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AS WE SEE IT

JERRY ROCHE, EDITOR-IN-CHIEF



The key to maintaining a positive public image

June is a month when golf superinten-
dents and landscape managers should
strive to be visible—if for no other reason
than to earn some well-deserved pats on
the back from golfers or customers.

It's a month when the grass is at its
greenest and ornamental color is at its
brightest. It's a month—unlike the hustle
and bustle of April and May—when you
can settle down a bit and appreciate being
at the "top of your game."

It's the month before the raging heat of
summer ignites frazzled tempers among
customers and employees, and it's the
month before the grass fries and the orna-
mentals wilt.

As you enjoy the accolades, though,
don't forget that they don't last all year.
And take note of the common thread run-
ning through this issue of LANDSCAPE MAN-
AGEMENT: how you, as a professional in this
"green" business, can improve your image
among golfers, clients and the public at
large.

One notion, prompted by Greg Petry, is
that you should belong to a professional
organization.

But just "belonging" and "playing an
active role" are birds of a different feather.
It's easy to pay your annual membership
dues to organizations like those listed at
the left, just so you can say you're a mem-
ber. It's quite another thing to attend the
annual convention and/or volunteer for
regional committees.

Every year, the attendance at the
GCSAA convention is amazing. There are
about 15,000 golf courses in the U.S., and
attendance at the annual convention
exceeds 15,000—in stark contrast to low
attendance at other national trade conven-
tions, which we find incomprehensible.

For instance, there are more than
40,000 landscapers and lawn care compa-
nies in the nation and goodness knows
how many captive, in-house groundsmen.
Yet the Green Industry Expo attracts bare-

ly 4,000 each year.

If everyone working in the green indus-
try took a hint from their golf course
counterparts, we'd see the development of
a much more professional industry very
quickly.

Here's the key, people: make sure the
organization you work for—whether it's
your own or someone else's—provides
generous educational travel allowances.
Many golf superintendents have a trip to
the annual convention built into their
contract.

As part of your continuing education
and as you strive for ever more profession-
alism in your career, it's only right to
expect your employer to pay for at least
one annual educational trip. And in these
days when intelligent, productive employ-
ees are in high demand, you can justifiably
request such extras.

These days, employee education is a
cost of doing business. In most industries,
generally speaking, it's a "given"—as it
should be in this industry.

So if you haven't got a formal agree-
ment with your employer (either verbal or
written) to attend at least one national
convention every year, you're missing the
boat. And if you are the owner yourself,
you should have a healthy line item in
your budget to send key employees to
important national conventions.

Anything less would be an injustice to
the green industry and—more important-
ly—to your own organization.

Jerry Roche

LANDSCAPE MANAGEMENT

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GOLF & ATHLETIC TURF

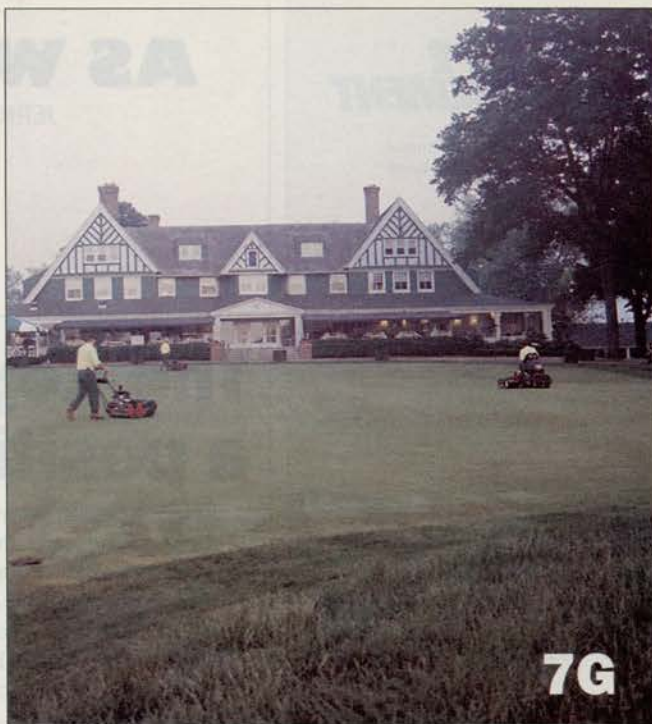
1G Image and education

What the public sees is but a small portion of what they get. It's up to you to provide the education that brings public perception closer to reality.

Greg Petry



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4G Golf courses, good neighbors

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Superintendent Mark Kuhns reveals how his crew keeps historic Oakmont Country Club's greens so fast and true.

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A major greens renovation project can be rewarding—or it can be a nightmare, capable of cutting short an otherwise promising career in the golf industry.

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These water-borne pests are found in ponds and other sources of untreated irrigation water, and they clog up irrigation systems to boot.

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Golfers at a Nebraska public course get beautiful views at every tee, in spite of reduced mowing, water and pesticides.

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Two types of *Poa annua* exist. You should vary your control procedures according to which kind you have.

Nancy D. Williams and Joseph C. Neal, Ph.D.

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Look, look and look some more, says pathologist Richard Buckley of Cornell University. Then begin to ask questions.

Jerry Roche



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A special Task Force's six-year test should wrap up by year's end. Data shows no evidence linking the herbicide with ill health.

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Steam-sterilized horse manure with mineral additives is a great moisture-holding element in the soil.

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The Fertilizer Institute has been inundated with phone calls after it was determined that fertilizer was used as an explosive in the tragedy in Oklahoma City.

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ASK THE EXPERT

DR. BALAKRISHNA RAO



Returning clippings to turf

Problem: The pickup and disposal of turfgrass clippings present a problem with our contract mowing operations. We have thought of leaving the clippings in the lawn. What are your comments, and are there any other options to manage clippings and recycle nitrogen? (Pennsylvania)

Solution: Reports suggest that grass clippings, when left in the turf, tend to reduce turfgrass quality over time, when it is intensely managed. Clippings should be removed when the grass is too long, or they will have a higher potential for further development and spread of disease.

If the turfgrass is growing too rapidly, excessive clippings or heavy deposits of clippings should be removed.

This is particularly important with golf courses because heavy deposits of clippings may interfere with play. However, on lawn turfgrass, clippings may not present a problem unless they remain as large clumps on the surface.

Do not let the turfgrass grow too tall. Mow regularly at the recommended height, depending on the particular turfgrass cultivar. You may have to mow more often within different months of the growing season. For example, in the spring and fall, you may have to mow more often than you do during summer months.

As a rule, mow the turf when the blades grow a half-inch above the recommended cutting height and do not remove more than a third of the growth at a given time.

Avoid mowing the grass when it's wet.

Generally, properly cut clippings do not contribute to thatch development. Instead, they can decompose, release nitrogen and help reduce the total nitrogen needed for the season. Turf grown under a low-intensity fertilizer program can benefit by returning the clippings. Clippings should be removed if the blades are too long to decompose quickly, or have the potential for spreading diseases.

Mulching mowers are another option. Mulching mowers shred the clippings so they can decompose and release nitrogen quickly.

Mulching mowers are more difficult to use when turf is too tall or wet. The nitrogen content of dried clippings normally ranges between three percent and five percent. The source of the nitrogen from clippings would be a slow-release from microbial decomposition of blades. Proper moisture and temperature will enhance this process.

When possible, consider using growth regulators, such as Cutless 50W, Embark 2S or Primo, to reduce turfgrass growth and reduce the total amount of clipping biomass. Growth regulators are used more often on low quality turf such as banks and along roads.

However, these can also be used on residential and commercial turfgrass. For contract mowing, Primo is particularly helpful in recycling clipping volume while maintaining turf color. These plant growth regulators can play an important role in a yard waste clipping disposal problem.

Avoiding degradation

Problem: We recently learned that Oftanol can be broken down by certain bacteria in the soil, and that scientists recommend that you not use the product each year. How often do we switch or rotate these insecticides. Do we rotate every year or once in a while? (Michigan)

Solution: Bacterial degradation of sensitive organophosphate insecticides has been known in the scientific community for a number of years. It is best not to use any one organophosphate insecticide such as Oftanol or Dursban year after year.

Switching products once every year or every two years should reduce bacterial buildup and the insecticide degradation problem. To alternate with sensitive organophosphates, which are subjected to bacterial degradation, consider using products such as Dylox (or Proxol), which are not known to be affected by rapid bacterial degradation. Reports have indicated that carbamates, such as Sevin (carbaryl) may be affected by the same bacteria that degrade Oftanol.

Will oils work against woolly adelgids?

Problem: We have severe problems with hemlock woolly adelgid in our area. How effective is horticultural oil? (Missouri)

Solution: Hemlock woolly adelgid can become a destructive pest if not managed.

The adelgids can cause premature leaf drop and twig dieback, and cottony sacs are found attached to twigs.

A two percent solution of highly refined horticultural oil will help. Treat the hemlocks in late April to early May and again in mid-July. Or try two percent insecticidal soap. Neither has a long residual, so provide additional applications as needed.

Avoid treating when the plants are under drought stress to reduce phytotoxicity.

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.



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Circle No. 112 on Reader Inquiry Card

INDUSTRY IMAGE IS EVERYTHING

by Jerry Roche,
Editor-in-Chief

Sam Grassle couldn't understand what was happening. He hadn't changed anything about his lawn/landscaping business in 10 years, but his customers seemed to be deserting him one by one this spring.

He'd dutifully cared for every lawn on the route, painstakingly applied just the right mix of fertilizers and herbicides, and by the beginning of May he thought they were all looking pretty good. Yet 15 of his best customers had cancelled.

Mel Truturf, in another part of town, was also perplexed. His golf course looked better than ever: green, weed-free, immaculately groomed. Yet he was hearing initial rumblings of disapproval from some club members.

What Sam and Mel didn't realize is that, on an almost subconscious level, the public's confidence in synthetic fertilizers and pesticides could be slowly eroding. Sam's customers, especially, were worried about the effects of the materials on their children, most of whom weren't even born 10 years ago.

In today's America, one of your priorities should be heading off the confusion and despair created among customers by the media and environmental alarmists.

The green industry is facing an identity crisis. The public is confused over the conflicting messages it's getting from professional turf specialists on one hand and the mass media and environmental alarmists on the other. Homeowners and golf enthusiasts are even beginning to question the value of high-end land maintenance.

Radio commentator Paul Harvey hounds the golf course industry. The *Wall Street Journal* runs a headline that reads "Golf Courses Denounced as Health Hazards." *USA Today* exhorts its readers to "Be Wary of Lawn Chemicals."

As Dr. Frank Rossi of the University of Wisconsin told golf course superintendents earlier this year, "The media focuses on the controversial and the sensational...events that may be very isolated. And somehow this is filtered into a fair amount of confusion and despair."

"The impact of information about the environment and golf can be devastating, and it's caused us to rethink many of the things we do in this industry. The environmental literature—particularly the sensationalized media—have forced us to explore the benefits of what we're doing."

The dawn of the 1990s brought a more judicious attitude among professional users of synthetic fertilizers and pesticides—even though those products are, beyond a shadow of doubt, not harmful to humans when properly applied. Neither are they generally harmful to the environment; most biodegrade naturally after a few days or weeks.



Landscape potshots—*Newsweek* magazine was one member of the media that jumped on the bash-turf bandwagon last summer with an article titled "The New Turf Wars: A Plague of Critics Bushwacks the Venerable American Lawn." In the article, reporter Malcolm Jones Jr. told readers: "Biologists, social critics and even gardeners are charging

that are effective at lower rates. Robertson reports excellent customer acceptance of products such as Barricade for crabgrass control, Merit for white grubs and Manage for yellow nutsedge.

"Without a doubt, we're doing more customer education than ever before," says Robertson. "We are telling our customers that we're trying to use the newest, most

course is an (environmental) asset," says Peter Leuzinger of The Ivanhoe (Ill.) Club. "Once you get involved with something like the Audubon program, it's just a matter of showing off. Eventually, your words

will spread. You want to set the tone of, 'We're lucky to have that golf course next to us.'"

Gordon S. White Jr., in the May 3, 1993 issue of *Business Week*, puts the Audubon's program in perspective:

"Instead of solving a temporary problem such as white grubs in the fairways by using.. pesticides, [New York Audubon executive director Ron Dodson suggests the superintendent 'move some roses to another location on the property so that the white grub or Japanese beetle also moves.' People should think of alternatives to dropping that bomb [applying pesticides]."

Golf courses are becoming environmentally friendly in other ways. The Natural, located in Gaylord, Mich., maintains just 17 percent of its total surface area as manicured turf. The rest is undeveloped, untouched natural (not naturalized) land.

Skip Wade of the Cherry Valley Club in Garden City, N.Y., decreased the amount of fungicides he's using from 1000 pounds in 1987 to



Frank Rossi:
Green industry still not reaching the public.



Jack Robertson:
New brands, lower rates.



Peter Leuzinger:
Show off!



Skip Wade: More cultural control.

240 pounds in 1992 by culturally controlling diseases. He's using biological products to control insects, too, and has

continued on page 10



that the billions we annually spend on lawn care and gardening waste water and petroleum, pollute the environment with pesticides and fertilizers, and destroy animal habitat."

To answer some of the critics, more lawn and landscape companies are letting customers define their individual levels of service, whether it's using strictly biorational (natural) controls, or just one application of fertilizer and weed control, or the whole gamut of five to six rounds.

"We apply broadleaf weed control only where there are broadleaf weeds," says Jack Robertson of Robertson Lawn Care, Springfield, Ill. "We're using about 20 percent of the pesticides we'd use if we were doing a broadcast spray."

