back off if you lack formal training in risk assessment.

"If I were in that type of situation, I'd get to the point where I'd have no opinion," says Dr. Kenneth C. Miller, a tree pathologist with Miller and Associates, Ravenna, Ohio.

Legally, someone offering an opinion can be considered an "assumed professional."

"The assumed professional is the semi-qualified tree worker, whether a public employee, a utility forester or a private arborist," says Miller. "It is *assumed* that a



The owner of this house in the Cleveland area wasn't very happy with a tree that succumbed to high winds earlier this year.

person who works with trees every day should know everything about them. Increasingly, these individuals are becoming the target of legal liability in hazard tree cases. They are held to a higher level of responsibility than an ordinary citizen."

Even an entry-level ground person can get snagged if an opinion is offered "because you are 'the expert,'" Miller explains. "If you say the tree is safe, the tree is safe. If it falls apart, there's hell to pay.

"Leave it to the arborist with the liability insurance."

Business owners need to warn their crews, Miller advises. "The employees are going to have to be cautioned by the employers not to make any definitive statement.

"And it's not the easiest thing to do. You either have to come up with a statement or tell them you don't know. Either way, that's not something you really want

to do. I know of no way to get you gracefully out of that situation."

Make a referral—For bracing, cabling or work other than a simple takedown, making a referral to a local firm that belongs to the National Arborist Association may be a good place to start, says Paul McFarland of McFarland Landscape Services, Philadelphia, Pa.

"That's a good thing to look for: the NAA (membership) or a company with a certified arborist on staff who would supervise the job."

A call to the NAA, a local arboretum, your county agent or a city arborist should be able to get this information.

"If anyone should get into the business of assessing trees," says Dr. Alex Shigo, noted arbor-author, "they should be top-of-the-line. This is not something that you read in a book. Those who don't under-

continued on page 26

ELSEWHERE

**Green up your
turf with iron,
page 26**

**Turf desiccation:
a lasting 'gift,'
page 36**

**Winter brings
turf diseases,
page 36**

Six Reasons Why Pendimethalin Is The Market Leader.

1. Broad Spectrum Weed Control

Nothing beats pendimethalin when it comes to broad spectrum preemergents. Used properly, pendimethalin controls six annual grassy weeds, including crabgrass and goosegrass, and nine annual broadleaf weeds, including tough-to-control oxalis and spurge.

2. Cost-Effective Control

The superior performance and application flexibility of pendimethalin reduces late season weed breakthroughs, so it's very economical to use.

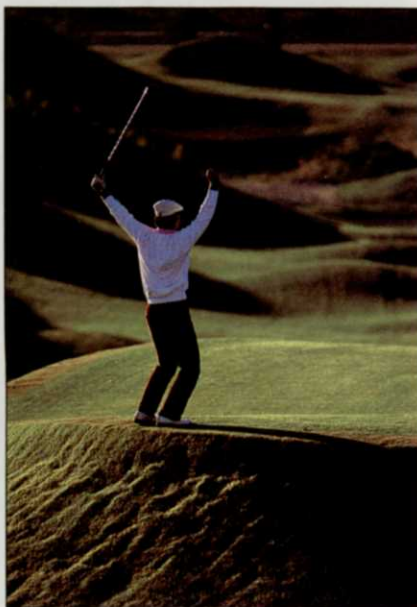
3. Season-Long Control

Unlike other preemergents, the pendimethalin label clearly allows for season-long control of troublesome weeds, including goosegrass, with a *single, properly-timed application*. The pendimethalin label also gives

you flexibility: the option to apply pendimethalin as a split-rate application for the most effective season-long control.

4. Excellent Turf Tolerance

Turfgrasses show excellent tolerance to pendimethalin, even when applied at its highest labeled rates. Used as directed,



pendimethalin offers a wide margin of tolerance on a variety of cool and warm season grasses.

5. Ornamental Tolerance

Good news. Pendimethalin is labeled for numerous ornamentals, making it your best choice for total turfgrass and landscape management.

6. Customer Satisfaction

Professional groundskeepers know firsthand that flawless turf helps them look good, too. Because of its consistent, proven performance, pendimethalin continues to be the most widely used preemergent turf herbicide and the market leader. Available as a liquid, water dispersible granule, wettable powder, and as fertilizer combinations, exclusively through O. M. Scott and Lesco.

 **CYANAMID**
American Cyanamid Company
Agricultural Products Division
Specialty Products
Wayne, NJ 07470

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Always read and follow label directions carefully.

Pendimethalin

Nothing Beats Pendimethalin.

Circle No. 101 on Reader Inquiry Card

What the co will be driving t

Bottom line. That's the most influencing factor in business decisions of the '90's. And few tractors can contribute more to your end-of-column figures than a John Deere 5000 Series.

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Choose from three diesels, 40, 50, and 60 PTO hp. And get high-value features like planetary final drives, wet-disk brakes,



Cost conscious to work this year



hydrostatic power steering, and independent 540-rpm PTO.

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**NOTHING RUNS
LIKE A DEERE®**

stand trees will get themselves in trouble."

Potential risk—Shigo suggests changing the term "hazard tree" to determining "degree of potential risk."

Step one in this process involves asking "if this structure tree failed, is it really a hazard?" Are there people or homes around, or is it in a field?

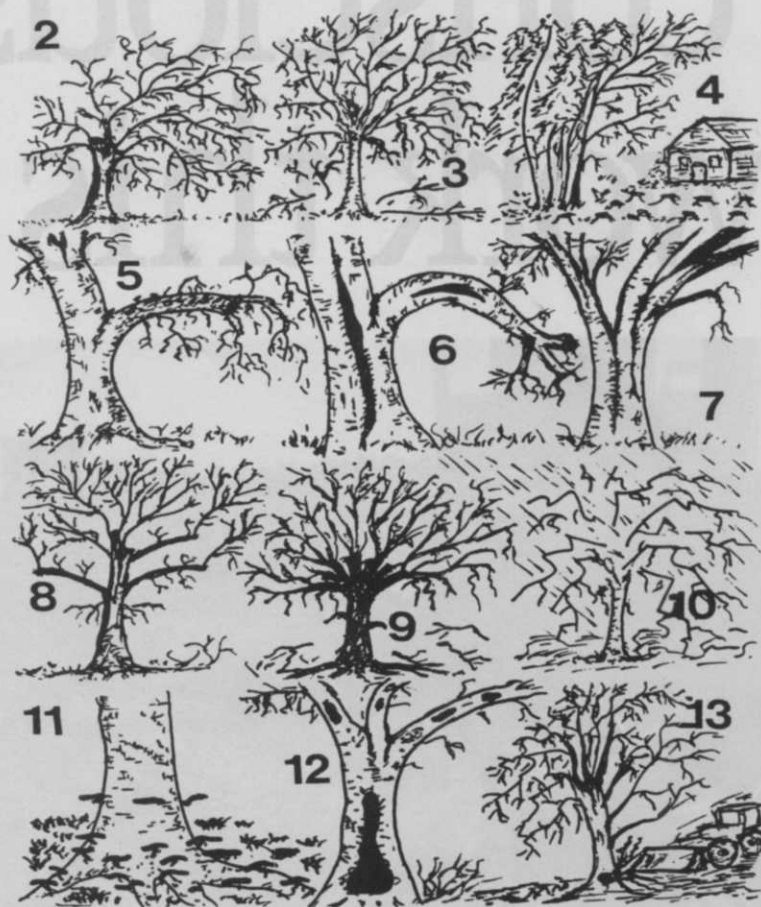
Step two is to use common sense. "The same tree in the same (tree care) manual can be left for a hundred years or be cut tomorrow," Shigo observes. "If we did everything our manuals say, we'd clear-cut our cities."

Branch "loading factors"—the amount of stress placed on a branch that may be prone to failure—are an important consideration.

"Is it a hurricane, a windy day or a sunny day?" asks Shigo. "It's not trees that kill people, it's the (branch) fractures that take place during moderate loads that kill people."

Snow and foliage are other loading factors to note, says Shigo, adding that some loads can actually amount to less of a risk factor when the entire picture is examined. For example, during a hurricane, people usually have enough sense to leave the area.

—The author is a freelance writer specializing in the green industry. He is based in South Euclid, Ohio.



Tree hazards: 13 questions that could save a life (see illustrations above)

1. **TARGET** (page 22): If the tree falls, will it hit cars, houses, power lines or people?
2. **ARCHITECTURE**: Has the tree grown beyond its normal form into a dangerous form?
3. **HISTORY**: Has the tree lost large branches lately?
4. **EDGE TREE**: Were neighboring trees cut away recently, leaving tall trees at the edge?
5. **DEAD BRANCHES**: Are there dead tops or branches? Is the tree dead?
6. **CRACKS**: Are there deep, open cracks in the trunk and branches?
7. **CROTCH CRACKS**: Are there deep, open cracks below joining stems?
8. **LIVING BRANCHES**: Do living branches bend abruptly upward or downward where tips of large branches were cut off—tipping?
9. **TOPPING**: Are large branches growing rapidly from topping cuts on big trees?
10. **STORM INJURY**: Are there broken branches, split trunks or injured roots? Are branches close to power lines?
11. **ROOT ROT**: Are there fungus fruit bodies—mushrooms—on roots? Were roots injured by construction?
12. **ROTS, CANKERS**: Are there hollows or cankers—dead spots—some with fungus fruit bodies? Is the tree leaning?
13. **CONSTRUCTION INJURY**: Have roots, trunk or branches been injured? Is there a new lawn or garden over injured roots?

Source: 'Tree Hazards' by Shigo & Trees, Associates

Green up your turf with iron

Using this micronutrient for rapid color enhancement is making turf and turf managers look good.

■ The chlorophyll molecule in the turf-grass plant is responsible for plant color. Iron is required for the photosynthesis which produces the chlorophyll—thus, iron can help enhance the green color which clients most desire in good-looking turf.

There is an obvious need for iron supplementation
continued on page 36

Biological/chemical mix works, thanks to customer education

Customers must have realistic expectations, says company partner.

■ The Pro-Grass company of Portland, Ore. is now using biological control products in its integrated pest management program. The secret to customer acceptance of biological products, says Pat Nibler, is effective customer education.