"We want customers to know that it's okay to have a couple of weeds. If they want 100 percent weed control, we can do that, but it's basically a trade-off."

Another way to answer the public's skepticism is to use newer pesticide brands

advanced products that we can, products that are better for our applicators—who use them every day—and better for the environment."

Basic manufacturers are getting into the act, too. DowElanco (which markets such materials as Dursban, Balan, Team and Gallery) bought a four-page supplement in the July, 1992 issue of *Flower and Garden* magazine. Its title was "The Pesticide Decision," and its purpose was to present scientifically-proven facts to homeowners about DowElanco's products.

Rough on golf—More golf course superintendents are letting roughs and out-of-play areas "go natural" and adding environmentally-friendly features like birdhouses and nesting areas. More than 400 courses have signed into the New York State Audubon Society's Cooperative Sanctuary program, including all 11 TPC courses.

"You've got to reach out to the community and remind them that your golf

decreased his insecticide use from 460 pounds in 1987 to a low of 18 pounds in 1990.

Wade doesn't schedule treatment for some problems like leaf spot disease. "Don't panic," he advises other superintendents. "Learn to live with it. I'm not the greenest course in the world, but the membership is fully supportive."

"We've only got about five more years to make our courses environmentally friendly."

What to do—Education and research are the keys, say experts.

"It's essential that every person become aware of environmental issues and do everything possible to enhance the environment," says USGA Green Section director Jim Snow.

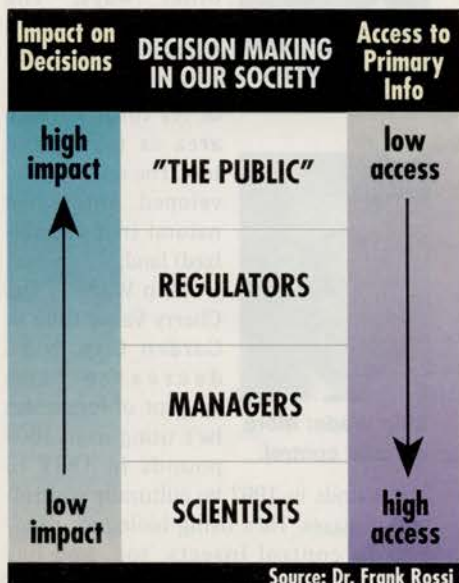
He believes the public has four main concerns—most of which apply not only to golf courses but also to home lawns and landscapes:

- use of some water resources;
- pollution of water;
- loss of natural areas; and
- effects of fertilizers and pesticides on people and wildlife.

"We have a more environmentally-aware industry," observes Snow, who says the USGA Green Section will concentrate even more effort and money on examining the effects of golf courses on wildlife. "We've come a long way, but we haven't reached the top of the hill yet."

Rossi believes that the green industry is not yet reaching the public with the right information.

"Up to recently, we have had very little impact on the decision-making process,"



What you can do:

- 1) Apply 'synthetic' fertilizers and pesticides only when and where needed. If individual customers voice a concern, offer biological alternatives, but let them know in advance that biocontrols take longer, are generally less effective and cost more than synthetics.
 - 2) Give your customers/members more information about what materials you apply, and when you're applying them.
 - 3) Use written materials to tell your customers/members about the benefits of aesthetically pleasing, well maintained lawns and landscapes. Cite corroborating literature from leading turf and ornamental scientists, but make it easy to understand.
 - 4) Design or re-design landscapes, if possible, to incorporate more 'natural' areas that include native, adapted and low-maintenance plant materials.
 - 5) Use, when possible, the new generation of improved products that offer more control with less active ingredient per acre.
 - 6) Participate in local organizations like the Chamber of Commerce, Parent Teachers Association and garden clubs. Let them know that you're an environmentalist, too. Spread the word—if you don't, nobody will.
- (Got any more suggestions? We'd like to hear from you. Call the author at 216-826-2830.)
- J.R.

says Rossi. "We still have a public loaded with *USA Today*, [which has] a very large impact on the decision-making process.

"Environmental issues are not at the top of the list nationally; taxes, crime, welfare and jobs are. This doesn't mean that you can stop worrying. A lot of information needs to be put in a format that the public can understand. Our job is to take the complex and make it so people can understand it."

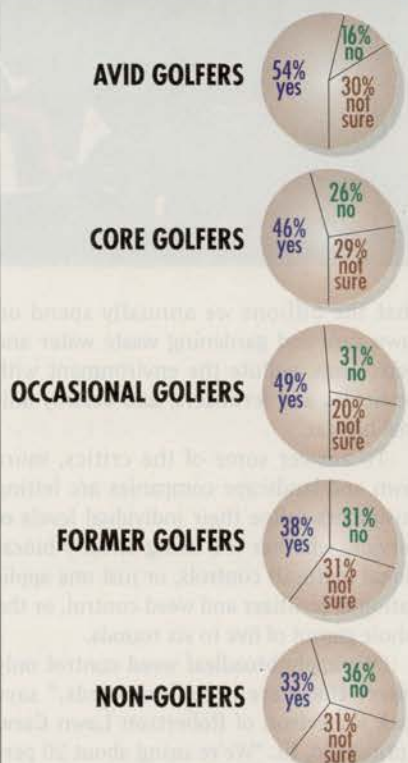
Rossi likes to quote William Reilly of the Environmental Protection Agency: "Huge sums of money are spent on hypothetical risks experienced by a few people while ecological matters affecting millions of people are being overlooked."

The bottom line? Ha!—Michael Fumento, author of the book "Science Under Siege," sees environmentalists (which he calls "Greens") as the real opponent, not the media.

"The Greens blindly trust Mother Nature and blindly contest anything made by man," Fumento contends. "They are trying to blame every evil on the planet to technology, [so] I have proposed the banning of all environmentalists to the North Pole where they can spend the rest of their lives contemplating the ozone hole."

Realistically, that may not be the answer. But it brings a smile to the faces of those of us in the green indus-

"DOES THE MEDIA EXAGGERATE?"



Source: Dr. Frank Rossi

try who are trusted with maintaining the environment on a daily basis—even though this crisis of identity is not at all a laughing matter. **LM**

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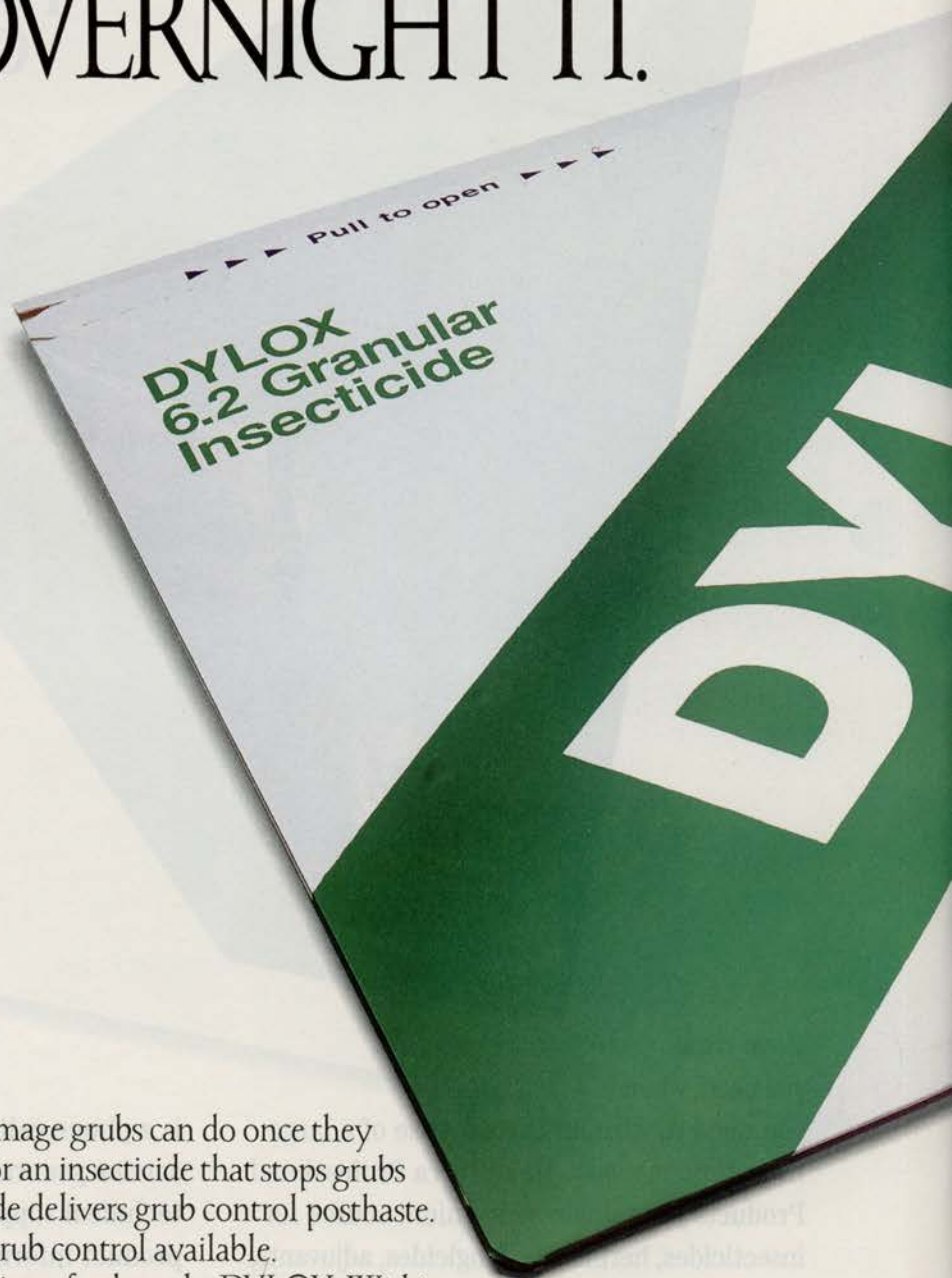


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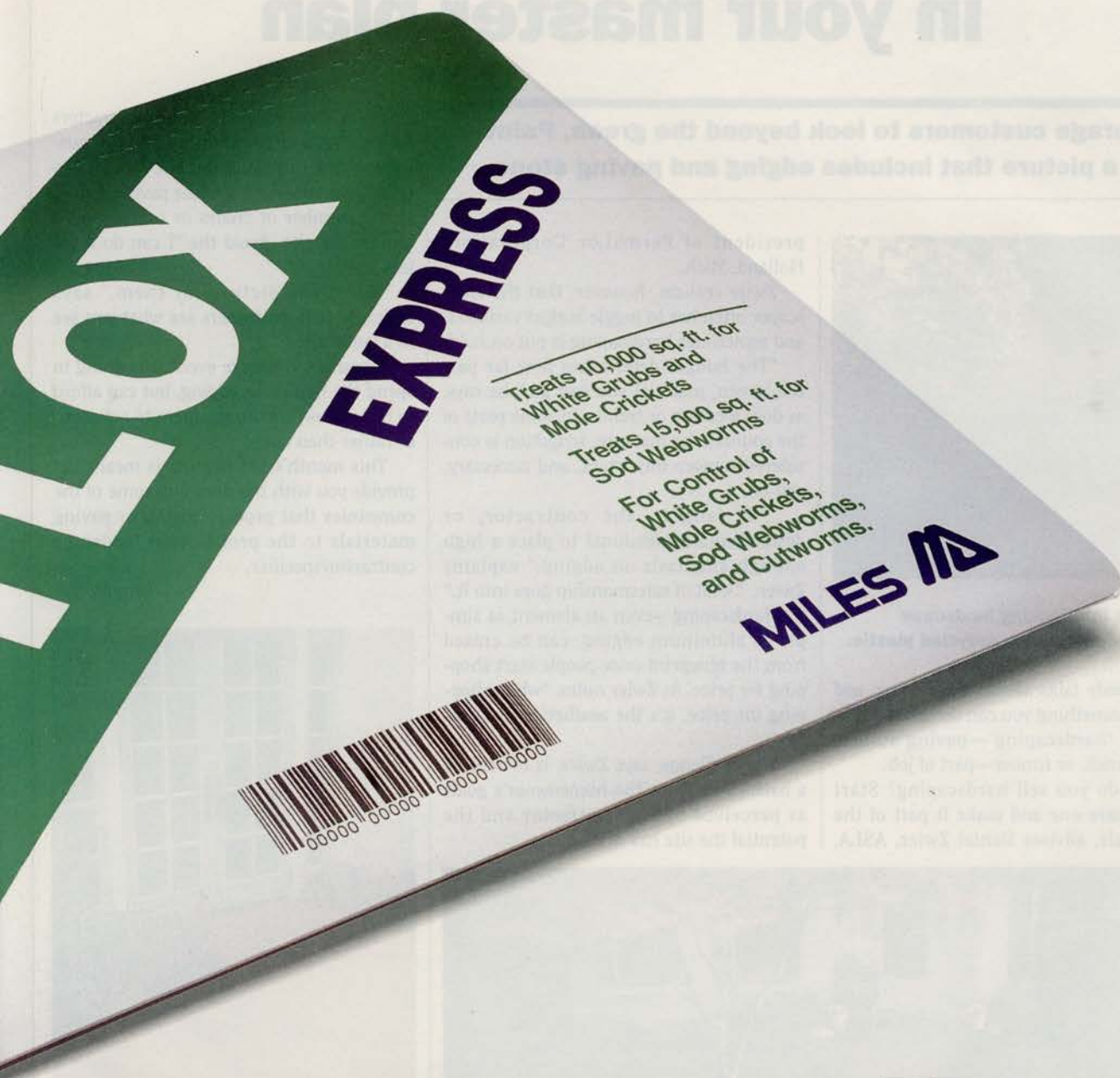
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■ Everybody talks about added value, and there *is* something you can do about it.