"We try to take a realistic view of our customers' environments," says Nibler. "For example, there aren't a lot of insects or disease that will kill a plant outright. So the key is to keep them in check rather than eliminate them out-

right. We want to meet our customers' needs at a price they can afford.

"We'll tell them we won't eliminate all the pests. Our customers need to have realistic expectations, and the only way that can happen is if our people to take the time from the beginning to educate them," says Nibler.

The company tried Javelin, a *Bacillus thuringiensis* product, to control tent caterpillars. They've since been using M-Pede, an insecticide/miticide derived from naturally occurring fatty acids. Nibler says it's an excellent "knockdown" material and synergistic tank mix partner for control of soft-bodied pests.

Product rotation prevents resistance. "We will start off with a pyrethrin in the early spring and then we'll use M-

Pede in tank mixtures with other insecticides on soft-bodied insects such as aphids and mites, then maybe switch to oils later in the summer," says Nibler.

Pro-Grass tank mixes different pesticides together to control a wide range of pests. For example, a mix of M-Pede and Tempo, Orthene, or Dursban will control soft-bodied insects and caterpillars.

Nibler estimates biopesticides add between 30 to 40 percent to his product cost, "but we have found that better trained employees know how to use less of the more expensive materials and still get the job done."

Employees are assets. Nibler and partner Paul Bizon say employee education is a major reason the company has been so successful during its 15 year history of lawn care and landscaping in Portland, Seattle and Concord, Calif.

Nibler sees an influx of national landscape maintenance companies along the West Coast, and believes that Pro-Grass's dedication to employees keeps competitors at bay.

"If we can retain our good employees and enable them to build up some real experience," says Nibler, "then we can offer a degree of expertise, knowledge and maybe even accessibility; the nationals may not be able to match where we do business."

"We've constantly tried to create a culture where this is more than just a job to the employee," says Nibler. "We think that's the backbone of our company and our success over the years, and it affects many aspects of how we run our business."

No 'multiple guess' tests

Employee education at Pro-Grass includes updates on pesticide regulations and compliance, taught by Steve Varga, who has a degree in horticulture from Colorado State University.

● Two or three times each month, Varga issues a training module to all branches. Each branch has its own designated instructor.

● The material is reviewed with employees, who are then tested.

"And we're not talking true-false or multiple choice," notes Nibler. "The employees have to know the answers and we keep track of their scores. We've found this to be an extremely important program for new technicians and a worthwhile refresher course for our veterans."

● Employees also receive weekly pesticide updates. "They all have their commercial applicator's license and we want them to think and work as professionals," says Nibler.

INSIDE

Preserving organic matter ● Gluten meal for weed control ● Mergers/acquisitions
Cornell research update ● New products

Preserve soil's organic matter with a balanced compost mix

The best compost needs air, water and a balance of carbon and nitrogen to accelerate decomposition.

by Paul D. Sachs

■ Organic matter is a valuable asset in soil. However, routine cultural practices can often deplete this important natural resource.

When organic matter levels begin to drop, so do corresponding dependents, including the soil's capacity to hold water and nutrients, and the beneficial activities of microorganisms. Soil structure and fertility are also affected.

Building organic matter is not easy, and raising soil organic matter levels significantly is a monumental task.

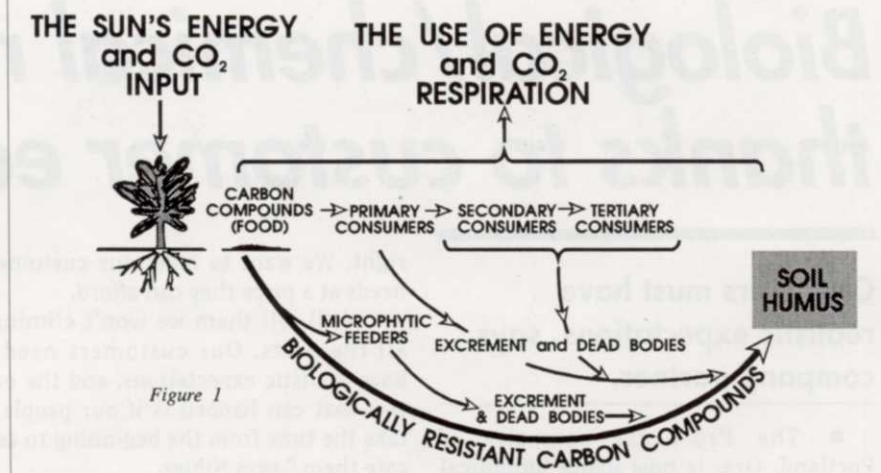
Decomposition of organic matter is an integral part of the carbon cycle (see figure 1). If carbon dioxide were not evolved from organic matter and cycled back into the atmosphere, plants would be unable to produce protein, carbohydrates, and other carbon compounds.

Part I of a two-part feature

Green manure crops such as clover or vetch can contribute significant amounts of organic matter to the soil, but it takes time (a year or more) and may be impractical for a homeowner or a golf course superintendent.

Adding compost will stimulate bene-

CREATING HUMUS



Decomposition of organic matter is an important part of the carbon cycle.

ficial soil functions but compost is not stable humus. Less than one percent of a compost application may actually become stable soil humus (depending on soil conditions, climate, and the way in which the soil is managed). Heavy applications of compost (more than 30 tons per acre) are not recommended because that causes layering, which disrupts the flow of water through the soil. In many situations where organic matter is depleted, adding compost may be an absolute necessity. Repeated applications on an annual basis may be necessary to slowly replenish the soil's organic matter reserve.

However, if cultural practices initially caused the depletion of organic matter, then the problem will eventually reoccur, regardless of how much organic matter is added to the soil. Therefore, know the conditions that cause the depletion of organic matter in the soil and ways to slow down the process.

If you are familiar with making compost and understand what is necessary to speed up the decay process in a compost pile, then it is relatively simple to understand what conditions are needed to slow down that same process in the soil: air, water, a balance of carbon and nitrogen, warm temperatures, and a neutral to alkaline pH to accelerate decomposition.

Aerate properly. Bacteria that

decompose organic matter require oxygen to live. Several other beneficial organisms also need oxygen, so depleting the soil of oxygen is not what is being suggested here. However, it is important to examine exactly where and when aeration is needed.

Sandy soils are naturally aerated because of the coarse particle size; core aeration may not be necessary in some places. Heavily compacted areas such as tees and greens may require aeration regardless of soil classification. Topdress with compost after core aeration whenever possible, to balance out some of the organic matter loss from the infusion of oxygen and create better overall soil conditions.

To test compaction, pour a container of water onto a given area and observe how quickly it seeps into the soil. Beware of a super dry surface, which can actually repel water in some cases. This test should be performed on soils that are already slightly moist. Fast absorption usually means plenty of porosity.

In extremely sandy conditions, it may be necessary to reduce soil porosity. Some managers have successfully reduced soil porosity by adding colloidal phosphate, which contains a natural clay that can bind sand particles together. However, it should only be used where soil phosphate levels are moderate to low.

Other commercially available clays have been used with mixed results. Composts or other materials rich in

organic matter will also bind sand, but can decay rapidly because of the large amount of oxygen that naturally occurs in sandy soils. However, applications of compost can significantly increase root production which adds even more organic matter to the soil.

In heavy, high clay soil, tillage may be necessary. However, if organic matter is low, tillage will accelerate the decomposition of organic matter to an even lower level.

Areas that need renovation often are already low in organic matter.

Slit overseeding may be a more prudent practice. On smaller areas, many managers have used tarps or black plastic to kill existing vegetation by cutting off light. If cultivation is necessary on soils already low in organic matter, tilling at a shallow depth is advised.

Monitor water levels. Too much or too little water can cause problems.

The bacteria that decompose organic matter are just as dependent on moisture as any other living thing, but common sense dictates that the ideal amount of water for plants is also ideal for the accumulation of organic matter. After all, plants are the main source of it.

If water is supplied through irrigation, it is important to monitor moisture levels carefully and practice watering that encourages roots growth. Some soils may require deep and infrequent watering for maximum plant growth, while others may need a low volume, high frequency program.

Remember, drowning roots can be more stressful to the plant than drought.

In December: Temperature and nitrogen levels

Paul Sachs is founder and president of North Country Organics, a Vermont-based manufacturer and supplier of natural fertilizers, soil amendments and environmentally compatible pest controls since 1983.

His book, Edaphos: Dynamics of a Natural Soil System, examines ways in which Sachs believes human beings are linked to the ecosystem, and how that link determines the future of civilization. To order Edaphos, call (802) 222-4277.



Roots buys RGB

NEW HAVEN, CT.—Roots, Inc., the leading manufacturer of biostimulants for turf and nursery, has purchased RGB, the leading maker of chelated micronutrients.

Chelation is a process by which nutrients are made more available to plants.

Roots Chairman Bob Weltzien says

the purchase was motivated by the success of the company's ironRoots products, a combination of micronutrients and biostimulants.

"Roots will now be able to offer the best in both micros and bios," says Weltzien.

Roots will retain all assets and employees of RGB, and will manufacture and distribute out of Kansas City.

Earthgro, Harmony Products sign production/marketing agreement

BLOOMINGTON, MINN.—Earthgro, Inc. and Harmony Products, Inc. signed a five-year marketing agreement on August 15, to sell organic products in areas of high "environmental sensitivity."

Earthgro will be the primary distributor of Harmony's high analysis, slow-release, organic base turf and garden fertilizers for retail and professional markets in the Northeast.

Harmony will be the sole manufacturer of Earthgro's natural fertilizer products in the eastern U.S.

Sources say the agreement will take advantage of Earthgro's wide marketing and distribution networks and Harmony's fertilizer and manufacturing expertise.

The agreement is contingent on certain performance requirements placed on both companies.

Earthgro makes and distributes bagged soils, natural fertilizers and bark products from Virginia to Maine.

Harmony's specialty is its patented, slow-release nitrogen technology.

Predator insect control topic of new manual

■ Learn about the predator concept of biological pest control in a new book by University of Maryland turf and horticulture scientists.

Biological Control of Insect and Mite Pests of Woody Landscape Plants: Concepts, Agents and Methods, is co-authored by Dr. Michael J. Raupp, Roy G. Van Driesche and John Davidson.