Make 'hardscaping'—paving stones, edging, brick, or timber—part of job.

How do you sell hardscaping? Start from square one and make it part of the initial sale, advises Daniel Zwier, ASLA,

president of PermaLoc Corporation, Holland, Mich..

Zwier realizes, however, that the landscaper often has to juggle budget variables, and sometimes hardscaping is put on hold.

"The budget determines how far past the 'green' material you can go," he says, as does location or trends. In some parts of the country, for instance, irrigation is considered a more important, and necessary, add-on.

"It falls to the contractor, or design/build professional to place a high enough emphasis on edging," explains Zwier. "A lot of salesmanship goes into it."

Hardscaping—even an element as simple as aluminum edging, can be erased from the blueprint once people start shopping for price. As Zwier notes, "when shopping for price, it's the aesthetics that suffer."

The challenge, says Zwier, is to achieve a balance between the homeowner's goals as perceived by the contractor and the potential the site has to offer.

Zwier encourages landscape contractors to imagine and communicate to the customer "the full potential the site has to offer," from the edging to the paving stones, to the number of chairs or tables placed around the site. Avoid the "I can do it for less" debate.

"Paint the picture for them," says Zwier, to help customers see what you see in a landscape."

If you know they're eventually going to spend the money on edging, but can afford to buy it now, encourage them to act sooner rather than later.

This month's LM Reports is meant to provide you with the names of some of the companies that provide edging or paving materials to the professional landscape contractor/specifier.

—Terry McIver



PermaLoc edging is the final touch to this residential walkway.



Bomanite Corporation's Patène Arctura paving stone.

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Manufacturer

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Brick retaining system is made of flexible aluminum used to line bricks in straight or curved patterns. Made to prevent the shifting and movement of brick pavers. Patented design lets you form 90-degree angles without cutting. "Either side" installation reduces time required. For walkways, driveways and patios.

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The DeWitt Landscape Timber is a lightweight, interlocking "timber" made of 100 percent recycled plastic. Use as a single-layer landscaping system or in multiple-layered, raised garden beds. When stacked, the timbers interlock and are secured at the corners with pins.

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continued on page 16

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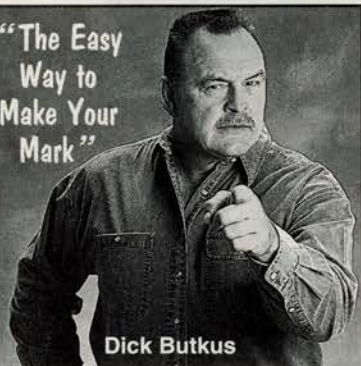
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GOLF & ATHLETIC TURF

BUILDING A POSITIVE IMAGE THROUGH PUBLIC EDUCATION

by Greg Petry
Waukegan (Ill.). Park District

■ Image is formed not so much by what we do, but by the *public perception* of what we do. For sports turf managers, as for many other turf- and landscape-related professions, what the public sees is but a small portion of what they get. It's up to us, as professionals with an important role to fill, to provide the education that brings public perception closer to reality.

Sports turf managers develop and maintain playing surfaces for athletes that range from the youngest amateurs to the most highly-skilled, highly-competitive professionals. In the pursuit of this goal, we wear many hats. We plan, budget, schedule and implement procedures. We deal with financial entities, facility owners, team managers and coaches, players, other facility users, the media and the general public—as well as our own personnel, equipment supplies, physical facilities and facility requirements.

Sports turf management is not just a job. It's a career and a lifestyle.

The first criteria for building a positive image is self-examination. The better your skills and talents match the demands of your position, the more successful your performance will be, and the higher your credibility and "image" within that position among those you work with, your community and the profession as a whole.

Those willing to make that 100 percent commitment will gain the required educational background. Many of today's positions require a degree in a turf-related field—but that's just the starting point in what amounts to a life-long educational

process.

Professional associations, such as the Sports Turf Managers Association and GCSAA, help individuals grow by providing a forum to increase their knowledge and skills. These associations offer a network of information and human resources for the members. The more each member puts into an association, the more they gain in terms of overall understanding of the profession and in greater efficiency and effectiveness in everyday problem solving.

We must always strive to do our best. Awards programs, such as the STMA Fields of the Year, energize those within the profession by demonstrating that sensible management and hard work accomplish success at all levels, from the small community to the pro-level fields.

Safety is the prime concern of the sports turf manager at every level of play. The second priority is providing a highly-playable surface that gives all athletes the opportunity to concentrate on their game.

Sports turf managers consider the preservation and improvement of environmental conditions an integral part of all construction and maintenance practices. We know that each field and facility is a piece of nature. We're sensitive to the ecosystem and how it is impacted by our actions. A healthy ecosystem produces the healthy grass that results in a safe playing surface which protects the health of the athletes.

Sports turf managers realize that field quality and the environmental health of that property affect not only those who actually play on their fields, but the entire

IN THE PUBLIC EYE



community. More often than not, the sports turf managers' responsibilities extend to the entire facility: the parking lot, surrounding landscape, stadium or bleachers, concession and restrooms, fencing and lighting, dugouts or changing rooms, and press boxes, as well as the fields themselves. At the very least, sports turf managers are consulted on how playing conditions affect these other components of the facility. Therefore, the concern for environmental integrity and overall safety extends to athletes, officials, coaches and staffs, workers and volunteers, the spectators and the community at large.

Finally, aesthetics brings the total picture
continued on page 4G

ELSEWHERE

**Golf courses as
good neighbors,
page 4G**

**Secrets to
green speed,
page 7G**

**Green renovations
require planning,
page 10G**

**Zebra mussels
reach golf courses,
page 12G**





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PETRY from page 1G

ture into focus. As the spectators and the athletes enter the facility and view the field, the stage is set for their experience. The spectators'—and the athletes'—perception of a good or bad game are linked with their perception of the quality of the field, and thus connected to their "image" of those who care for the facility.

In today's world, the sports turf manager also must be conscious of how environmental "correctness," safety and playability affect the liability situation. Sports turf managers must set standards for the highest level of quality and establish procedures to ensure that those standards are being met. When deficiencies are found, they must be defined and action documented to show corrections are taking place. It's an ongoing cycle.

It takes foresight to look at your facilities critically and perceive the things that could go wrong. Sports turf managers must watch for trends that might lead to potential problems and take the initiative

to correct conditions before those problems become a real danger.

And finally, the sports turf manager must communicate the essence of all this to the community, through reports and press releases, through contact with the media, booster clubs and community groups, and always through common-sense working relationships with the people.

Sports turf managers must take the time to explain why we do what we do, and why we don't do certain other things. We must be open, honest and straightforward. If we've made a mistake, we must admit it and take actions to correct it. We must analyze why mistakes occurred and prevent them from happening again.

If we establish a good working relationship with the community, and keep engaging in conversation, even when a difference of opinion exists, we're working on developing that positive image. We're building our image when we say we'll do "x, y and z" and then do x, y and Z; when we promptly comply with a community request that is sensible and reasonable.

We're building a positive image when we make sure that every member of our staff understands what they are doing, why they are doing it, and how it affects the overall good of the facility.

We're building a positive image when we explain our current financial and labor limitations, then develop specific plans of action and ask for volunteer contributions of funds, equipment or labor to accomplish those goals.

We're building our image when we work with facility users to develop workable alternatives to fill their needs and keep the fields safe and playable.

Sports turf managers must be willing to exert extra effort to achieve the best possible facilities and clearly communicate their role to the community, in order to create and maintain the highest professional image.

—Greg Petry is executive director of the Waukegan, Ill. Park District and president of the Sports Turf Managers Association.

Golf courses as 'good neighbors'

by Ron Hall,
Senior Editor

■ Here's another hat for golf course superintendents to wear—the hat of the goodwill ambassador to your communities.

More of you need to share the good news about golf to friends and neighbors. No, you don't need to tout the game itself. The growing ranks of beginning golfers suggest that's not the problem. You've got to shine a more pleasing light on the properties on which the game is played. Nobody knows more about them than you.

You realize that the courses you maintain are not green islands within your communities. They can't afford to be perceived as being isolated. Not any more.

There are too many lingering misconceptions by the public that golf courses are not good neighbors. A surprising number of people, including some golfers, see golf courses as water wasters and polluters. (see April '95 LM, page 6G)

Superintendents realize that there's little basis for these concerns. You understand that the impact of a golf course in a community is overwhelmingly positive.



The Tampa Palms course earned an Audubon certification in 1993.

You can tick off a half dozen benefits—more if you think about it—of having a properly maintained golf course in your communities. Some of you, in fact, do an excellent job of alerting your communities

to the positive environmental benefits of your courses.

But a lot of the public apparently never hears this message. When it does, it

continued on page 6G

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NEIGHBOR from page 4G

responds enthusiastically.

At St. Charles—The local artists arrive at the bend in the wooded lane. They spread easels on the mossy ground, then direct their attention to capturing on canvas the colors and textures of nature.

The artists aren't in a wilderness; they're guests of St. Charles Country Club. They're in a corner of 68 acres of woods and meadows surrounding the golf course in St. Charles, Ill., about an hour's drive west from Chicago's skyscrapers.

Peter V. Leuzinger, CGCS, is pleased that artists find beauty near the golf course. "We picked a nice spot for them next to the stream. There's an old bridge, a couple of fallen logs, and some pretty flowers in spring," he says.

He's equally happy when delighted fourth graders make their annual nature field trip to these same woods. Or when a course co-worker brings Scouts to these 2 1/2 miles of trails and paths.

"We appreciate the opportunity to be able to send a good message out into the community," says Leuzinger. "These people are going to talk to their friends, and they'll have good things to say about us."

A brochure that Leuzinger prepared describes some of the natural attractions found along the St. Charles trails which, until the club's crew widened them, had been deer paths. Leuzinger also recommends investing in good signage to identify, using common and scientific names, trees and plants.

"Let the public come out to your property as long as they don't get onto the golf course," urges Leuzinger who was superintendent at St. Charles for 20 years before switching to the nearby Ivanhoe Club this past year.

These and other similar good neighbor efforts are coming none too soon, not just in Chicagoland but nationwide.

Educator Dr. Winand Hock says that National Golf Foundation surveys indicate that 25 percent of U.S. golfers believe that golf course chemicals pollute lakes and streams. The surveys also suggest that just 25 percent of non-golfers believe golf courses are "good" for the environment.

"Clearly we haven't done a good job of communicating the facts that a good chemical management program does not cause environmental problems," says Hock, director of the Pesticide Education Program at Penn State University.

He adds: "We need to get the word out

Letting your communities know

■ Need some ideas to get your community more aware of the value and beauty of your golf course? Consider these:

—**Allowing bird watching** on off seasons or days. Sponsoring an annual Christmas bird count.

—**Partnering with a garden club** in helping you identify unusual or threatened plants at your course.

—**Working with schools** on field trips, or helping with student science projects that deal with environmental matters you're familiar with.

—**Inviting community leaders** to the

course to show them special programs, like wetlands preservation, water conservation, and state-of-the-art pesticide storage, mixing and recycling systems.

—**Joining and/or speaking** a local service organization. Explaining just what you do.

—**Sponsoring an annual photo contest** involving your golf course.

You and your staff should be able to come up with more. When you do, please let us know. Write to us at: *Landscape Management Magazine*, 7500 Old Oak Boulevard, Cleveland, Ohio 44130.



A visit to St. Charles by local students on a field trip was a wonderful promotion for the country club.

ed a simple brochure describing the eight different major plants it contains and their usefulness to area wildlife.

Other wildlife-friendly features of the course include bird nest boxes, manmade brush piles in out-of-play areas, and—in one instance—a large artificial perch into a waterway which has become so popular that it's first-come-first-serve among the turtles, herons and other critters.

about who we are and what we're doing."

At Tampa Palms—Greg A. Plotner, CGCS at Tampa Palms Golf and Country Club course, is another example of how that can be done.

The 8-year-old course he maintains earned certification as an Audubon Wildlife Cooperative Sancturary course in 1993. It was recertified the past two years. Plotner's crew maintains the course to provide wildlife with excellent nesting and feeding habitat while also providing golfers with the best possible playing conditions.

Admittedly, he has a lot to work with. Of the 250-acre parcel of land, only 90 acres is turf, 40 acres is lakes and the remaining 120 acres is forested wetlands areas rife with wildlife.

Also, Tampa Palms has the talents of David Coogan, a trained landscape technician, who has a unusual knowledge and interest in aquatic plants. The aquatic garden that Coogan installed next to the fourth hole is so unique that Plotner creat-

are more far reaching than habitat enhancement. They include integrated pest management and ambitious water protection and conservation efforts, too.

For instance, Tampa Palms maintains buffer zones around all of its lakes and ponds. The buffers—including other naturalized, out-of-play areas—do not receive fertilizer or irrigation.

"We have found ways to keep these water bodies pristine. There's no reason to have low-cut turf on some areas of the golf course," says Plotner.

By installing low-volume water fixtures in the clubhouse, and by freely offering lawn watering information to golfing members, the golf course staff reinforces its concern and helpfulness.

"All too often, golf courses only promote the virtues of golf. This, of course, is important. But it ignores the natural beauty and the environmental qualities of the course," adds Hock at Penn State. "What we need to do is more than just place a

value on the tees, greens, fairways and clubhouse.

"Is your course environmentally friendly? I say, of course it is," says Hock.

"But have you told anybody?"

Greg Plotner, CGCS, Tampa Palms Golf & Country Club says a good first step is the formation of a "resources committee." The committee at Tampa Palms includes several staff members, a Hillsborough



Plotner: keeps turf at a higher cut than most.

County (Fla.) Extension Agent, and a fertilizer expert.

"You're going to bring in some people from the outside who are going to have a lot of expertise and talent," adds Peter V. Leuzinger, CGCS, St. Charles Country Club, near Chicago. "Combine them with the staff and talent that you have and you're going to have one heck of a program."

On-going communication, both within your course and

within community, is equally important.

Plotner suggests seeking opinions and member involvement with bulletin boards in the clubhouse or in the locker rooms. Leuzinger suggests newsletters and press releases.

"Don't be bashful about what you have. Tell your local communities" admonishes Dr. Winand Hock, director of the Pesticide Education Program at Penn State University.

"You the golf course superintendent is a local environmental expert. You know more than most of the people in your community about environmental conservation," he adds.

What price speed?

Superintendent Mark Kuhns reveals how his crew keeps historic Oakmont's greens so fast and true.

by Ron Hall,
Senior Editor

■ Few of us maintain greens as fast as those at the championship course at Oakmont Country Club, Oakmont, Pa. Nor should we.

But not many of us host a U.S. Open either, as Oakmont did in 1994, its seventh Open. Or have an annual budget of about \$1 million. (Actually there are two courses at Oakmont.) Or have *Poa annua* greens. Not *Poa annua* like many of us know it as a pesky annual weed grass, but perennial strains of *Poa annua*.

Okay, okay, enough already, we know—Oakmont does.

Certainly, green speed is not as vital for us as it is on a course that doesn't want to be brought to its knees by the likes of a Jack Nicklaus or a Greg Norman. Nonetheless, it's fascinating to hear how Mark



The Greens at historic Oakmont Country Club are mowed twice, first with a riding mower then with a walking mower.

D. Kuhns, CGCS, makes the Oakmont greens so fast and true. He told fellow superintendents just that at the GCSAA Conference this past winter.

Kuhns says he tries to check each green daily, usually with a stimp meter in one hand and a putter in the other.

"I like to see the ball roll on the green," he says. "I like to see if the ball is bouncing or if it's wavering left or right. Also, it gives me an indication, even without a stimp meter, how fast a green is." And he's not afraid to roll greens to make sure putting conditions are consistent around the course.

Oakmont members like their *Poa annua* greens fast, real fast. Most members, in fact, are willing to sacrifice color

and lushness for a hint of brown if it means more speed.

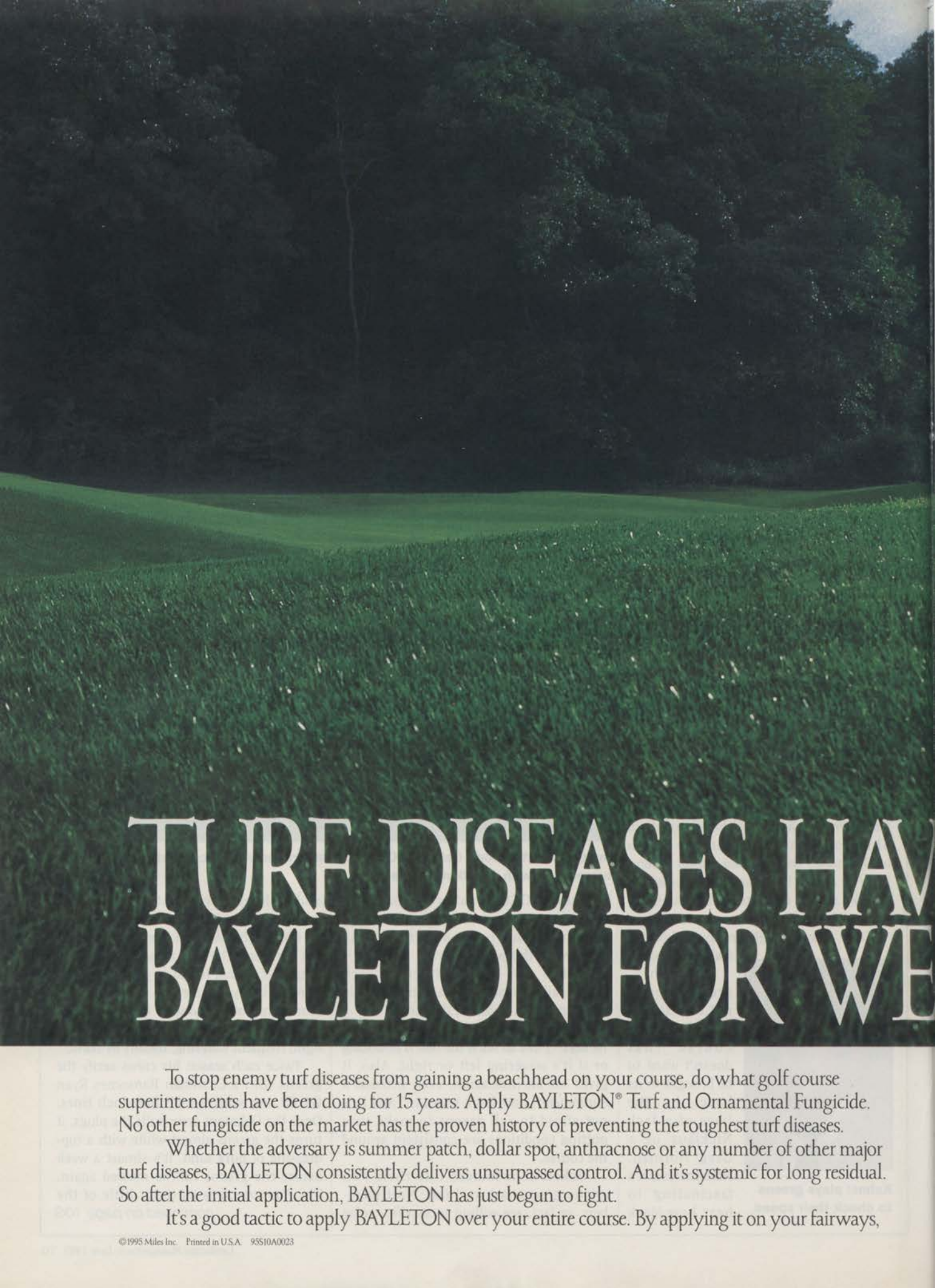
Obligingly, Kuhns keeps the greens on the dry side. "The only reason we have the irrigation system is just to get by between rainfalls in my climate," he says. With only four inches of rootzone to work with anyway, he feels the turfgrass responds best to light, frequent watering, usually by hand.

Twice each season his crews aerify the greens with a Cushman Ransomes Ryan GA 60 unit with $\frac{3}{8}$ -inch four-inch tines. Once the Oakmont crew pulls the plugs, it turns the greens almost white with a top-dressing of pure sand. It's almost a week before the greens can be mowed again. The *Poa annua* is so tight, little of the

continued on page 10G



Kuhns: plays greens to check their speed.




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MILES 



SPEED from page 7G

sand works down. Instead the grass grows through the sand. Oakmont has followed basically the same regimen since the mid-1970s.

"This is the sacrifice our members have to pay for the fast conditions that we try to maintain," explains Kuhns.

Crew members usually mow the greens twice daily, first with a Toro 3100, then with a Toro 1000 walker.

Although Kuhns says Oakmont is committed to using less chemicals, some preventive spraying is needed on the greens "for certain diseases." Other insect and disease controls are sprayed "as needed."

Kuhns estimates Oakmont's greens get 3½ to 4 lbs. of N per year. The greens are fed as they're aerified each spring and fall. This is supplemented by several liquid, foliar applications during the season. As Thanksgiving approaches, Kuhns puts



Galleries arrive early, even as the pins are being set, when Oakmont hosts a U.S. Open. It's been the scene of seven Opens.

down an application of Milorganite.

"If the demands of members are fast, fast, fast, it costs a lot of money and takes

a lot of time," admits Kuhns, who came to Oakmont about four years ago from Laurel Valley.

Renovating golf greens without wrecking careers



Prepare temporary greens well in advance of a renovation, according to James F. Moore and other golf course experts.

USGA Green Section suggests not forcing it down peoples' throats.

by Ron Hall,
Senior Editor

■ A major greens renovation project can be one of the most rewarding times in a superintendent's career. Or it can become a nightmare. How thoughtfully the superintendent prepares and educates the club's leadership often spells the difference between the two outcomes.

James F. Moore of the USGA Green Section offered suggestions about how a superintendent—more precisely his or her career—can survive a major greens renovation. About 300 superintendents listened to Moore, a former superintendent himself, at the GCSAA Conference this past winter.

"The number one reason why projects fail is because people don't take the time to get on the same page before the project starts," says Moore.

He admits that his observations are colored by some of the club membership squabbles and hard feelings that he's witnessed concerning the topic of greens renovations. In fact, the decision of whether to renovate or not can split a club's mem-

bership into unfriendly camps, and put the unwary superintendent in a precarious position.



Moore: Tread softly with members. Let them decide the answers to some of your problems.

Moore's common-sense guide to renovations:

1) Determine the need for a renovation. Seek the assistance or professionals outside of your club. Document the need.

2) Determine the scope of the proposed renovation. Again, document your recommendations.

3) Prepare financially. (Perhaps this should be the first step.) Major renovation is expensive.

4) Assemble a pre-construction team to help uncover any potential stumbling blocks. The team might include an agronomist from the extension service, the contractor, an architect, key people from the club's membership, and a "clerk of the works," somebody whose sole function will be overseeing quality control of the renovation. The clerk could be your capable assistant.

5) Educate the club's leadership and members. Take them (particularly the most skeptical ones) to the greens and dig holes to show them what's going on. Moore suggests starting the education process about two years prior to actual work.

6) Provide the club with the professional documentation that you and your team have assembled. Then, get out of the way. Let them make the decision.

7) Start preparing suitable temporary greens as soon as practical after the club decides that it wants to renovate.

"A lot of clubs get into trouble when they try to force it (renovation) down the members' or the players' throats," says Moore. "If you try to run this thing through, all you're going to do is alienate half the people that pay your rent."

And, stresses Moore, never forget—"If the project goes good, the superintendent will often get credit for it. If the project goes bad, the superintendent will *always* get credit for it."

You could face a renovation sooner than you think

■ Is a greens renovation in your near future? In all likelihood, yes.

Most superintendents will undertake a greens renovation within the next five to 10 years, believes James F. Moore of the USGA Green Section's Mid-Continent Region.

"We've got a lot of old greens that have somehow survived all the changes in the game of golf because we've got better superintendents, we've got better irrigation, we've got better chemicals and we've got better equipment," he says.

"After a while our talent is not going to be enough to bring these old greens through and we're going to have to do something."

But Moore also points out that not all ailing greens necessarily need renovation. Some greens, in fact, can be improved by removing nearby trees and opening the greens to more sunlight and air movement. Aggressive core aerification to break up layers caused by previous mismanagement can bring others back to health. A water injection unit may help too. "You want to look at all the options," says Moore.

Even so, here are forces that are driving courses toward major renovations, says Moore:

—**Increased play.** Clubs that averaged 25,000 rounds a season a generation ago now host 30,000 to 35,000 rounds. Municipal courses can exceed 60,000 or 65,000 rounds. (Moore believes all superintendents should know the number of rounds their courses host each season.)

—**Rising expectations.** "People are more mobile now. It was one thing when all they did was play on your course," says Moore. "Now they go on vacation and play in places that are absolutely breathtaking. Then they come back they want to know why your course isn't breathtaking."

—**Environmental pressures.** "Right now you can go out and spray pretty well anytime you want to," says Moore. "That probably won't continue."

—**Lessening water quality.** The use of treated wastewater on courses continues to increase and is mandatory on many new courses.

—**Improved grass varieties.** "You can't knock Penncross, but you've got to remember it was delivered to us in 1956," says Moore. "It's carried us for a long time. There are at least six or eight new bentgrasses out there that are better than what we've relied on."

—**The possible loss of methyl bromide** as a soil fumigant. Methyl bromide allows the conversion of a green from one grass to another because it kills everything in the rootzone, including seeds of unwanted varieties. Methyl bromide is alleged to be an ozone destroyer. It's being scrutinized by regulators.

Weighed against these reasons to renovate are two powerful reasons discouraging major renovations—cost and down time for the golfers.

Moore estimates a cost of somewhere between \$4 and \$6 per square foot, and an expense of as much as \$500,000 for an entire course. "A lot of clubs don't think they can afford that," he says.

A superintendent can help solve the problem of down time by preparing temporary greens well in advance of renovation, Moore believes. Some clubs even offer special incentives for members and guests when temporaries are in play. Some schedule fun events, and actually pick up new members who can see that these clubs are serious about offering quality golf, as evidenced by the renovation.

"You can understand why some people in your club don't want the greens rebuilt," says Moore. "They're just so happy playing golf, they'd like to be able to play golf any time they want to."

A third but, maybe, less common objection to a needed renovation may be membership's reluctance to change "classic architecture."

Moore admits that this is a tough call, but he maintains that courses built for previous generations of golfers weren't intended to host as many rounds as they do today.

—R.H.

Zebra mussels muscling their way onto golf courses

By James E. Guyette,
Contributing Editor

■ Zebra mussels are muscling their way onto golf courses throughout the United States. These water-borne pests are found in ponds and other sources of untreated irrigation water. They make their presence known to golf course superintendents by clogging irrigation systems and rendering them inoperable. Among the available control methods are chlorination and filtration.

"It's become a real problem over the past three to five years," says Dave Davis of Davis Associates, an irrigation consulting firm headquartered in Rancho Cucamonga, Calif. "You never know where it's going to pop up, but when it does it's a pain in the neck. You've got small devices that you're putting the water through, and these devices are going to clog up."