Raupp, an entomology professor at the University of Maryland/College Park, has been one of the most noticeable university experts to explore the biological approach as an alternative or supplement to chemical pest control.

Van Driesche is with the University of Massachusetts, Davidson from the University of Maryland.

The authors believe biological control, as an alternative to chemicals, will hopefully avoid the problem of pesticide resistance, pest stimulation and pesticide-

induced outbreaks, as well as possible non-target injury.

The objective of biological control, say the authors, is "to

lower pest densities to innocuous levels and keep them there." Biological control may be achieved by the conservation, augmentation or importation of predators and parasites, or the use of formulated pathogens or nematodes.

The manual reviews biological control procedures, and identifies predators, parasites and pathogens useful in the natural control of harmful pests. The book contains 56 color photos.

The manual was written with support from the Maryland and Massachusetts Agricultural Experiment Stations, the U.S. Department of Agriculture Cooperative Extension Service and Forest Service, and the Mass. Dept. of Environmental Management.

Large orders will receive a discount. To order, contact Steve Rothman, at Agriculture Duplicating, 6200 Sheridan St., Riverdale, MD 20727; (301) 403-4263.

Bio Grounds Keeper, Sustane join forces

BLOOMINGTON, MINN.—Bio Grounds Keeper, Inc. and Sustane Corporation have signed a definitive letter of intent to merge the two companies.

The new company, Sustane Corporation, will be one of the largest producers of organic and biological products for the lawn, garden, turf and agricultural industries. Corporate headquarters will be in Bloomington.

David Henderson, managing general partner of Founding Partners II, a Minneapolis venture capital fund participating in the financing arrangements, will become president and chief executive officer of the merged company.

Craig Holden, president, founder of Sustane in 1987, will serve as executive vice president and chief operations officer.

The new company will be one of the largest makers of organic and biological products for lawn, garden, turf and agricultural use.

Thomas Duffey, president of Bio Grounds Keeper, will serve as executive vice president of sales, marketing and administration.

Bio Grounds Keeper develops and markets organic, biologically-based products for the lawn and turf industries. Its liquid

and dry thatch-reducing products are marketed and distributed internationally and in the U.S. under the Bio Grounds Keeper label.

Sustane Corporation manufactures and markets organic fertilizers made from composted turkey litter for the agricultural and turf industries.

"Organic lawn and turf products have shown steady growth during the past five years," says Duffey, "and we expect that growth to continue due to the proven performance of organic and biological products and increased environmental awareness. This merger will allow us to combine and strengthen our new product research and development programs, as well as our sales, marketing and distribution of natural products."

Crop Genetics to market Spod-X in U.S., Europe

Naturally-occurring insect virus controls beet armyworm, a highly-destructive greenhouse pest.

COLUMBIA, Md.—Crop Genetics International (CGI) of Columbia, Md., recently entered into an agreement with Brinkman B.V., in The Netherlands, for exclusive marketing rights to Spod-X, CGI's first environmentally-compatible pesticide.

CGI will market the product in The Netherlands, Germany and Belgium.

CGI and Brinkman also announced the companies had purchased the rights to a Spod-X registration application with the Dutch environmental regulatory agency.

Spod-X is the first of a series of insect virus products to be produced by CGI's InStar division, says Dr. James Davis, head of research and development at CGI.

Spod-X is a naturally-occurring insect

Spod-X is expected to control armyworms now immune to conventional chemical control.

virus which controls the beet armyworm, a highly destructive pest of greenhouse ornamentals, such as chrysanthemums and roses. According to CGI, the pest has become immune to currently available synthetic pesticides.

In early June, CGI received permission from the Environmental Protection Agency to sell Spod-X in the U.S. It had been working with the DuPont Company to develop and market insecticidal virus products, including Spod-X. Under the DuPont/CGI alliance, CGI will market the bioinsecticides through local distributors for certain markets such as greenhouses in The Netherlands. Joe Kelly, president of CGI, says he is looking forward to more marketing arrangements in the U.S. and Europe.

DuPont currently provides Crop Genetics with funding to develop production and purification methods that permit large scale manufacture of insecticidal products at competitive prices. The company has already pledged \$3.75 million for the development of InStar products.

Crop Genetics has leased a newly-renovated production facility that will also serve as company headquarters. Test marketing plans are being prepared, and the first sales of Spod-X are anticipated to be early next year.



The beet armyworm, after a run-in with Spod-X.

Photo courtesy CGI

Spod-X has shown good control of beet armyworms in field trials, according to Dr. Faith Zwick, project manager for insecticidal virus products at DuPont.

"We believe Spod-X will be a valuable tool for Integrated Pest Management programs, particularly in those areas where beet armyworms have developed some resistance to crop protection chemicals," says Zwick.

The EPA's registration is conditional, and requires CGI to complete one additional study during the next three years. According to Davis, that study will be completed soon.

Corn by-product works against crabgrass

Dr. Nick Christians at Iowa State says marketing talks under way for products containing corn gluten meal.

■ Surface applications of corn gluten meal can control crabgrass, reported Dr. N.E. Christians at the International Turfgrass Conference this past July.

Gluten is a protein substance extracted from some milled grains. The gold-colored powder is popular for use as an animal feed.

"Laboratory and field studies indicate that this material has the potential of being used as a natural 'weed and feed' product to inhibit the establishment of germinating weeds in mature turf stands," said the Iowa State University researcher.

"There is an inhibitory substance in this corn by-product," explained Christians, "that acts as a growth regulator to prevent

root formation of germinating plants.

"When drying occurs, the plant dies. A drying period is required for weed control. If the treated area remains excessively wet during the germination period, control is reduced."

According to Christians, timing of applications plays a big part in the effectiveness of the material's use as a pre-emergent. If the material is applied too early or too late, weed control is reduced.

The researcher commented that the material can provide nearly complete control of crabgrass in Kentucky bluegrass, but at rates above what a turfgrass manager would probably want to use. However, a level of 2 lbs. N per 1000 sq. ft. can provide 58 percent reduction in crabgrass establishment, he says. This is practical in a spring application because the corn gluten meal also contains approximately 10% nitrogen (N) by weight, making it a good natural fertilizer for turf.

"For plants with fully developed root

systems, the material acts as a natural, organic nitrogen source with N release characteristics similar to other commercially available organic N sources," said Christians.

Christians was issued a patent in July 1991 to use corn gluten meal as a pre-emergence herbicide when applied to the soil surface. Marketing agreements are reportedly under negotiation.

Further tests will determine the spectrum of weeds controlled by corn gluten meal, and whether it can be used on other crops.



Christians: Timing is key with gluten meal.

—Ron Hall



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Cornell research covers natural/organic bases

Tests suggest chemicals and biologicals may be used together for insect control.

ITHACA, N.Y.—Cornell University researchers who have intensified their biological and organic turf care tests report positive findings from projects begun in 1992.

While some tests suggest biological controls may outperform chemicals in some instances, they also offer hope that chemicals and alternative products can be used in tandem for turf care.

Preliminary studies show that combinations of fungal pathogens and traditional insecticides might increase grub mortality.

Insect control. In tests using biologically based control agents for scarab grub control in turfgrass, 14 isolates—fungal pathogens of soil insects—were tested against Japanese beetle grubs.

According to Dr. Michael Villani, of the Geneva, N.Y. experiment station, two of the isolates are currently being considered for commercial use. The other 12 were chosen because they were taken from scarab grubs around the world.

Villani reports that some isolates were more dependable than others throughout the course of the study, due to a variety of environmental conditions found in city



Villani: Soil temperature and moisture important.

golf courses, mostly combinations of soil temperature and moisture.

"Fungal pathogens don't like free water," says Villani, "and the spores don't survive as well, and don't adhere to the grub as it moves through the soil."

Preliminary studies also showed that combinations of fungal pathogens and traditional insecticides might increase grub mortality and reduce the lag time common for many insecticides in soil.

Villani reports that fungal pathogens were added to composts used for top dressing greens, with encouraging results. Testing in this area continues.

Ideal conditions. As with any chemical control products, environmental conditions must be suited for maximum biological insect control. Villani's studies suggest that under certain environmental conditions—primarily related to soil moisture and temperature—commercially available entomopathic nematodes may outperform standard turfgrass insecticides for grub control.

Disease control. Plant pathologists Dr. Eric Nelson and Cheryl Craft are currently studying biological control strategies with compost-based organic fertilizers. According to Nelson, research conducted in 1992 centered on evaluating composts in the field for disease suppression, developing laboratory assays to assess microbial activity and biomass and recover isolates of bacteria, fungi and actinomycetes from suppressive composts.

Nelson says data was collected for the suppression of dollar spot with various composts. Snow mold suppression tests are ongoing.

"We hope to understand how disease-suppressive properties of composts might be predicted," says Nelson.

Organic greens. "As peat becomes more difficult to mine, alternative organic sources will likely become common in putting green rootzone mixes," says Dr. Norm Hummel of the university's floriculture and ornamental horticulture

departments.

Hummel, Nelson and research associate Mary Thurn made a two-year evaluation of four organic sources in sand-based rootzones for disease suppression, physical stability, and nitrogen mineralization.



Hummel: Composts may work in golf course greens.

In this experiment, they tried to determine the effect of compost on Pythium root rot and the impact of phosphorus on disease severity.

In field trials, a municipal sewage sludge compost, a brewery waste compost and reed sedge peat provided significantly better disease control than either the sand control or a seaweed product. Control was generally better than 80 percent.

In another study, physical properties of laboratory-packed samples were compared to undisturbed field cores taken one after establishment, to determine if measurements taken on laboratory-packed samples could be used to predict physical properties in the field.

Test results suggest that composts may be useful as organic amendments for sand-based rootzones.



Nelson: Compost extracts suppress Pythium spp.

For more details of the Cornell research, contact Dr. Hummel, 20 Plant Science Building, Cornell University, Ithaca, NY 14853.

PRODUCTS

EPA approves biopesticide for use on turf, ornamentals

MVP biopesticide from Mycogen Corporation has been given a green light from the Environmental Protection Agency and the California EPA for a number of turf and ornamental uses.