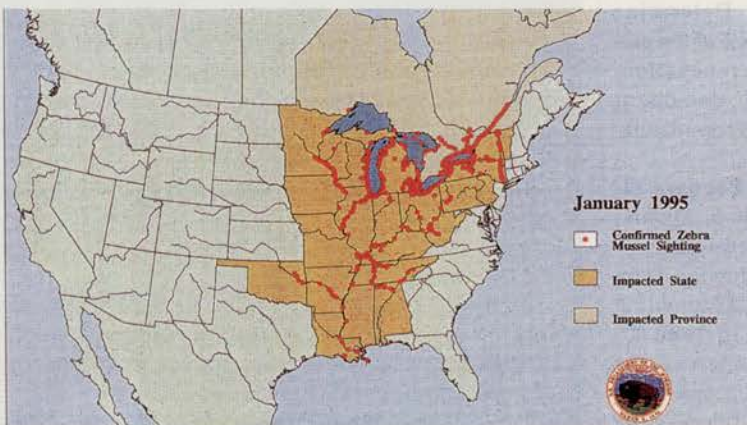
"If the mussels get into the system, it's either pay me now or pay me later," says Steve Springer, vice president at Amiad Filtration Systems, Van Nuys, Calif. "You can have literally miles of pipe clogged because they set up a colony inside there, and they can literally shut off the flow in one growing season."

A 36-inch intake pipe can become so infested that the flow area is reduced to just eight inches. (A golf course irrigation system typically has an intake pipe no larger than 12 inches.)

"That's a major problem, especially for smaller intakes," warns James C. Schmidt, vice president of sales and marketing at Applied Biochemists Inc., Milwaukee, Wis. Once the zebra mussel hits a region, it spreads rapidly to other water supplies. "They can survive hanging onto the side of a boat. These buggers can attach themselves to anything, including water fowl, aquatic plants and even plant fragments."

It is believed that zebra mussels first

came to the U.S. in the late 1980s as they stowed away in bilge water carried by an eastern European freighter. When the water was discharged the zebra mussels infested the Great Lakes and have been moving inland ever since. The massive Midwestern floods of 1993 assisted the



Orange shaded area in map above shows greatest areas of zebra mussel infestation in the United States.

zebra mussel in its migration.

"Every tributary off the Mississippi is contaminated," claims Springer. The beast has been spotted from St. Paul to New Orleans, plus it hits points east to Pittsburgh and points west to Tulsa. (The West also contends with a similar situation spawned by the Asiatic freshwater clam.)

Intakes at water treatment plants for industry and municipalities are especially plagued by the pest, and a golf course that takes its water from an untreated source is likely to have similar problems.

"It can create problems with the sprinklers and valves," Davis explains. "You find it all over the country."

Superintendents in New York have been battling the zebra mussel for a while. "We've got an awful lot of golf courses that



This retrieved golf ball shows the clinging tenacity of zebra mussels.

siphon water from the Erie Canal," points out Chuck O'Neill, coastal resources specialist with the New York Sea Grant. The contaminated canal was especially rocking

the boat at Rochester's prestigious Locust Hill Country Club, where PGA golf tournaments were threatened by a clogged irrigation system. "That got the attention of a lot of golf courses," O'Neill recalls.

Locust Hill was eventually able to control the problem.

"We chlorinate the water coming from the canal," explains superintendent Rick Slattery. "It doesn't take much chlorine to kill them," he notes. "There's a recharge pump that pumps from the canal to the irrigation pond," and a chemical feed metering pump was used to distribute the proper dosage levels. About 50 gallons of chlorine is used per season.

The two most common methods of zebra mussel control are chlorination and filtration. O'Neill notes also that iron can be used to adjust the pH of the water. "It's possible to push the pH too high or two low for the zebra mussels."

The choice between chlorination or filtration depends upon a number of factors, and superintendents or other landscape managers facing irrigation problems should choose a method that is geared toward their operation.

"Every area is a little different in what you have to do," Davis cautions. "A solution that works in Florida may not work in California. We even see it in well water in the Southwest."

Check with your county agent, water treatment companies, chemical suppliers, filtration system manufacturers, irrigation consultants or swimming pool contractors.

Chlorination "is no different than irri-

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gating with city water," says O'Neill, referring to piped-in potable water. "It's not hurting the turf if you keep the chlorine residual down low." (No more than one-fourth part per million.)

"Once the chlorine hits the air it breaks down before it hits the turf," says Slattery. A drip irrigation system may require closer monitoring to protect fragile plant materials.

Because zebra mussels die when deprived of water, baked in the sun or exposed to freezing temperatures, at Locust Hill the pond is drained each winter and all the pipes flushed in the spring. Dead or alive zebra mussels have to be removed from sprinkler heads and other parts by dipping in a bucket of chlorinated water and using fingers to pick them out.

A chemical feed metering pump can be purchased off the shelf, and this type of system can generally be implemented for under \$15,000, according to O'Neill. "It's not something that's going to break the bank."

A chlorine treatment strategy can be washed up if there are any concerns over chemicals coming in contact with sensi-



Zebra mussels die when left in freezing temperatures (left) or high temperatures, or the sun, say biologists. Actual experiences of landscape and golf course irrigation managers in the field attests to it.

tive wildlife or other environmental issues. Landscape managers at parks and some golf courses may find themselves faced with a public relations problem that needs to be addressed.

"It may become necessary to add really fine levels of filtration to the water sources," says Davis. A filtration system can cost from \$15,000 to \$30,000 on top of the initial pump station installation.

"The variables get to be so broad," Springer points out. It depends on what level of control is acceptable. It is relatively inexpensive to control the larger adult

zebra mussels. For complete control of zebra mussels, a 40 micron absolute filter is needed, while a typical golf course irrigation algae screen is in the 200 to 300 micron absolute range.

The best control strategy is to take into account local conditions when battling zebra mussels. "No two sites are exactly the same," Davis warns. Zebra mussels are a formidable opponent "They breed faster than rats," Springer notes. "They're just nasty little critters."

Annual bluegrass biology and control

by Nancy D. Williams
and Joseph C. Neal, Ph.D.,
Cornell University

■ Annual bluegrass (*Poa annua* L.) is one of the most persistent and troublesome weeds of high-maintenance turfgrasses. It is well adapted to close mowing, high nitrogen fertilization, frequent irrigation and compacted soils. It is a primary invader in damaged or open areas.

Consequently, it is sometimes maintained as a monoculture (if you can't beat it, join it) but requires intensive maintenance and frequent fungicide treatments.

Annual bluegrass is generally considered a weed because it is a prolific seed-head producer; susceptible to heat, drought and many diseases; and is unsightly when mixed with other grasses.

Lifecycle—Clearly, the most important difference affecting control decisions is the difference in the lifecycle: annual (*Poa annua* ssp. *annua*) versus perennial (*Poa annua* ssp. *reptans*) subspecies.

The perennial subspecies is more difficult to control because of its ability to survive summer heat and drought (which would kill the annual subspecies) by entering a summer dormancy and resprouting when weather is more conducive to growth.

Another difference is seed dormancy. Seed of the perennial subspecies can germinate at any time of the year while seed of the annual biotype germinates in the late summer or early fall (and sometimes early spring).

Cultural control—Weed management via cultural methods requires careful planning, close observation and patience. The five steps for reducing annual bluegrass competition are:

1) Prevent or reduce compaction.

Excess moisture and traffic induce compaction and shallow rooting, conditions which favor annual bluegrass. Using lightweight mowers, reducing traffic and core cultivation will relieve compaction. Good soil structure will provide better

drainage and water and air penetration, which encourages better root growth and competition in the desired species.

2) Avoid excess irrigation.

Proper irrigation alleviates excess moisture, providing better soil aeration and consequently better root growth. Less irrigation in the spring and fall may reduce annual bluegrass seed germination.

3) Avoid excess N fertilization.

Reduced nitrogen fertilization is the key to reducing annual bluegrass competition. In some situations, iron (Fe) may be used for turf "green-up" instead of higher N rates. Under certain conditions, low phosphorus rates have reduced annual bluegrass growth by reducing its ability to compete with desirable turfgrass species.

4) Mow at proper height.

Annual bluegrass can adapt to a wide variety of conditions, including mowing heights from 1/8 to 3 inches. Higher mowing heights will tend to favor the more

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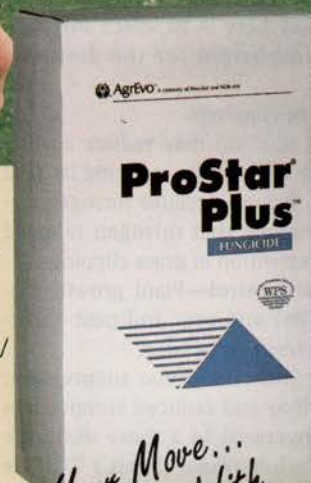
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SOIL CONDITIONS	compacted	uncompacted	uncompacted	uncompacted
CORE AERATION	decreases competition relative to desirable species	increases competition relative to annual bluegrass	increases competition relative to annual bluegrass	increases competition relative to annual bluegrass
N FERTILITY	high ≥4 lbs./1000 sq. ft./yr.	moderate 2-3 lbs./1000 sq. ft./yr.	low to moderate 1-3 lbs./1000 sq. ft./yr.	high ≥ 4 lbs./1000 sq. ft./yr.
MOWING HEIGHT	lower than recommended ht. for desirable species	low ($\frac{5}{32}$ to $\frac{1}{2}$ inch)	high (2 to 3 inches)	moderate to high ($\frac{1}{2}$ to $2\frac{1}{2}$ inches)
CLIPPING REMOVAL (<i>POA</i> SSP.)	decreases competition relative to desirable species	increases competition relative to annual bluegrass	generally, no effect	generally, no effect
pH	6.0—7.0	5.5—6.0	6.0—7.0	6.0—7.0

desirable turfgrasses over annual bluegrass. The key here is to select the optimum mowing height for the desirable grass.

5) Remove clippings.

Clipping removal may reduce annual bluegrass competition by reducing its seed reservoir. It may also reduce nitrogen fertility by removing that nitrogen released by the decomposition of grass clippings.

Chemical control—Plant growth regulators (PGRs) and pre- and post-emergence herbicides can be used.

PGRs provide *Poa annua* suppression, cover reduction and reduced competition to allow conversion to a more desirable turfgrass. Paclobutrazol (Scott's TGR) is the only PGR registered in New York state for annual bluegrass suppression in creeping bentgrass. It may discolor desirable turf when applied incorrectly or at the wrong time of year. Injury can also occur when heavy rain or irrigation have moved the granules to puddles, thus concentrating the herbicide in a small area. Using the lower labeled rate at the spring application will minimize discoloration.

Pre-emergence herbicides work well on

Poa annua ssp. *annua* but have been ineffective on *Poa annua* ssp. *reptans*. For this reason, they are rarely used for annual bluegrass control in the Northeast.

Post-emergence herbicides control seedling annual bluegrass, reduce seedhead production, suppress established plants, or provide total vegetation control.

Prograss (AgrEvo) is labeled for controlling seedling *Poa annua* in perennial ryegrass, Kentucky bluegrass and creeping bentgrass. It also can suppress established annual bluegrass. Best results have been obtained in perennial ryegrass with higher rates. Rates high enough to control established annual bluegrass in one season, however, will injure other turfgrass species. In Kentucky bluegrass or creeping bentgrass, multiple applications of Prograss at 0.75 lb. AI/A or less, applied in the fall and carried out over several years has adequately suppressed annual bluegrass.

Calcium arsenate applied at high rates controls established annual bluegrass, but it is currently only registered in New York and Indiana. Disadvantages to it include: high rates necessary for control, sudden loss of poa, and long-term adverse effects

on soil phosphate fertility.

Mefluidide (Embark) may be used for annual bluegrass seedhead suppression in Kentucky bluegrass, perennial ryegrass or fescue. Some discoloration of desirable turf may occur, less at lower rates.

Where annual bluegrass comprises more than 50 percent of the turf, complete renovation with glyphosate (Roundup) is often the best recourse.

Biological control—*Xanthomonas campestris* pv. *poannua* bacterium is currently being investigated as a potential biocontrol agent for *Poa annua* by Mycogen Corp.

This bacterium only kills plants when the conditions are favorable for disease development. Plant death is caused by a vascular wilt as the bacterium plugs the xylem, stopping the flow of water and nutrients. It is more effective on annual *Poa annua* species than perennial species.

—The authors are members of the Department of Floriculture and Ornamental Horticulture at Cornell University. This article is excerpted from Cornell University Turfgrass Times's Spring 1993 edition.

LAWN & LANDSCAPE INDUSTRY

IMPROVE YOUR COMPANY'S IMAGE!

by Ed & Aaron Wandtke

■ Your company's image depends on the behavior of your front line: the service providers. In this era of environmentally-concerned consumers, companies need to become more conscious of the image portrayed by their employees.

Your employees' image determines how much your company cares about the customer, his or her property, and the world we live in.

A strong company image is critical for your success and continued viability. Take a close look at companies you believe to have a strong image. What is the secret? What should you be doing to improve the image of your company to customers, the community and the industry?

Customer image—People form perceptions about your company's quality, reliability, competence and integrity through the image you display on properties. For most of you, employees and vehicles are the only opportunity to create a company image, based on:

- how employees look;
- how they act on a property;
- how professionally they are viewed in the community; and
- the appearance of vehicles and equipment.

Dirty uniforms (at least at the start of the day), faulty equipment, perennially damaged vehicles all have an impact on your company's image.

With the green industry under close scrutiny by customers and the media, it is imperative that extra care be exercised in

order to present the best possible image at all times.

If a company can't afford a large advertising or promotional program, the professional appearance of personnel and vehicles is a necessity.

I recently observed a landscape maintenance employee operating a backpack blower without ear or eye protection. He then proceeded to blast the air at another employee. If it was a property I was involved with, I would have fired the company on the spot. Safety in working on a property is critical, and there is no place for horseplay on any job. The equipment and materials your employees use must be handled carefully for customer safety, too.

Human safety and environmental consciousness need to be the focus of every employee as they work for every customer. The image you have developed over time can be destroyed by one careless employee who is observed by the wrong customer.

Community image—How is your company perceived in the community? Are giving back a portion of the benefits you get from the community?

Every year, members of the Metropolitan Detroit Landscape Association (MDLA) donate personnel, materials and creative talents to improve a long-term project on the grounds of Cobo Hall in Detroit. More than 86,000 square feet of gardens, waterfalls, ponds and bridges with thousands of trees, shrubs and flowers are maintained and improved through the efforts of MDLA.

IN THE PUBLIC EYE



The image created by this ongoing project benefits the community in which the companies work, and reinforces the value of the services which the companies provide.

Involvement with the Chamber of Commerce, the local small business association and other community-based service clubs is an excellent way to contribute to the community and receive recognition. And contributing to the community should not be limited to the company owners. Employees should be urged to participate in church groups, parent-teacher organizations and other similar groups to demonstrate your company's commitment toward improving and maintaining the community in which you live and work.

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ELSEWHERE

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to educate clients,
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**Computer software
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page 5L**

**Family businesses
ponder future,
page 7L**

**Tax refunds
can be yours,
page 11L**





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IMPROVE from page 1L

Too often, the positive contributions made from green industry people are not reported because the actions are not controversial or sensational. So you should work to get your efforts recognized publicly.

Industry image—Each company in an industry contributes to the industry's general image. As new companies continue to proliferate, it is imperative that local

groups organize to protect that image.

Because most states do not have barriers to entry into the green industry, existing owners and employees need to police, maintain and improve the industry's image. Being an activist doesn't mean being a thorn in people's side, but it can make a difference: possible unwarranted regulations may be thwarted, and adversarial visits from federal and state regulators may be avoided.

The image your company has developed

or is developing takes time to mature. Staying active in the community while maintaining a professional, quality service will not only help your image but it will also improve the image of the industry. Take the little extra time to make sure your company is working on it.

—The authors are owners of Wandtke & Associates, a green industry business consulting firm located in Columbus, Ohio. To contact them, phone (614) 891-3111.

Using your advertising to educate customers

by Judy Good

■ "Diplomacy" is telling someone where to go in a way that they actually look forward to getting there. And using education in advertising is like diplomacy: it's putting your ad in front of someone so that they actually look forward to seeing it there.

I would like to encourage each of you to educate the public about our industry through the advertising or publicity you use to promote your company.

A few years ago, I suggested that J.B. Good develop a direct mail technique of marketing our tree services by mailing educational flyers to our local customers four times a year. We looked at the costs and thought it would be expensive. We didn't know if we could afford it, but we went ahead anyway.

We bought the postal permit, we paid our yearly fee, and we developed our first educational piece (which was pretty crude compared with the things we're using today). Here's what we used *then*: low-cost paper, one color, my crude graphics, printed 100 at a time. Here's what we use *today*: glossy paper stock, four-color photos, professional graphics, printed 100,000 at a time.

Why? Because educational advertising works. It not only tells people you want their business, but it tells them what to ask for. The phone rings and they'll either ask for some outdated practice or they'll ask for what you've taught them to ask for.

Nobody else is going to educate your market for you. Especially if you plan to stay on the leading edge of the industry. New information is coming out all the time and your customers are always going to be two or three steps behind you.



An example—A few years ago, we were contacted by the local government to bid the pruning of a set of trees. The specs said that all pruning cuts must be painted with an approved tree wound paint, even though current arboricultural practices do not include painting tree wounds. Yet the government wouldn't omit this portion of the specs because they were afraid of getting too many complaints.

The leading edge of the industry is the hardest to educate people about. You must lead by example, and educate those who question what you are doing. This does two things:

- 1) When people learn what you are saying is correct, they respect you.
- 2) It's a great way to "soft-sell" your services.

One of the things to remember about educational advertising is that it's more important to educate than it is to be fancy about it. As your company grows, and as you see the benefit of shunting dollars out of big display ads and into education, then your publications can get fancier.

Positive reinforcement—People tell

us that they've created files containing our advertisements. They may want to refer to some of our information.

We walk into houses and, lo and behold, they have one of our educational postcards magnetized to their refrigerator.

We walk into the local city parks shop and they have one of our postcards posted on their bulletin board.

We drive up to our bank teller and there on the window is one of our arboriculture calendars.

It takes the average person seven



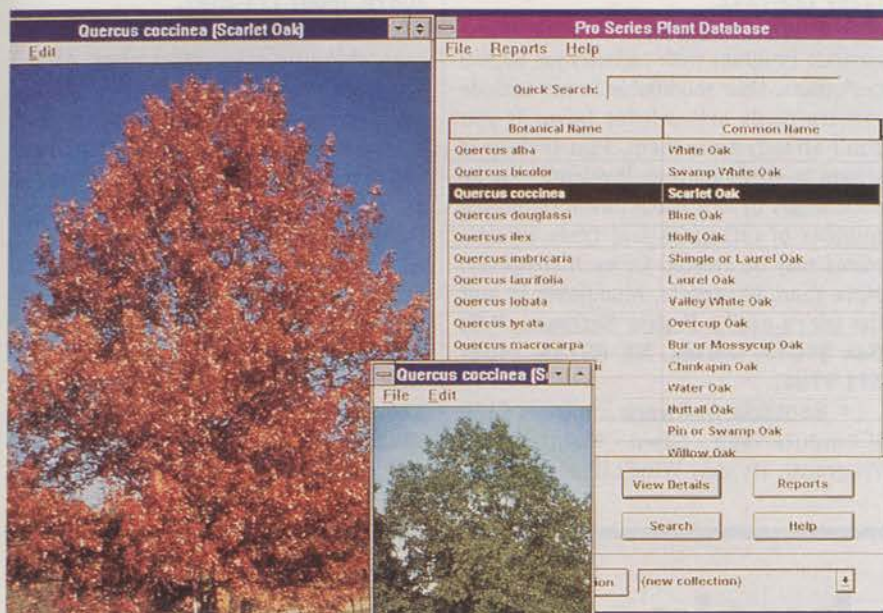
times of hearing something before they remember it. Before they understand it. So don't get discouraged. Just keep on educating.

One of the rules in advertising is that, just about the time you are so sick and tired of hearing your ad, the public is just beginning to take note of it. It will take a while longer before they actually understand it, and still longer before they request what you are offering.

If you've used educational advertising, you have well established yourself as a local authority on the subject, and word-of-mouth takes over as your best source of advertising.

—Judy Good and her husband John are co-owners of J.B. Good Inc. For more information, or to order educational post cards or posters, write them at 5250 N.E. Highway 20, Corvallis, OR 97330. Phone number is (503) 752-6260.

Computer software to help you stay abreast of the times



Green Thumb Software Pro Plant Database has cultural information to help the landscaper and homeowner envision more than 2,000 plants.

by Ron Hall,
Senior Editor

■ The newest computer software products directed at lawn and landscape pros are getting easier-to-use, more helpful, and more colorful. The most eye-catching are the graphics programs for landscape or irrigation design. But there are others that deal strictly with lawn/landscape business management.

Here are some of the newest software offerings, updates or news, coming across our desks:

- **Acacia Software**, a company that produces imaginative landscape design items, is gathering subscribers for its *Landscape Computer News*. The Spring 1995 issue had 12 pages, 10 of them filled with good stuff. You don't have to be a computer whiz to appreciate the information. Gerry Kiffe, the editor, describes the *News* "as a forum for ideas promoting the thoughtful use of computers in the landscape trade." Four issues a year cost \$30 plus s/h. **Acacia Software, 2899 Agoura Road, Suite 652, Westlake Village, CA**

91361. (805) 499-9689.

- **Books That Work's 3D Landscape** is low-cost software aimed at the do-it-yourselfer, but some landscape pros start with something like this, get excited about what design software can do, then move on to more powerful and versatile tools. At just \$49.95, the price is right. Also offered: *Garden Encyclopedia* and *3D Deck*. In fact, Books That Work has a nice section of home project software. **Books That Work, Customer Service Dept., P.O. Box 3201, Salinas, CA 93912-9869. (800) 724-8454 ext. 128.**

- **Creative Custom Software's Lawn Manager** program is made up of eight integrated programs: accounts receivable, maintenance billing, job cost tracking, chemical tracking, vehicle maintenance, accounts payable, payroll system and proposals. Recommended for 386/486 computer, 80+MB hard disk, 1 MB RAM and a VGA graphics monitor. One year free telephone support. Program comes "network ready" and can be modified upon request. **Creative Custom Software, 336-C Rockport Road, Port Murray, NJ 07865.**

(908) 689-5878.

- **Design Imaging Group (DIG)** offers a new CD-ROM disc containing more than 1,800 database items including trees, shrubs, and groundcovers from all zones; pools and spas; and a complete catalog of hardscape items including gazebos, arbors, and brick, stone and marble in several different textures and patterns. **DIG, 32107 West Lindero Canyon Road, Suite 108, Westlake Village, CA 91361. (818) 706-8786 (Calif.) or (201) 770-9212 (N.J.).**

- **Green Thumb Software's Pro Series Database** for CD ROM contains cultural information on more than 2,000 plants. Green Thumb says the program is a visualization tool for garden centers, landscape designers, and others who reference print-

continued on page 10L

THATCH MANAGEMENT!

THATCH BUSTER

*Cellulose Decomposing
Enzyme*

PERVADE

*Superior, Biodegradable
Penetrant*

MAXIPLEX

*Non-fulvic humic soil
amendment for improved
microbial activity*

FLORATINE

*Creative Solutions for
Turfgrass Management*



179 So. Main/Collierville, TN 38017
(901) 853-2898

Circle No. 110 on Reader Inquiry Card

COMPUTERS *from page 5L*

ed plant materials regularly. It is Microsoft Windows compatible. Product shipments began in April. It can be used stand-alone (IBM-compatible, 386SX minimum computer with Windows 3.1, 4 MB of RAM, CD ROM drive, VGA graphics, mouse recommended). Or it can be integrated with GT's LandDesignerPro and IrrigatorJetPro. **Green Thumb, 75 Manhattan Drive, Suite 100, Boulder, CO 80303. (800) 336-3127.**

• **Lafayette Landscape Designs.** Ric and Rhonda Jones updated their LLDesigns imaging/rendering graphics software with a new paint driver, NeoPaint v3.1B. The IBM-compatible software offers 629 cultivars (in 256 colors) depicted to scale. It can be easily manipulated, using NeoPaint, to produce realistic elevation views. The perennials, annuals, bulbs, trees and shrubs are drawn as flowering and non-flowering to allow the designer to show the client a month-by-month progression of bloom in a plan. Faithfully

drawn landscape graphics. Complete packages, including a full legal copy of NeoPaint and the 629 Zone 5 cultivars, retails for \$350. Demo disk available. Smaller, individual packages for perennials, woody plants and annuals also available. **Lafayette Landscape Designs, 6323 Lafayette Road, Medina, OH 44256. (216) 725-7442.**

• **Prairie Software.** Grounds Maintenance Program with capacity for 99,999 customers. User modifiable forms include camera-ready artwork for forms if you don't already have them. Past history is always available on line. Invoicing may be done singly or in a batch mode. Unlimited number of estimates and types of estimates may be created for each customer. More than 30 reports, modifiable to suit the user's needs. **Prairie Software, P.O. Box 34645, Omaha, NE 68134. (402) 571-9786.**

• **Sensible Software** improves CLIP (Computerized Lawn Maintenance Program). Its new WinCLIP release is a

complete Microsoft Windows compatible program that includes job costing, work projections, estimate management, equipment management and other features. Sensible Software's CLIP has been around since 1988 and has garnered a strong following. **Sensible Software, 2 Professional Drive, Suite 246, Gaithersburg, MD 20879. (800) 774-2547.**

• **TKO Software's** RainCAD 3.0 has been shipping since December. All 1.1 users can upgrade for only \$250, and 2.0 users can upgrade for \$20 to cover printing of a new users manual. Also IRRICALC-Pro and EZ, two Windows programs, are now available. A water cost database allows for price estimating by gallons, cubic feet, or acre feet for each month of the year. Xeri-Calc 1.0 for low-volume irrigation is another recently developed Windows program. **TKI Software, 800 West Sam Houston Parkway South, Suite 220, Houston, TX 77042. (800) 348-3248.**

More family business owners are contemplating selling out

Economic conditions and new income tax and estate tax laws may be the reason.

■ Even though it's a time of economic growth, 65 percent of family business owners believe that the national economy has gotten worse or merely state the same since Bill Clinton became President, according to a survey by Massachusetts Mutual Life Insurance. Only 32 percent feel it has improved.

Possibly because of this perception—and others—fewer family business owners are passing their ownership to close relatives, the survey notes. Last year, 65 percent said they intended to keep the business in the family, but this year only 57 percent of the 1,002 respondents said the same.

"It could be that people are taking a look at passing their businesses on at the same time they are starting to deal with

changes in the income tax and estate tax laws," says Dr. Bonnie Brown, director of the Institute of Family Business at Baylor University. "That combination may be giving them reason to think that they may be better off to sell."