MVP is an encapsulated bioinsecticide based on *Bacillus thuringiensis* (Bt).

The product's patented CellCap encapsulation improves residual activity and field performance, according to Mycogen.

Craig Laursen, specialty marketing product manager, says CellCap insecticides remain active in the field three to five

times longer than traditional Bt products. With the CellCap system, dead bacterial cells serve as biological microcapsules—or "biopackages"—which protect the fragile, insecticidal proteins from environmental degradation.

The CellCap system combines positive features from different naturally-occurring organisms. The biopackage component consists of the cell wall of *Pseudomonas fluorescens*, a non-pathogenic bacterium which is naturally found in soil, water and on plant surfaces. MVP is now approved for use on bedding plants, flowers, ornamentals, turf, shade trees and nursery trees.

Labeled pests include armyworm, buck-moth caterpillars, cabbage loopers, diamondback moths, fall armyworms, fruit tree leafrollers, loopers, omnivorous leafrollers, tent caterpillars, tobacco budworms and tortixes.

MVP is most effective against caterpillar larva in the first and second molting stages.

According to Mycogen, MVP is harmless to beneficial insects, including biocontrol predators. The product has minimal re-entry restrictions.

MVP can be used alone or in a tank mix.

Circle No. 203 on Reader Inquiry Card

Organic soil additives custom-made for golf, athletic fields

North Woods Organics of Waupaca, Wisc., now offers sphagnum, reed-sedge, hypnum and top moss for use as soil amendments.

According to the company, these organic peats are ideal for use as components in root zone mixes, for golf course greens and tees and athletic playing fields.

Reported benefits include faster maturation of turfgrass, faster recovery from traffic and optimum water holding capacity and better disease resistance.

Circle No. 204 on Reader Inquiry Card

New book explains dynamics of natural soil systems

Edaphos is a new book by Paul D. Sachs that explains the detailed inter-relationships between the soil and the earth's environment.

In "Edaphos," Sachs explains the reasons why the author believes mankind is critically linked to the ecosystem.

According to Sachs, the future of civilization is determined by our reverence or apathy for the soil.

The book answers questions that growers, gardeners and extension specialists always ask, according to Karen Idoine, extension specialist at the University of Massachusetts.

To order or obtain more information, call (802) 222-4277

Circle No. 209 on Reader Inquiry Card

Video explains right way to compost, build recycle centers

A new video entitled *Composting: A Recipe for Success*, is available from Compost Productions, at International Marketing Exchange, Inc., McHenry, Ill.

The video is hosted by Cort Sinnes, a syndicated columnist and former editor of *Flower & Garden Magazine*.



Included are tips for building backyard recycling centers to help homeowners take advantage of the opportunities to convert the many household products that can be collected and recycled.

Cost is \$14.95, plus \$3 for shipping charges. Quantity pricing is available.

To order or obtain more information, call (815) 363-0909.

Circle No. 208 on Reader Inquiry Card

EVENTS

OCTOBER 18-21: Biological controls as viable methods of pest management is the subject of a turf conference to be held in Madison, Wisc.

The conference will include useful information on identification and control of beneficial predators in pest control.

With the expansion of biocontrols from agriculture to turf care, the conference is open to forest managers, greenhouse and nurserymen, extension agents and landscape contractors as well as farm industry personnel.

Dan Mahr, entomologist at the University of Wisconsin Madison says predator pest control has been used for more than 100 years, but has been less popular than chemical control products.

●Participants will learn the basics of biological control; insects and mites as pests; the importance of natural control; beneficial natural enemies and approaches to biological control.

●Methods of biological control, such as releasing beneficial natural enemies and encouraging those that occur naturally, will be discussed.

●A crop protection seminar covers biological control for alfalfa, corn, crucifers, vegetables, fruit crops, forests, stored products and nursery and landscape plantings.

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Terry McIver
Managing editor,
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IRON from page 26

plementation where iron chlorosis or plant yellowing occurs, a condition common to calcareous or alkaline soils (pH 7.0 or higher), as well as sandy soils. Today, however, most professionals applying iron are after cosmetic results rather than preventing or correcting chlorosis.

Iron can be used to make the turf (and the turf manager) look good.

Most soils contain abundant supplies of iron, but due to its limited solubility, this trace element is seldom taken up in sufficient quantities to meet the demands of high-grade ornamental turf.

Research has shown that, in addition to the effect of soil types and pH levels, iron uptake can be reduced by:

- cool soil temperatures,
- excessive moisture,
- micronutrient imbalances and
- high soil phosphate levels.

Heavy metals or high levels of nitrate nitrogen can also cause iron to become "locked up" and thus unavailable to the plant.

Supplemental iron has been available for years in many of the better grades of granular nitrogen/potassium/phosphorus fertilizers. Iron applied to the soil, however, rapidly reverts to a ferric state which is not available for plant absorption unless it is chelated. Unchelated soil-active products can get tied up with other soil minerals, decreasing the iron's solubility. And ferrous sulfate or ferrous ammonium sulfate iron in granular form must be watered in to prevent burning.

Chelated iron products, available in both dry and liquid forms, are formulated to hold iron in an available form for a more extended period of time. A chelating agent such as EDTA causes the iron to lose ionic characteristics and protects the micronutrient from soil reactions. This allows chelates to be used at lower rates and with reduced burn potential.

But chelated products are also generally more expensive to use than other irons, and may be slower in producing a visible color change. Thus, in recent years, sprayable iron sulfate products that are absorbed through the foliage have seen the most growth in the green industry.

Research has shown that foliar applications are significantly more effective and efficient. Foliar-active products not only provide a greater amount of plant-available iron, but they are taken in by the leaves, where the chlorophyll is produced.

Turf desiccation: winter's lasting gift

The biggest culprit is intense cold wind at times of low humidity. Disease comes along later.

■ Winter brings with it more than just colds and flu, mom. It can also beat up the turf until there's no turf left. They call it desiccation, and it's a lousy way to start the spring.

Turf desiccation—a.k.a. winter kill—comes in two forms: atmospheric and soil desiccation.

Atmospheric desiccation is caused by the general drier environment, accompanied by stinging wind and low humidity. The soil is unable to absorb water at lower temperatures, too, which adds to turf frailty.

Soil desiccation results in white leaves, but the leaves are more limp.

With an all-out temperature kill, turf leaves appear to be water-logged. They take on a whitish-brown color, and eventually turn dark brown. The leaves are limp and matted, and you may detect a moldy odor. This type of kill occurs when the soil temperature plummets quickly.

Look for it during late winter freeze-thaw periods.

Dr. Jack Hall of Virginia Polytechnic Institute says desiccation can occur on

sand-modified soil where there's limited moisture in the soil profile.

As Hall explains, winter desiccation is basically a function of available moisture and the extent to which the root system can absorb and store that moisture.

"Our best approach is sound management," advises Hall, "and fertilize in late fall to maximize root development."

"Our winter rainfall is generally adequate," says Hall. "The last time we lost bermudagrass to winter desiccation was in 1980-81. We had a greater kill on overseeded bermudagrass than in that which was not overseeded. The living overseeded grass continued draw down moisture."

Sodium content may cause problems. "Any time you have salt concentration in water, availability of water to plant is lessened," says Hall. "If you go into winter with high salt, unavailability of moisture is more of a problem."

● Younger turf is more susceptible to desiccation.

● Protect turf with heavier dose of top-dressing. Fabric may also work.

● Anything that promotes general plant health will reduce the threat of desiccation.

—Terry McIver

Winter brings disease

■ Snow mold invades in early spring, and lasts until June. Apply fungicide in early winter, ideally on the day before the first lasting snow.

Pink and gray snow mold occur when the temperature is just above freezing and accompanied by excess leaf moisture. The infected turf will turn flaccid and become dehydrated. Gray snow mold is differentiated by sclerotia imbedded in the leaves and crowns of the diseased plants. Look for large brown patches covered with a whitish fungal mycelium.

Cottony snow mold begins as yellow patches which become the color of straw. Look for gray mycelium on leaves.

Prepare turf for winter disease before it goes into winter with soft growth from excessive available nitrogen.

Cultural prevention—For pink snow mold: Avoid excess nitrogen in the fall. Prevent snow accumulation on highly maintained turf. Improve air movement by pruning trees and removing brush. Remove leaves in fall and winter. Rake or spike infected areas in spring. Remove thatch build-up.

Gray snow mold: Avoid early fall nitrogen fertilizer before the first snowfall. Avoid excess lime. Keep the thatch layer to a minimum.



Pink snow mold

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People use a herbicide. Mild usually

cide. So the milder your herbicide is to turfgrass, off-target plants and the environment, the better off you are.

That's why you should seriously consider Surflan* herbicide for your weed control program.