Fifty-three percent of the survey participants think business conditions have gotten worse for family businesses, while only 11 percent say they have improved.

"There was clear disapproval of the Clinton Administration," says Dr. Craig

SMALL BUSINESS SURVEY

Intend to Keep
Business in the Family

65%

Have a Completed
Written Estate Plan

53%

Believe Economy has Worsened
or Stayed the Same Since Jan. '93

65%

Aronoff of Kennesaw State College in Georgia.

Here are other survey findings:

- 53% said they have completed a written estate plan. (Since estate tax rates can now be as high as 55 percent, businesses can often thrive or fail based on their ability to pay taxes without having to divert funds from the business.)

- 62% claim to have either "a good idea" or "some idea" of what their estate tax liability will be.

- 47% will pay the estate tax bill with life insurance.

- 28% have prepared a written succession plan.

- 93% have never used a consultant or counselor to help resolve family conflicts.

- 57% say they want to work as long as possible before considering retirement. (Only 33% have a target retirement age.)

- 21% of the respondents are women, a much higher percentage than in large, non-family corporations.

The key to fairer succession, notes the Henning Family Business Center, is life planning. There are four reasons to put a will and trusts in place, the center observes:

- 1) To assure your spouse's security.
- 2) To create equity among your children.
- 3) As a means to transfer your business.
- 4) To save estate taxes.

Henning says that successful life planning includes the following:

- Financial security for parents.
- Family values development.
- A family mission statement.

Family business formula for success

■ To be successful in a family business, members must have the following qualities, according to David Bork, a family business counselor based in Aspen, Colo.

- 1) **Shared values**, especially about people, work and money. "If there is a basic agreement about underlying values, then it is possible to create a shared vision for the future," Bork says.
- 2) **Shared power**, as families learn to respect one another's competence and expertise. "We each have different strengths, talents and abilities," Bork notes.
- 3) **Traditions** like travelling together or spending holidays together, Bork

says, bond the family into a unit.

- 4) **A willingness to learn and grow.**
- 5) **Activities** for the maintenance of relationships "put 'relationship currency' into the family bank," he says.
- 6) **Genuine caring** for each other.
- 7) **Mutual respect and trust.** "Some might even call it love," Bork believes.
- 8) **Assistance and support**, "especially at times of grief, loss, pain and shame."
- 9) **Privacy.**
- 10) **Well-defined interpersonal boundaries** that keep individuals from getting caught in the middle.

- A business plan.
 - Successor training, including leadership development.
 - Choosing the successor.
 - Preparing for retirement.
 - Career mapping for the entire family.
 - A participation policy for the family.
 - Transfer of ownership and control.
 - Retaining "key" non-family employees.
 - Development of a new management team.
 - An emergency plan for succession crisis.
 - Developing a family council.
 - Activating a board of directors.
- All of this planning serves to magnify

the benefits of all the years of hard work, according to management consultant Peter Drucker. In effect, he says, it is the "Final Test of Greatness."

—For complete results of Mass Mutual's survey, phone the company at (800) 494-5433 in Springfield, Mass. If you would like more information about the Henning Family Business Center's programs on succession or Mike Henning's consulting arrangements, you can phone (217) 342-3728 in Effingham, Ill. The Henning group also publishes a regular newsletter titled "Mike Henning's Family Firm Advisor."

Trading your services for other commodities

■ Just because you're short on cash doesn't mean that you have to go without. More and more business people are turning to bartering—and finding that it can be good for business.

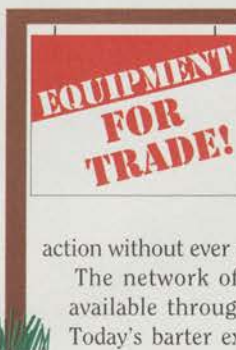
In its simplest form, bartering involves an equal trade. One business swaps goods or services for another. A retail florist or grower might trade merchandise for computer equipment. A landscaping company may trade its service for advertising space in the local newspaper.

Through professional barter exchanges, where members pay a commission for

goods or services traded, more complicated trades are possible. Here's how it works:

A business lists something for trade through the exchange. In return, the business receives a trade credit based on its dollar value. The business can then use its trade credits to "purchase" goods or services offered by other members. The result is that the business is hooked up with a network of actively bartering businesses.

For example, a garden center might offer plants and trade its barter credits in for mowing services. The mowing service might trade its credits in for computer



equipment. And the computer company might trade its credits for office plants. Three separate businesses have taken part in a buy-and-sell trans-

action without ever exchanging a dime.

The network of goods and services available through barter is growing. Today's barter exchange may have as many as a few thousand members nationwide. As bartering becomes more popular, some barter exchanges are starting to trade with each other, further expanding the bartering opportunities available to their members.

Bartering is also another way of advertising.
continued on page 10L



Turns Mountains Into Mowhills

[4-WHEEL DRIVE F1145]

If you've got the wrong equipment, even mowing the flats can be an uphill battle. That's why more and more cut-

ters are climbing up on the John Deere F1145. With its new 28-hp engine, our high-torque diesel is the undisputed king of the hills. And though it won't turn the slopes of Sun Valley into a stroll through Sunny Brook Farm, this 4-wheel-drive is tough to top. Thanks to rugged componentry it shares in common with our 855 Compact Utility Tractor. Hydrostatic drive, 2-speed axle, differential lock, wet-disk brakes and planetary final drives. Make mowhills out of mountains. See your dealer for an on-site F1145 demo. Or for more information, call 1-800-503-3373.



NOTHING RUNS LIKE A DEERE®

Circle No. 114 on Reader Inquiry Card

TRADING from page 7L

ing your business. By bringing together buyers and sellers who may not have used each other's services before, it can introduce your company to new customers. These may be one-time customers or people who come back to purchase services once they've become acquainted with the business.

Companies that actively barter may do as much as 5 to 10 percent of their business annually through trades. The National Trade Association, one of the largest barter exchanges, recorded a record-breaking \$30 million worth of trades last year. And the ability to barter is not limited to size: corporate giants all the way down to one-person, at-home businesses can use it.

Barter exchanges typically charge a one-time membership fee. Some exchan-

ges also may extend a line of credit to new members. That way, they can start using credits before they've sold anything through a successful trade. Barter exchanges also offer the advantages that they don't require an even trade. You can use credits accumulated for one item to trade for several different items that together add up to your total credits.

Remember, however, if you get involved with bartering that there is no tax advantage. Barter and cash transactions are taxed equally by the Internal Revenue Service. In fact, the barter exchanges themselves must report goods and services sold through barter to the IRS.

Bartering also offers no guarantees. Some trades may happen quickly, others may take some time. An item a lot of businesses want—such as airline tickets—may

be snapped up right away, while carpeting may take a few months to trade.

And you can't always count on getting what you want, when you want it, through barter. The amount of certain goods and services available for trade may fluctuate during the year.

But you have to weigh the advantages against the disadvantages. Bartering turns your downtime or excess inventory into valuable commodities. It increases your sales while enabling you to purchase goods or services you need without any upfront cash. Remember: to make bartering work, you have to be patient, you have to persevere and you have to pick and choose what you want to purchase through barter.

—For more information on bartering, you can telephone the National Trade Association at (708) 390-6000.

Getting back tax refunds from losses you've previously incurred

by Mark Battersby

■ Fact of life: losses happen. And they aren't always the result of bad management or a poor economy.

In fact, one type of loss, a tax loss, can result from too many deductions rather than poor management. The trick is to make the most from these particular inevitable losses.

Many lawn/landscape business owners view losses as a temporary situation, claim the loss, accept a zero tax bill and go on to the next year. However, under our tax rules, you are probably allowed to carry back a net operating loss (NOL) from your business to apply as a deduction against prior income and to deduct from succeeding years' income any unabsorbed loss.

Put another way, a loss can produce a zero tax bill for the loss year but, handled properly, it can also result in a refund of previously-paid taxes or taxes that will be assessed when the company prospers again.

Simply stated, a NOL is the excess of allowable deductions over gross income, computed under the laws in effect for the loss year, along with any adjustments required by our tax law.

One of the prime benefits of a net operating loss is the fact that the losses may be carried back or carried forward to offset income

in those years when profits—not losses—resulted from the operation of the business.

A loss can produce a zero tax bill for the loss year or earn you a refund of previously-paid taxes.

The NOL carryback or carryover is generally that part of the net operating loss that has not previously been applied against income for other carryback or carryover years. In general, the NOL can be carried back three years.

When it carries—A NOL is first carried back to the third year before the NOL year; if not entirely used to offset income in that year, it is carried to the second year

preceding the loss year and any remaining amount is then carried to the tax year immediately preceding the loss year.

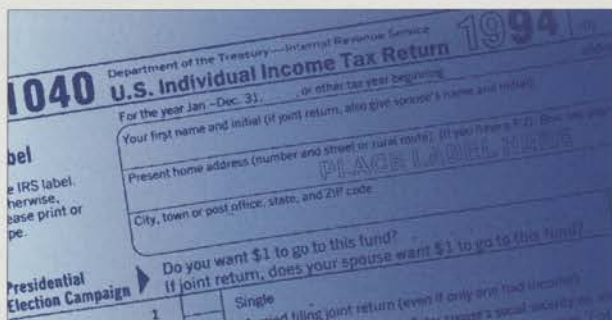
If the taxable income for the three preceding years is not sufficient to absorb the entire loss, any remaining loss is first carried to the year

immediately following, then to the second year following, up to 15 years or until the entire loss is used up.

A special carryback refund procedure allows incorporated landscapers to get refunds from applying the NOL to an earlier year's tax return by filing Form 1139 (Corporation Application for Tentative Refunds). The IRS is required to act on this application within 90 days of either the date it's filed or the due date for the corporate income tax return, whichever is later.

The immediate cash infusion resulting from refunds of previously-paid taxes is not the only nice thing about NOLs. If you are entitled to a carryback period, you may choose, instead, to forgo the entire carryback period to carry the loss forward only.

This election must be made by the return due date (including extensions) for the tax year of the NOL. Unfortunately, the



election is irrevocable for the year in which it's made.

Net operating loss deductions are obviously more valuable in high income years when your tax rate is higher. Thus, carrying back a net operating loss—or increasing it—can be a good choice if you have a high income during those carryback years.

On the other hand, if you paid tax at a low rate in the carryback year but anticipate higher income in future years, you may want to conserve your NOL.

Naturally, if you choose to ignore the carryback provisions of the rules, there is no reason to attempt to increase the current-year NOL since expenses and losses taken will be claimed in later years anyway.

Strategies—Here are some strategies you can use to increase a NOL legitimately:

- You can accelerate deductions into the next tax year by, for instance, purchasing next year's supplies in the tax year when a loss appears inevitable.

- In some cases, income can be deferred from the loss year to the next. Check with your accountant.

- You may want to take down losses on investment or other assets when their book values or bases are greater than fair market value.

- Planned equipment purchases can be accelerated to take advantage of the \$17,500 expensing deduction or to increase the loss-year depreciation deductions.

- You might be able to take steps to nail down bad debt deductions for uncollectable accounts.

Net operating losses are not always bad. All too often, they are the result of depreciation, first-year write-offs (up to \$17,500) of newly-acquired equipment, fixtures or other business assets.

Tax Form 1139 is the key. But if a carryback entitles you, your estate or your trust to a refund of prior-year taxes, file Form 1045 for a quick refund.

—The author is a freelance writer specializing in tax and financial issues. He is based in Ardmore, Pa.

Ornamentals can grow, even in difficult areas

■ Whether your clients' land is too wet, too dry, too shady or too steep, there are beautiful, hardy plants that will thrive.

"The trick to a low-maintenance, long-lived landscape is selecting plants best suited to grow in the climate and soil conditions," says Dr. J. Robert Nuss, professor of ornamental horticulture at Penn State University.

Overly wet soils occur in low-lying areas and are produced by springs, a high groundwater table or nearby ponds or streams. "Consider yourself lucky if you have a wet area on [your client's] land," says Nuss. "It can support a wide range of exotic plants, many of which grow nowhere else."

Annuals that do well in shady, poorly drained areas are shown in the chart above.

Garden centers and catalogs carry

native fern and wildflower stock. "Be patient when introducing wildflowers to an area, though," Nuss suggests. "It may take a few years for them to get established and become showy."

Shrubs and trees that do well in damp, shady places are also shown in the chart. And some fruit-producing shrubs, such as blueberries, also grow in partial shade if they receive a half-day of sun to help flowers and fruit develop.

"Many of these plants do just as well in shady, well-drained areas," says Nuss.

Sunny, dry slopes, though, are another story. "Even during rainy periods, slopes land quickly loses water. These areas require plants that don't mind droughty conditions."

However, even drought-resistant plants

"appreciate organic mulch and periodic watering during the hot summer months," Nuss observes.

Sometimes soil composition also requires careful selection of plants. Heavy clay soil presents problems for plants with delicate root systems, and for most annuals you'll have to work in a "generous amount of organic material."

Nuss recommends a soil test, done by either a private lab or your friendly, local cooperative extension agent.

"You can save time and money by learning about soil, light and water conditions and by selecting well adapted species," Nuss concludes. "With just a little care, you can have a beautiful landscape just about anywhere."