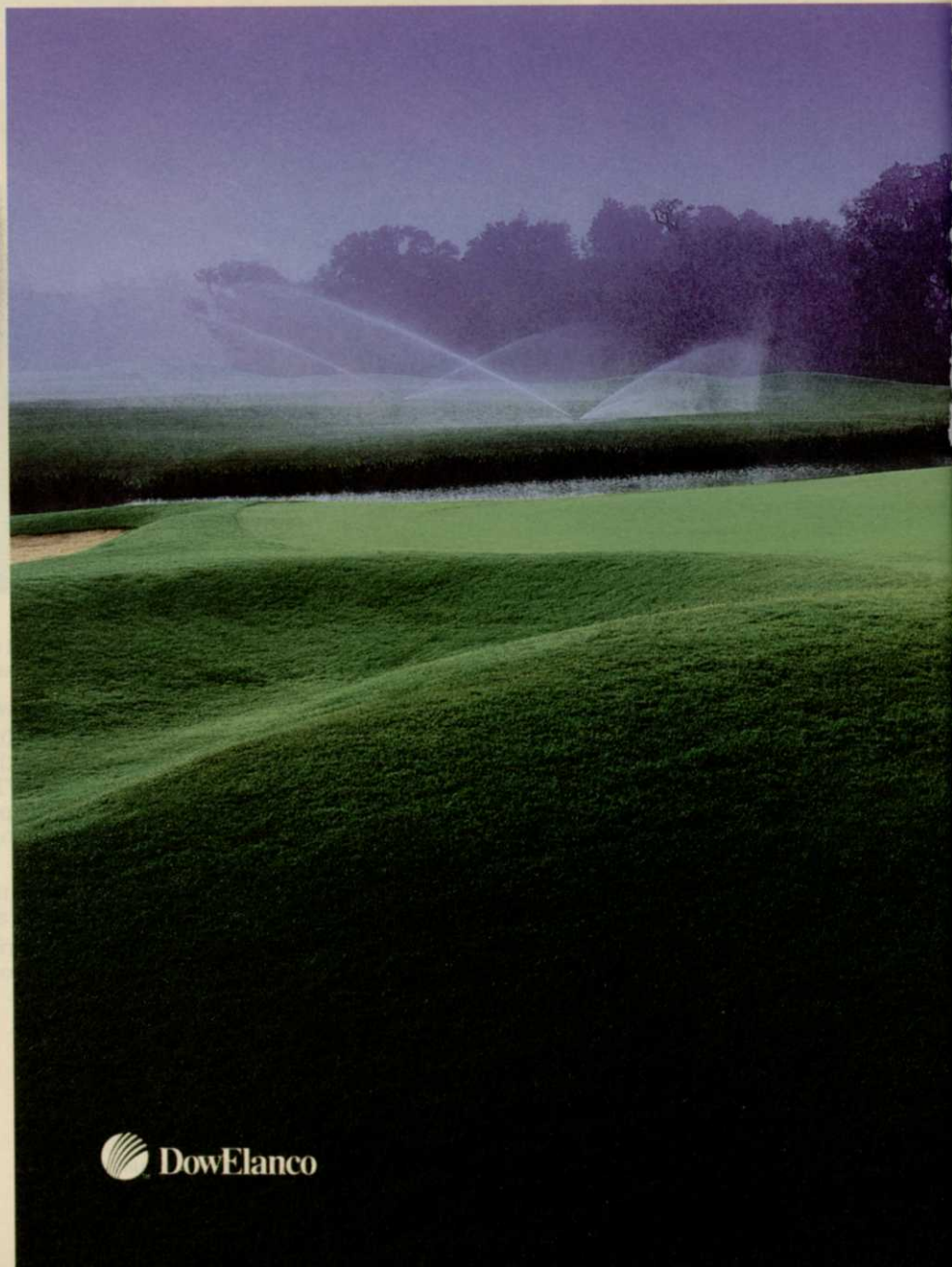
How To Keep Weeds From Sneaking Up On You.

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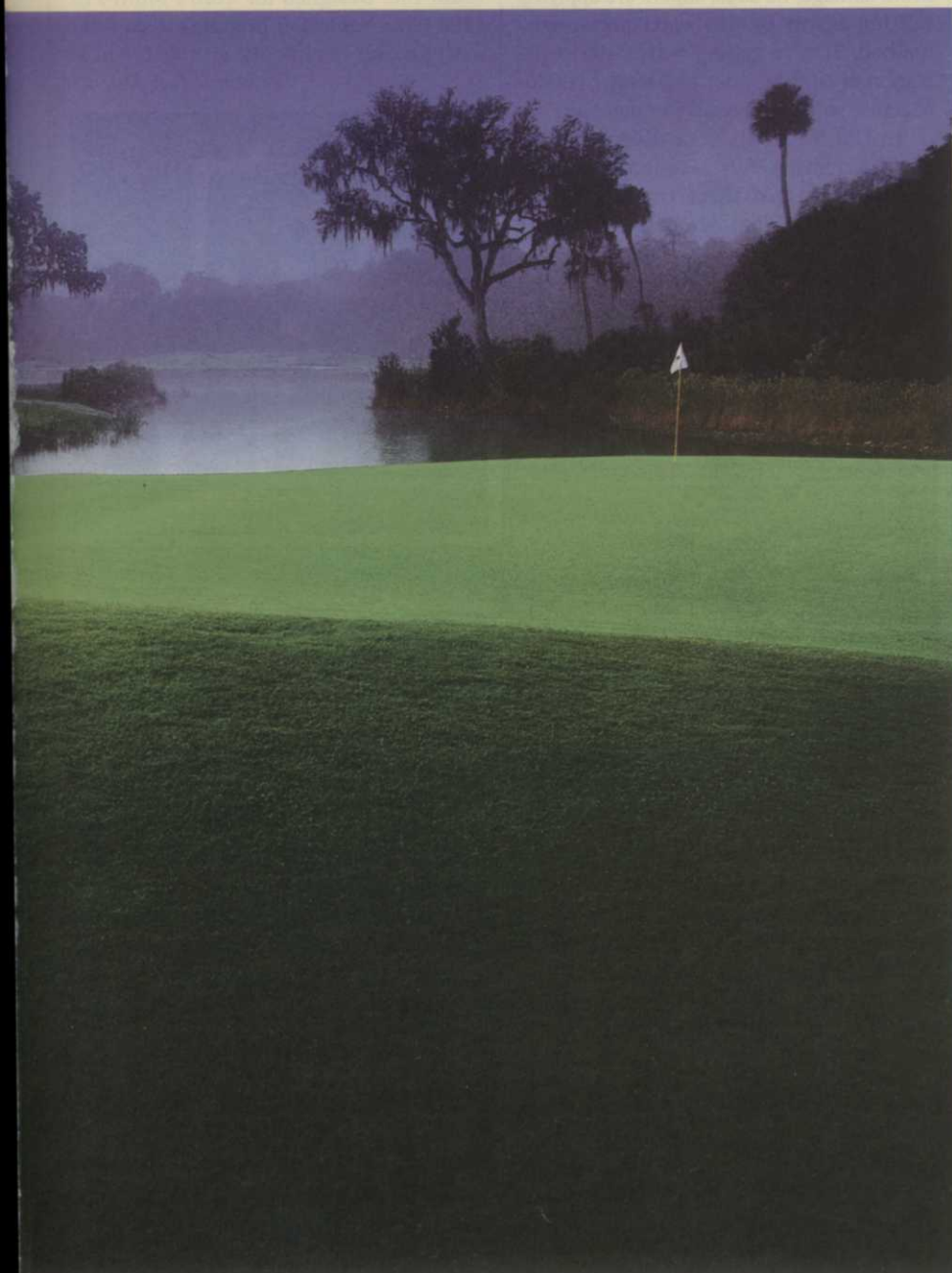
or flowers. Surflan is available as a sprayable and on fertilizer. If you prefer a granular form, there's XL* herbicide (it contains the same active ingredient



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GOLF 'SCAPING

Injecting wetting agents into greens soil

Toro, Kalo, Aquatrols innovations make it easier for superintendents to dry out wet greens.

■ Harold Edgerton was one of the first people to run liquid soil wetting agents through his water injection aerator to relieve stressed-out golf greens.

He began in mid-1992, shortly after the Toro Co. approved wetting agents for use with its HydroJect 3000, a practice proved by university research to provide faster green-up and improve turf appearance.

But Edgerton added one new "twist" to the technology: he found an effective metering system that uses a proportional injector attached just off-green, but on-line to the HydroJect. This eliminates using a spray tank mix which might introduce corrosion-causing residues. He found that, by connecting a non-electric self-priming Dosatron injector (11 gpm rate) to the HydroJect, he could assure accuracy even when water flow rates changed. Trial results last fall were so good that he's now adapted the system for golf courses which are served by his business, E&E Enterprises of St. Charles, Mo.

Incoming water drives the injector's piston. This action pulls the wetting agent into the mixing chamber and blends it with the water flow.

E&E Enterprises reports success using Hydro-Wet RTA ("ready-to-apply"), a Kalo product found by Michigan State University to deliver considerably more moisture with greater residual power in the rootzone.

RTA is recommended for HydroJect injection and for its Pro-Op, a hose-end applicator for syringing golf greens.

"In our closest areas around here, we will get an inch-and-a-half of rain, then suddenly the sun comes out to quickly 'cook' greens," Edgerton observes. To avoid damage, he adds, supers are applying wetting agents by this water-pressurized method. They're getting both faster penetration of surface water and longer residual action with less overall turf damage.

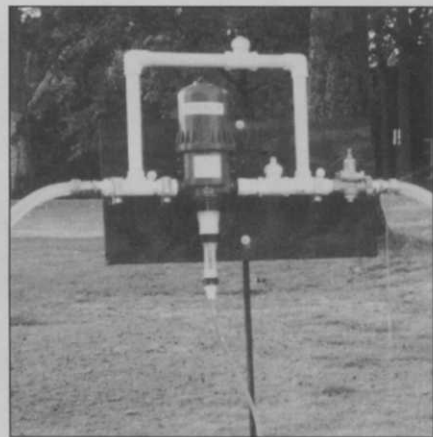
In the St. Louis area, Edgerton has used as many as five aerations per year, but he finds that three times with the HydroJect is ideal for many Midwest locations.

With many supers still coring in the spring and fall, Edgerton finds this injection service to be in greatest demand "in the

summer, when golf course activity is just too busy for traditional coring. Also, some surfaces of greens become too hard for conventional aeration to be truly effective."

Another innovation—This summer, Toro introduced the Injector Pro chemical injection spraying system developed by Hahn Inc. Designed for Toro's Multi-Pro 1100 Work Vehicle, it promises to do away with mixing chemicals with water in a

continued on page 42



Harold Edgerton has used a Dosatron/HydroJect hook-up for more accurate injection of wetting agents and to dry out wet golf greens. The Dosatron injector (inset) is self-priming. It pulls the wetting agent into the mixing chamber where it's accurately blended with water flow.

ELSEWHERE

**More on
injections,
page 42**

**Mechanic likes
sharpeners,
page 42**

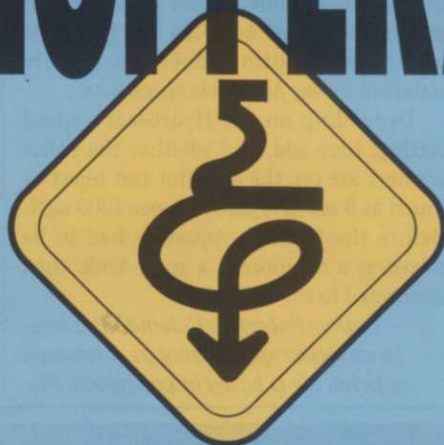
**GCSAA seeks
new CEO,
page 43**



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Mechanic likes these grinders

■ To the editor:

I read your article on grinding and sharpening blades in the August issue and have a few comments to make.

I used to backlap after grinding at some of the courses I worked at. Now, I don't

backlap any more because of the Express Dual Spin Grinder and the Anglemaster Bedknife Grinding System.

This system eliminates the need for backlapping because the Anglemaster trues the bedknife to the reel. The spin

grinder grinds the reel with a relief already in the reel. This eliminates the process of relief grinding that would be done on other types of reel grinding machines.

With this system, we can go 6 to 10 weeks between grindings, and the life of the bedknives is almost doubled. We save a few thousand dollars every year in labor, lapping compound, reel bearings and other related repairs.

All of our greens and tee mowers' bedknife angles are ground at 7 degrees; fairway angles are ground at 9 degrees; roughs angles at 11 degrees. All bedknife face angles are ground at 95 degrees.

While Tim Moraghan made good points, this is another system that works very well and that superintendents and their mechanics might consider.

*Paul Fox
Boca Woods C.C.
Boca Raton, Fla.*

INJECTION from page 40
sprayer tank.

The new system is designed to continually mix correct amounts, and to electronically adjust application rates regardless of vehicle speed or terrain.

With Injector Pro, users can decide, in the field, to use a one- or two-chemical delivery system with water and chemical held in separate containers. This eliminates rinsate disposal and incompatibility problems since the materials have contact briefly before going out sprayer booms.

More news—Other companies are making it easier to apply turf chemicals for faster results with slow-draining greens. Aquatrols, a leading water management and wetting agent supplier, recently introduced Dose-It, a portable, water-driven in-line injector designed to

complement the HydroJect 3000.

Aquatrols adapted the Dosatron pump for faster, more effective turf application of AquaGro-L, its turf wetting agent, through a HydroJect. Dose-It is easily mounted to a hand truck or utility vehicle, and can be quickly hose-connected for accurate proportions: one part AquaGro into 500 parts water. The solution does not require watering in, say Aquatrols specialists.

Depending on the HydroJect's speed setting, they add, and whether the roller washers are on, the operator can inject as much as 9 oz. of AquaGro-L per 1000 sq.ft. Before the Dose-It, AquaGro had to be mixed as a solution in a spray tank, then connected to the HydroJect.

—Author Robert G. Coleman is a freelance writer specializing in landscape articles. He is based in Longwood, Fla.

(ED. NOTE: Check with your local suppliers for information on this equipment. If they don't carry these items, write to Bernhard & Co. Ltd., Bilton Road, Rugby, ENGLAND CV22 7DT; or phone 011-44-788-811600.

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GCSAA looks for new CEO

■ The Golf Course Superintendents Association of America (GCSAA) is looking for a new chief executive officer following the resignation of John Schilling to open his own business.

GCSAA president Randy Nichols wrote this in a letter to members:

"The Board of Directors is extremely disappointed with (Schilling's) decision to resign. However, we do respect his desires to begin his own business where his ability and skills will again be demonstrated."

Robert Ochs and Diana Green also resigned to become part of Schilling's new venture, St. Andrews Corp., based in Lawrence, Kans. It will offer various services—event management, import/export consultation, risk management and insurance services—to golf and other industries. Ochs had been senior director of communications and general counsel; Green was senior director of operations.

Schilling's resignation is effective Jan. 1, 1994, but he will stay through January to affect a smooth transition in leadership. He will also be available to help manage the

1994 Conference & Show in Dallas.

"I have thoroughly enjoyed the last 15 years at GCSAA, serving the membership and the golf course management industry," Schilling told LM. "The association has made tremendous progress during the last few years, and I've been very pleased to be a small part of that. I believe the association has a bright future, and look forward to continuing to assist the golf industry."

Schilling took over as executive director on Sept. 1, 1983, when his controversial predecessor, Jim Loughlin, resigned. During Schilling's tenure, the GCSAA has increased its membership, grown its annual Conference & Show, and expanded its boundaries internationally.

The GCSAA Board of Directors is conducting a nationwide search for a new CEO amidst an organization-wide realignment. Arthur Andersen & Co., one of the world's leading consulting firms, following

a lengthy study, had recommended:

1) Eliminating the senior director management level.

2) Creating an Accounting and Finance Department headed by a chief financial officer.

3) Creating the position of deputy chief executive officer.

4) Consolidating the Communications and Publications Departments, separate from the Development Department.

5) Creating a Conference & Show Department.

6) Adding a human resources manager.

The Board approved Andersen & Co.'s recommendations 8-1. The dissenting vote was cast by immediate past president Bill Roberts of Lochmoor Club in Grosse Point Woods, Mich., who resigned.

In his letter of resignation, Roberts objected to the study and the need for the recommended changes. "This process could...subject the association and certain individuals to needless litigation," he wrote. "To implement the study places the chief executive officer in a mere figure-head position."

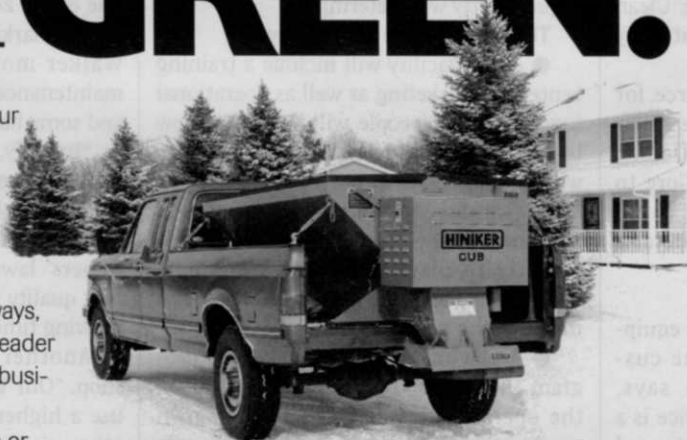
—Jerry Roche

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LAWN CARE INDUSTRY

HAPPY CUSTOMERS

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HIGHER PROFITS



Margins just so-so? Exceeding customer expectations will help strengthen them, this landscaper says.

■ Statistics by the Associated Landscape Contractors of America claim the average landscape management firm is operating with a 2 to 3 percent profit margin. Clean Cut of Austin, Texas, quadruples that every year, by design.

"Too many times, the sales force for landscape firms becomes a price taker instead of a price maker," says Dennis Dautel, who combined with Rex Gore to launch Clean Cut in 1984. "Profit is not our only goal, but we like to operate at a margin of 8 percent or better."

How have they done it?

"Top people, the best available equipment, and work that exceeds the customer's expectations," Dautel says. "Theoretically, landscape maintenance is a no-profit business. It's easy to get into, and just as easy to get out of. So you're always competing with the low-price operation, many of which get into the business for a year or two and then disappear."

Clean Cut has a unique management system.

"We have to differentiate our service from others to sell at a profitable level,"

says Dautel. "It takes an intense effort to teach our people how to do that. But after eight years, we think we have the techniques pretty well determined."

The keys—Here are the keys:

- A new facility will include a training center for marketing as well as operational functions. New people will be taught how to set bid specifications and how to work with customers.

- Employees are involved in decision-making. Small groups meet frequently to discuss jobs and projects under way, as well as things that can improve the product.

- A new management operations program allows the "team leaders/partners" of the operating teams to build their own equity in the business by managing people and equipment efficiently.

- Special computer software ("SuperScope") developed by Dautel and Gore has been so successful that they're selling it to other landscapers.

- A profit-sharing plan, based on both long- and short-term margins, is determined from end-of-month and end-of-

High-profile complexes like The Park at Wells Branch provide Clean Cut the opportunity to provide 'work that exceeds the customer's expectations.'

year figures.

- People—both employees and customers—are a prime consideration. "Building value-centered relationships with customers makes for long-term contracts," Dautel notes, "and building good attitudes and relationships with team members makes for smoother, more efficient work results."

- The equipment fleet has been refined over the past two years. For instance, Clean Cut has used mid-sized riding mowers for the past three years, even on complex landscaped areas.

- Minimize equipment downtime by having a maintenance shop and doing most of their own maintenance.

Equipment plus people—"We used mid-sized walk-behind mowers to start with," Dautel observes. "Then, we tried one of the zero-turn-radius riding mowers on the market. Finally, we wound up using Walker mowers. Now, each landscape maintenance team has at least one Walker and some have two.

"Initially, going to riding mowers drastically improved our mowing time efficiency, but we weren't getting the quality we needed to leave a manicured look on customers' lawns. Now, though, we can get that quality look with the same amount of mowing time."

Another key is in the maintenance shop. "Our Walker mowers are probably in use a higher percentage of time than any other piece of equipment," Dautel states. "They just don't sit idle much of the time, and that's one of the keys to keeping equipment operations efficient."

In the last three years, Clean Cut has won nine Texas landscaping awards, five ALCA awards and two from the Professional Grounds Management Society. This year, it was named to *Inc.*

magazine's list of the 500 fastest-growing privately-held companies in the U.S.

From a first-year sales volume of \$167,000, Clean Cut now projects 1993 gross sales of more than \$5 million.

"You have to have the best machinery, then train your

people to get the most out of it, to do the type of precision work we like to see," Dautel says. "It all goes into the objective of giving the customers more than they expect. That's why we've been able to maintain our growth curve for more than eight years."

W. Va. grand jury charges LCO with arranging murder

Richard B. Huff allegedly tried to build a lawn care company the wrong way—with dirty tricks, insurance fraud, arson and, finally, murder.

That's why he may spend the rest of his life in prison.

Huff, 32, former manager of Custom Lawn Care of West Virginia Inc., has been charged with arranging the May 21, 1993, murder of a former co-worker, Jerry Powell, 28.

U.S. Attorney William A. Kolibash of Wheeling, W. Va., says Huff plotted Powell's murder. He did it to keep Powell from testifying about how Huff had sabotaged competitors' businesses over a period of several years, Kolibash says. Powell had briefly worked with Huff but, apparently, had nothing to do with the dirty tricks himself.

Powell was shot-gunned to death about 4:30 a.m. May 21 on an empty road north of Weirton, W. Va., while he was driving his van to work at the Ross Park Mall.

The federal grand jury that met to consider the killing returned a 20-count indictment also claiming that Huff:

- ordered "grass killer" sprayed on the greens of Pleasant Valley Country Club, Weirton, and the Woodlawn Golf Course, New Cumberland. Both were customers of another lawn care company.

- had two of his employ-

ees pour grass killer into the spray tanks of competitors' trucks.

- ordered employees to throw bombs at the home, business and equipment trailer of a competing lawn service.

- slashed tires and scratched the paint of competitors' trucks.

- obtained more than \$40,000 in settlements from fraudulent insurance claims.

Kolibash calls the case "one of the most bizarre and unusual cases I've ever seen in 20 years in this office."

Indicted along with Huff, were Daniel J. Wentz, 20, and William D. Bish, 24.

The indictment alleges that Wentz actually pulled the trigger of the 20-gauge shotgun (two blasts), but that Huff had sought the killing, and had written the check for the ammunition the day before the murder. Bish, the indictment says, accepted a check of \$1,500 from Huff as an advance payment for the killing of Powell. It was Bish who enlisted Wentz to kill Powell, the indictment alleges.

"It's like something out of a grade B movie," says veteran reporter Lawrence Walsh, who is covering the case for the *Pittsburgh Post-Gazette*.

Jury selection for the trials of Huff and Wentz is set for Nov. 8.

—Ron Hall

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Circle No. 102 on Reader Inquiry Card

Busy Bill Clutter pleased with growth in both OLCA, TurfGard

Successful OLCA swap meet is combined with tour of Scotts facilities.

■ "Some of us sold a lot. Some of us didn't sell much. It just depends on what you're selling," says Bill Clutter, TurfGard Company, Dayton, Ohio.

Clutter, president of the Ohio Lawn Care Association, sold five used, walk-behind spreaders, three coils of used and new hose, and bartered an aerator for a small trailerload of granular fertilizer at OLCA's first-ever summer swap this past August.

In all, 15 lawn/landscape companies brought surplus tools and equipment to The Scotts Company picnic grounds in

Marysville, Ohio. Clutter says between 85-100 lawn and landscape pros attended the swap meet. About 50 lawn pros toured the Scotts' compost and fertilizer manufacturing facilities earlier that day. (Lunch was on Scotts too.)

"For a first-time affair, I'm very pleased with the turnout," says Clutter, president of TurfGard, Dayton, Ohio.

Clutter, a powerfully built, methodical man with a ready grin, has reason to be pleased. The OLCA has grown to more than 350 members in just three years.

Clutter says many factors contribute to OLCA's popularity but three stand out:

- Volunteers like past president Phil Forgarty and other committee members. "I certainly can't take credit for what so many have contributed to," he says.



TurfGard's Bill Clutter credits OLCA growth to strong committees, valuable member services, affordable dues.

- Affordable dues. "Thanks to some of the industry suppliers, we've put together a welcome packet whose value exceeds the cost of membership," Clutter points out.

- Responding to what members want. "A lot of our members have cross-over businesses. One of our goals is to offer services to our members that sometimes extend beyond basic lawn care," he explains.

Clutter credits TurfGard employees,



Some tools require a lot of time and manpower . . .



Left to right: Troy Boucher, Scott Hurler, Steve Bailey and Jay D'Amico give this Ryan overseeder a thorough workout.

headed by operations manager Mike Young, for allowing him time to be OLCA's leader.

It's a busy company, and it's having a "good year," says Clutter. This past season TurfGard began offering tree & shrub service. He says next spring it will open a "mechanical services" division offering aerations, seeding, and commercial mowing.

TurfGard, Dayton, Ohio, is a consolidation of five companies, the company Clutter started in the mid 1970s and four other smaller companies he's purchased and incorporated since.

Dayton, (pop. 190,000) in southwest Ohio, is an intense lawn care market. Clutter says he can name a dozen major competitors. "There are so many small competitors and their names change so often I just can't keep up," he says. It was this intense competition from cost-cutting competitors that prompted Clutter to start his own separate low-cost lawn care company several years ago, an operation separate from his "high-end" TurfGard.



Les Richendollar, left, and Troy Thomas of Plantscape, Urbana, Ohio dicker with Tom Burton, right, Burton's Landscape, Troy, over this used spray rig.

He's been backing away from that move though. He discovered that even though some customers will only pay minimum prices for lawn care, they still expect maximum service. "It's just not the way to go," says Clutter.

Clutter feels TurfGard "is probably exactly where it should be." By next spring, with the startup of the mechanical services division, he expects to employ about 25.

—Ron Hall

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HOT TOPICS

Flood causes 'worst year,' but Missourian still smiling

Russell Schmidt says customers are anxious to restore lawns/landscapes following this year's historic Mississippi River deluge.

FESTUS, Mo.— His smoky blue eyes narrow into slits as he surveys the Mississippi River. It's not where it's supposed be. It's at his feet where a football field used to be. It should be out beyond the tree line at least a half mile away.

Russell Schmidt, who started Schmidt Landscape, Jefferson County, Mo., 7 years ago, says "it's been our worst year yet."

But he's still smiling.

He's confident his 12-person company will survive the flood that caused so much destruction in the small river communities just south of St. Louis, his market area. (Schmidt's offices and home are in neighboring but higher Hillsboro.)

Compared to many others, he says he has little to complain about.

"I came down here two weeks ago and saw a couple pull up a nice stringer of catfish, right up from the stands. Caught 'em on the football field," he grins.

Schmidt, 28, stands over the sullen river that looks more like a slowly flowing lake. Humidity seeps from its coffee-colored surface and coaxes sparkles of perspiration from his forearms and forehead.

Hatless in the noonday sun, he relates how he and his Hillsboro High School mates battled the Crystal City Hornets on this very football field just 11 years ago.

Slow retreat—Now, in mid-August 1993, the muddy water still laps up to the third row of concrete steps at the stadium.

It's been an unforgettable year in more ways than one, says Schmidt.

Spring rains which seemingly never



Landscaper Russ Schmidt shows what turfgrass surrounding a bank looks like after the Mississippi River flood.

ended crippled maintenance schedules almost from season's start.

"We were contracted to mow properties four times a month, but we could only cut some of them once or twice. That's revenue we can never get back," he says.

Then, in July, the floods came.

The Mississippi, day by day, crept up to—and, in many cases, over—homes and businesses. River dwellers had more to worry about than lawns and landscapes, like saving the pews at the First Baptist Church. They put them on styrofoam blocks, hoping they would float. They did.

Indeed, when President Bill Clinton and Vice President Al Gore arrived in July and reporters from around the world jostled for high ground for their mobile broadcast units, townsfolk piled sandbags shoulder high to keep the river out of downtown businesses.

Road work—No wonder that instead of installing or repairing irrigation systems this past July—jobs normally scheduled when summer drought turns lawns brown—Schmidt's crew, using the two company loaders, built an emergency road for homeowners cut off by high water.

"Everybody was involved in this flood. A lot of people shut down their businesses to help. Sometimes when they were sandbagging the water was coming in faster

Lessons learned from The Flood

1) Build a history of dependable, reliable service. When disaster strikes, clients will know you're trying. "I had guys sitting in trucks beside properties waiting for the rain to stop to get on properties," says Schmidt.

2) Develop a loyal, well-trained staff. As flooding worsened, Schmidt says his employees often relied upon their own initiative to solve problems. "We have meetings every Monday at 6:45 a.m., but my guys know what to do on their own."

3) Communicate with clients. His company left "obnoxious-looking" red door hangers ("That way I know they'll look at them") on every property.

Schmidt spent extra time in the office so he could personally answer clients' calls.

4) Two-way radios pay for themselves over and over again, particularly in an emergency.

5) Don't gamble with low bids. If anything unusual happens, you're working for nothing—or losing money. Schmidt says he now adds a little extra for labor on bids.

6) Keep smiling. "You wouldn't believe how many of my customers tell me how much they appreciate my men's cheerfulness even though there's not too much to smile about," says Schmidt.

—R.H.



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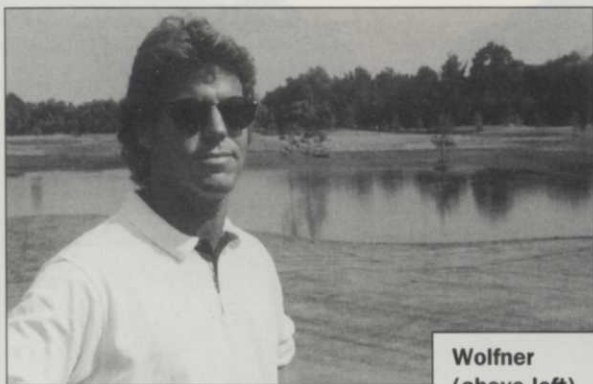
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than they could work," says Schmidt.

Schmidt says recovery is under way. The number of calls from homeowners wanting flood-damaged lawns and landscapes repaired and renovated surprises even him. The commercial properties—well, that he kind of expected.

"We're going to take our chances and start replacing plant material. If we lose some of it, we lose it," says Schmidt. "We can't afford to wait. Not this year."

—Ron Hall



Wolfner (above left) is taking the opportunity to upgrade the irrigation system at Riverside Golf Course.



The Meramec created a moonscape at Fenton City Park.

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Course being rebuilt on faith

FENTON, Mo.— It's August 17, and behind the desk of J. Walter Wolfner Jr., sits a single Petri dish containing a pinch of turfgrass seed. Planted two days ago, the tiny crop of bentgrass is little more than a hint of green.

This is faith.

"My supplier tells me it germinates in two days and I might be able to have a putting surface in 30 days," says Wolfner. "But I know it's going to be tough growing bentgrass here in August."

Wolfner, 39, is owner/operator of Riverside Golf Course here. The Meramec River, usually little more than a creek in mid-summer, destroyed his 18-hole course and his increasingly popular par-3 course.

Of his 120 acres, only the clubhouse escaped damage.

"The course was just beautiful this season, too," says Wolfner. "We were so happy with it. And we just had to sit and watch the water come up, slow, real slow. It just kept coming."

Wolfner is using a low-interest Small Business Administration (SBA) loan to rebuild and improve Riverside.

"We're putting in automatic irrigation, installing zoysiagrass aprons around all the greens, reseeding all the greens with bentgrass, and sodding all the tees with bermudagrass," he says. The greens take the most work. "First we have to hose all the scum off, then aerify them in a couple of different directions, and then overseed."

Wolfner hopes to re-open Riverside this fall, but the flood's legacy will be apparent for years to come.

JOB TALK

Need fast green-up? Try sprayable iron

■ Terry Seebach, owner of Superior Service Lawn Care in North Canton, Ohio, prefers to leave something besides an invoice on the door to let his customers know their lawns have been serviced. But you can't always leave the dandelions curling or the lawn freshly edged.

"Greening up the grass a couple of times each season with a liquid iron application that is visible within a day or two is a welcome calling card," says Seebach.

All new clients receive a special liquid iron application, sometimes even prior to their first scheduled regular treatment. Seebach has been able to trace a number of new account referrals to the enthusiastic reactions of customers who were excited to see an immediate difference in their lawns. The extra green can also be an appreciated gesture, he says, where complaints or callbacks may be involved.

In the early '80s, while in charge of chemical applications for another lawn care company, Seebach heard the voices of a succession of iron salesmen. Each promised that his sprayable iron was better or more economical than whatever Seebach was using.

"Several got me to give their products a try, but results were so inconsistent that I almost began to wonder if applying iron was worth my time," Seebach says now.

Finally, "we compared (PBI/Gordon's) Ferromec with another leading product," he notes. The color response was very striking one day after application at the mid-range rate (5 oz./1000



Terry Seebach, owner of Superior Service Lawn Care in North Canton, Ohio, is pleased with the color response of the turf on which his favorite iron product was applied.

sq.ft.). "Immediately, I could see how to make iron a paying proposition," Seebach says. "Getting that kind of green-up without using excessive nitrogen offered many opportunities to enhance the business."

A school application—In the small, tidy community of Temple City at the foot of Southern California's San Gabriel mountains, the high school graduation ceremony at the varsity football field is one of the major civic events of the year.

While landscape manager Doug Bezaire was dressing up turf for the event, he installed sod to cover some worn spots, the largest of which unfortunately happened to be right in front of the platform where the ceremony was to be staged. High temperatures and a sprinkler failure caused the sod to further lose its color.

Three days before the ceremony, Bezaire had decided to use a turf paint to cover up the problem.

"But when my dealer suggested that I try a liquid iron fertilizer, I thought he was kidding," Bezaire recalls. "He seemed confident that it would work in time, so I gave it a try."

Bezaire goes on to report that, within 12 hours of applying the liquid iron at 6 oz./1000 sq.ft., the ailing grass was as green as the surrounding turf. "I wouldn't have believed it if I hadn't seen it myself."

For rapid greening—These anecdotes illustrate the importance that turf care professionals attach to rapid greening. Field experience and sales results indicate a preference among professionals for the faster response as well as the lower cost per gallon of sprayable ferrous sulfate formulations, reports PBI/Gordon marketing specialist Steve Carrell.



Lawn Ranger, expecting a quick turf green-up, applies liquid iron to the headquarters landscape at Kiwanis International in Indianapolis, Ind.

GREEN INDUSTRY SHOWCASE

Fungicide controls fairy ring, brown patch

Nor-Am Chemical Co. has announced the registration of Prostar fungicide for use on all fine turf.

Evaluations of Prostar at 17 major universities and field testing by more than 650 golf course superintendents have shown excellent performance, according to the company.

A benzamide—with the chemical name flutolanil—Prostar represents a new chemistry for use in resistance management programs. It can be tank-mixed with

several other fungicides, including Banol.

Prostar offers "exceptional residual control" of major disease, such as brown patch, yellow patch, gray snow mold and southern blight.

Nor-Am reports Prostar also suppresses fairy ring.

This fungicide can be used either for preventive or curative control and has shown excellent safety on all species of fine turf, says Nor-Am.

Circle No 191 on Reader Inquiry Card

Herbicide tackles *Poa annua*, all major weeds

Prism, a new herbicide from Valent USA Corp., controls major weeds found in ornamentals.

Prism provides excellent control of annual bluegrass, crabgrass and foxtail grasses in ornamentals. It can be used to control grasses in Christmas tree farms, bedding plants, landscapes, nurseries, greenhouses, cemeteries and parks.

With Prism, growers can use one grass herbicide for all their major weeds. According to Dewane Bishop, Valent's field development manager, Prism is easier to

use because growers can use it at basically one rate.

Prism will control hard-to kill species such as annual bluegrass and bromes, says David Whitehead, Valent's business manager of professional products.

Valent reports that Prism works best when mixed with a non-ionic surfactant.

Prism has not been reported to have any phytotoxicity. It will be available in the first quarter of 1994, and will be sold in quart and gallon sizes.

Circle No. 192 on Reader Inquiry Card

New creeping bentgrass limited, but in demand

Lofts Seed Co. has released limited supplies of the new creeping bentgrass known in research trials as SYN 3-88.

Commercially, the bentgrass has been named Crenshaw, after golf legend Ben Crenshaw, who visited with Drs. Milt Engelke of Texas A&M and Virginia Lehman of Lofts, developers of the variety.

A very limited supply will be available

through Lofts' distributors in the South.

Crenshaw bentgrass is now being placed into commercial production so that larger quantities, to meet high current demand, will become available with the new crop next September.

Golfer Crenshaw is reportedly using the cultivar on several of his golf course construction projects.

Circle No. 193 on Reader Inquiry Card

Greens roller attaches to mower, weighted like a reel

The True-Surface vibratory greens rolling system from Turflite, Inc. attaches to greens mowers, and approximates the weight of a standard triplex greens-mower reel.



Hydraulic motors provide a source of vibration to create the needed weight to roll a green or tee. According to the company, the reduced weight of this device cuts rolling time in half.

Circle No. 194 on Reader Inquiry Card

Pending herbicide to control purple, yellow nutsedge

A new herbicide being tested by Monsanto Co. is the first selective herbicide for controlling both purple and yellow nutsedge across all important turfgrass species in North America.

Manage herbicide this year received an experimental use permit from the U.S. Environmental Protection Agency. Manage has shown "unsurpassed" nutsedge control and is safe to warm- and cool-season turfgrasses, say Jeff Travers and Dr. Nelroy Jackson, authors of an efficacy report on the product.

Travers says 119 tests were made on nine species of turf from 1987 to 1992. The product caused no turf injury in 98 of the tests. Injury was minor and commercially acceptable in 18 of the 21 experiments reporting injury. Recovery was reported as good.

Control begins within three to four days after application, say experts.

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PRODUCT REVIEW

New packaging for fire ant control product a winner

Fire ant control in the Southeast has been simplified with Ciba-Geigy's Award insect control product, and at least a small part of the success is being given to the packaging of Award.

According to Walter T. Meisner, Ciba-Geigy's Packaging Engineer, the key to the new design was knowing how customers used the product. His packaging goals were easy and comfortable handling, efficient dispensing and reseal-ability.

Combining a one-gallon jug with a vertical handle and Magenta Corporation's threaded, one-piece Pop-Lok dispensing closure has also led to increased sales, according to Magenta.

The Pop-Lok lid flips open to expose a five-holed spout for even spreading onto a fire ant mound.

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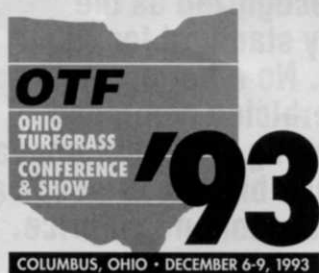
PVC fence looks great, comes in variety of styles

UltraGuard, of West Salem, Ohio has a line of classic post and rail, white vinyl fencing that features a heavy-duty, two-by-six inch paddock rail and a 1 1/2-by-5 1/2-inch rail in 16 ft. lengths.

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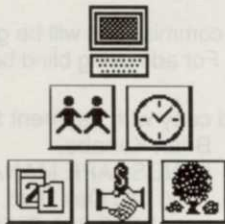
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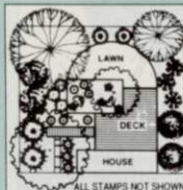
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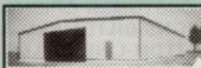
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ADVERTISER INDEX

101	American Cyanamid.....	23
102	Andersons	45
103	Brouwer.....	42
104	Ciba (Demo)(Primo)	35
	Dow Elanco (Demo).....	38-39
105	General Motors Corp ..	20-21
106	Grasshopper	41
107	Harmony Prod	Bio31
108	Hiniker	43
109	ISK Biotech (Leaf Spot)	5
122	ISK Biotech (Snow Mold) ..	5
110	John Deere (Demo).....	24-25
	John Deere (Golf).....	18a-18j
123	Lesco.....	55
112	Lofts.....	Cv4
113	Melroe	Cv3
114	Monsanto	46-47
115	Sandoz (LCO).....	16-17
124	Sandoz (Golf)	16-17
116	Shindaiwa.....	49
117	Tee 2 Green	Cv2
118	Textron (Jacobsen).....	37
119	Toro (Comm)	13
120	United Horticulture	15
144	Walker Mfg	50

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Landscape Architect I. Prepare production layout plans, design programming, computer layout drawings and contour maps using AUTOCAD, presentation renderings. 40 hrs/week. \$17,000/year. Requirements: Bachelor's Degree in Architecture, 6 months experience as Landscape Architect Intern. The job order number for this opportunity is KS 5400637. Please apply at, or send resume to, Manhattan Dept. of Human Resource Office, 621 Humboldt, P.O. Box 940, Manhattan, KS 66502-0009, tele. no. (913)776-8884. Must have proof of legal authority to work in the United States. 10/93

HELP WANTED

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Landscape Management and Construction/Sales: New Jersey's largest Corporate Services Company seeks highly motivated individual to assist in the continued growth of its Landscape Management Company. Areas of responsibilities include: prospecting, estimating, and sales. Must have strong background in Professional Landscape Management Field together with proven sales experience. Please send complete resume and work history in confidence to: **Control Environmental Services**, 737 New Durham Road, Edison, NJ, 08817. Attention Mr. Stewart. 10/93

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