HARDY PLANTS FOR THE LANDSCAPE

ANNUALS FOR SHADY, POORLY DRAINED AREAS:

impatiens, sweet alyssum, scarlet sage, blue sage, verbenas, some wildflowers (cardinal lobelia, forget-me-not, wild iris, many violets)

SHRUBS AND TREES FOR DAMP, SHADY AREAS:

alder, dogwood, pussy willow, weeping willow, magnolia, mountain laurel

FLOWERS FOR SHADY BUT DRIER AREAS:

columbine, lily of the valley, bleeding heart, balloon flower, daylily

SHRUBS AND TREES FOR SHADY BUT DRIER AREAS:

boxwood, false cypress, holly, hemlock, pine, yew, barberry, cotoneaster

ANNUALS FOR SUNNY, DRY SLOPES:

marigold, zinnia, four o'clock, geranium, cosmos

PERENNIALS FOR SEMI-ARID AREAS:

yarrow, butterflyweed, daylily, lupine, oriental poppy, prickly pear cactus, many groundcovers like crownvetch and sedum, some ornamental grasses

PLANTS FOR HEAVY CLAY SOILS:

mint, coltsfoot, Siberian iris, perennial sweet pea, red maple, American Hornbeam, pin oak, arborvitae

Need new business?

■ One way to enhance or build a landscape contracting business is to provide services that relate to these future gardening trends, as outlined by Charles Dunn, founder of The Garden Center in Tampa, Fla.

- yards as "outdoor rooms" to live in, rather than just look at
- intensive gardening in small areas
- structural and planted privacy screens
- night lighting of landscape features
- aquatic gardens, garden accessories that feature water
- wildflower plantings
- ornamental grass plantings
- bush fruits, containerized dwarf fruit tree plantings
- herb plantings
- color and fragrance as factors in choosing plants



- heirloom and antique cultivar plantings
- bird feeding
- homegrown flowers for cutting
- no-mow groundcovers instead of grass
- smaller lawn areas
- environmental activism
- water-conserving techniques
- potted plants
- emphasis on perennials rather than annuals
- landscape furnishings
- plants from other countries
- home gardening as an interest of older people

—Courtesy of ALCA Contractor News, May 1994. For more information about the Associated Landscape Contractors of America, phone (703) 620-6363.

PROFESSIONAL LAWN CARE ASSOCIATION OF AMERICA (800) 458-3466

■ **THE ENVIRONMENTAL** Protection Agency praises the PLCAA for its participation in the Pesticide Environmental Stewardship Program, which recognizes organizations that demonstrate a progressive approach to pesticide use.

"I applaud the steps your organization has already taken toward reducing the risks from the use of pesticides," noted Daniel M. Barolo, EPA's director of the Office of Pesticide Programs. "To further advance our common environmental goals, the next steps require collaborative public-private partnerships. Your willingness to join the PESF indicates your dedication to these goals."

Tom Delaney, PLCAA's government affairs director, says that the organization is developing its environmental stewardship strategy now.

THE CERTIFIED Turfgrass Professional program is catching on around the world with lawn applicators from the U.S., Singapore, Israel, Canada and Bermuda expressing interest.

"We have more than 600 people registered and 45 who have successfully completed the course and earned their CTP," reports Dr. Helen Mills, head of the University of Georgia's Community Learning Resources department, which coordinates the program.

For a free brochure on how to become a CTP, call (800) 458-3466 or fax (404)

ASSOCIATION NEWS

578-6071. PLCAA members receive a discount on enrollment fees.

ASSOCIATED LANDSCAPE CONTRACTORS OF AMERICA (800) 395-2522

■ **WHO'S WHO** in Landscape Contracting, ALCA's annual membership directory, has been mailed to all members. Additional copies are only \$5 each for members and \$25 for non-members (plus \$1.50 shipping and handling).

SEVERAL SESSION topics have been confirmed for ALCA's the 1995 Landscape and Grounds Maintenance Conference being held Nov. 12-16 in Fort Worth, Texas in conjunction with the Green Industry Expo.

Confirmed sessions include: "Building a Successful Management Team," "Irrigation Maintenance & Operations," "Selling Residential Design/Build Services," "Snow: Everything You Ever Wanted to Know," "Leadership Principles," "Estimating for Successful Bidding," "Improving Productivity" and "Annals: Add Spice with a Color Program."

Keynote speaker at the Green Industry Expo will be former prisoner-of-war Charlie Plumb.

MASTERS IN MANAGEMENT

seminars will be held in three U.S. cities over the next three months: July 28-29 in Baltimore, Md.; Aug. 18-19 in Chicago, Ill. and Sept. 15-16 in Denver, Colo.

For inquire about space in a particular seminar, phone Connie Whelchel at ALCA headquarters.

ENTRIES FOR the Exterior Environmental Improvement Awards are due in ALCA's office by August 18.

PROFESSIONAL GROUNDS MANAGEMENT SOCIETY (410) 584-9754

■ **COMPANIES MAY** now become members of PGMS, a heretofore professional society for individuals.

"The broadening of our membership offering was the result of two major considerations," says PGMS president Steven W. Chapman. "First, we have been receiving increasing numbers of inquiries from companies—industry suppliers and others—who are interested in working more closely with PGMS and its members, and we just didn't have a mechanism to make that happen as naturally as we would have liked."

"Also, the addition of company members makes us more parallel to our partners in the Green Industry Expo, and will make certain exhibitor-related arrangements for the Expo more easily accomplished."



LANDSCAPE MANAGEMENT

New Products '95

DOWELANCO

Dursban Pro insecticide controls chinchbugs, cutworms and a variety of other insects.

Dursban Pro, an emulsifiable concentrate, was designed to provide turf and ornamental professionals with the same proven performance they've come to expect from Dursban in a new low-odor formulation.

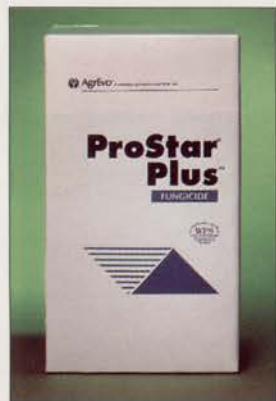
Dursban Pro replaces other Dursban formulations, including Dursban 2E, Dursban 4E and Dursban Turf Insecticide.

Circle No. 153 on Reader Inquiry Card

AGREVO

AgrEvo's Prostar Plus fungicide is a twin-pack of two independently registered products—Prostar 50WP and Bayleton 50 Turf and Ornamental Fungicide—for control of brown patch, dollar spot and 17 other turf diseases.

The key to the twin-pack's effectiveness is a synergism which dramatically increases the length of brown patch control. Prostar has preventive and curative control of brown patch. Circle No. 151 on Reader Inquiry Card



CIBA TURF & ORNAMENTAL PRODUCTS

A new application system for Ciba Turf & Ornamental Products' Alamo fungicide has been registered with the Environmental Protection Agency.

Alamo is a systemic, for control of oak wilt and Dutch elm disease.

The new micro-injection system makes the product easier to use and less expensive to apply, and provides a "closed" delivery system.

Circle No. 152 on Reader Inquiry Card



KUBOTA TRACTOR CORPORATION

Kubota Tractor Corporation's L35 tractor-loader-backhoe has more power than most tractors, and offers greater mobility than full-size industrial models.

Powered by a 35 gross-hp engine, the L35 is equipped with a full-scale backhoe and loader specifically designed to handle heavy excavation and fill work, particularly in narrow spaces.

Circle No. 156 on Reader Inquiry Card



FLORATINE PRODUCTS GROUP

Floratine produces specialty products for turf, including auxiliary nutrient biostimulants, soil correction and balancing amendments, and spray adjuvants.

Floratine's specific design growth enhancers (Aston, Per "4" Max, Knife, Renaissance (and Perk Up) promote general health, stress resistance and root growth in intensively managed turf. Soil treatments/amendments improve moisture and nutrient management.

Circle No. 154 on Reader Inquiry Card

LANDSCAPE MANAGEMENT



FOX VALLEY SYSTEMS, INC.

The Easy Marker has been completely updated for better, more effortless marking. A wider comfort ease trigger lets the compatible power paint cartridges stay locked, eliminating hand fatigue.

The Easy Marker is for construction companies, utility companies and contractors. According to the company, the Easy Marker is innovative, new and economical, with state-of-the-art design.

Circle No. 155 on Reader Inquiry Card

LOFTS SEED

Lofts Seed has released, in limited supply, the new bentgrass known in research trials at Texas A&M University as SYN3-88. It will be commercially available as Crenshaw Creeping Bentgrass.

Crenshaw displays excellent heat resistance. It produces a bright green, dense, upright turf with less grain.

Circle No. 157 on Reader Inquiry Card



VALLEY MANUFACTURING

The E-Z Dumper, the original hydraulically operated dump unit for pick-up trucks, is offering a free cab protector with every E-Z Dumper purchased April 10 through July 15.

E-Z Dumper holds up to 4000 lbs., and unloads in seconds, eliminating long hours and hard work associated with manual unloading.

Circle No. 159 on Reader Inquiry Card



MILES SPECIALTY PRODUCTS

Merit 75 WSP insecticide is a new broad-spectrum systemic insecticide that is extremely effective at very low rates.

It offers less risk to applicators, man and the environment.

Imidacloprid, the active ingredient in Merit, delivers superior season-long control of turf and ornamental insects without repeat applications.

Circle No. 158 on Reader Inquiry Card

WOODS EQUIPMENT COMPANY

A new line of high-performance, durable flexwing turf finish mowers from Woods Equipment Company are made for golf course, sod farm and other large-acreage turfgrass sites.

The Turf Batwing Finish Mowers come in three models, with 12- 15- or 17-foot decks.

Heavy tube frame construction features strong pivot points that prevent the wings from assuming a swept-back attitude after normal use.

Circle No. 160 on Reader Inquiry Card



Keep a watchful eye to extend equipment life



A list of important things to know before finalizing a preventive maintenance program for your mowers, trimmers, blowers and edgers.

by Eli Luster

■ All of us face ever-rising standards and ever-lower budgets. Personnel and equipment are expected to do more than ever before. To help get the most out of your equipment, a preventive maintenance program can:

- 1) extend the life of your equipment;
- 2) provide you with written records;
- 3) provide maximum uptime; and
- 4) make your machines safer.

If you want to lower the total cost of doing business, you don't lower the equipment maintenance budget. It's been my experience that the condition of a shop is almost always reflected in the condition of the equipment and the condition of the turf.

Some of the new machines—like five-reel mowers—have close to 3,000 parts. One bolt can drop off and you're going to have downtime. And that's not the worst part. The worst part is when another machine comes along and the bolt goes

through a reel.

Excellence begins with your own attitudes: diligence, perseverance and attention to details. So the more effort you put into preventive maintenance, the greater the benefits.



Eli Luster of John Deere doesn't advocate additives to motor oil.

One of the first things to do is meet regularly with operators. Some of the best ideas for preventive maintenance come from your staff. You'll also get to know their concerns.

The manual—Keep equipment manuals handy; consult them regularly. They've

been researched, written by qualified writers, and approved by engineering staffs and technical editors. Usually they're illustrated by trained photographers or artists. Store them in a proper, easy-to-access location. Even experienced operators should review them. You can use them as a guide to develop your own preventive maintenance program.

Fuel and its use—The fuel system has to be clean and fresh, and you cannot tolerate moisture in it. Either use the largest underground storage tanks you can get by with, or build a roof over above-ground storage tanks. It's important that tanks be kept out of direct sunlight because heat and light are the two things that degrade fuel the quickest.

Two-cycle engines should have their own storage area. Write the mix right on the tank of each piece of equipment.

If you are using alcohol-based fuels (ethanol, ether, methanol), don't store them for more than 30 days. Methanol is highly corrosive: it'll melt plastic and eat rubber. To find out if you're using an alcohol-based fuel, see chart on page 18.

The new premium anti-pollution fuels are causing faster carbon build-up in cylinders, so you have to be especially watchful.

The best way to combat fuel problems is to use the fuels in a timely manner. Don't use fuel mixes left over from the previous summer or winter. Summer-blended fuels are less volatile in colder weather and give you carbon build-up on spark plugs. Conversely, you can get vapor lock with winter-blended fuels and a hotter running engine.

Your unused fuel? Don't dump it; call a waste management facility.

Diesel fuel supports the growth of bacteria and algae in warm, humid climates. If this happens, it has to be cleaned out of the entire fuel system. To help alleviate the problem:

□ Keep storage tanks as full as possible.

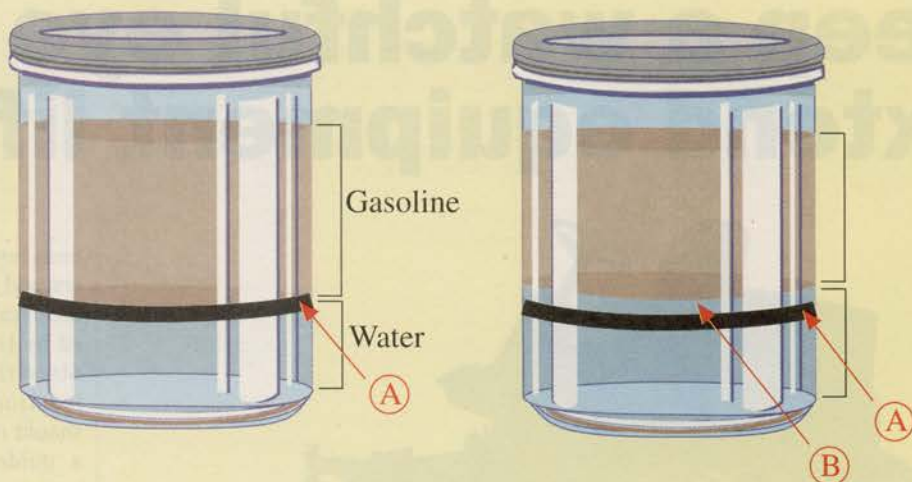
□ Use a bactericide or algicide as an

continued on page 18

TO TEST FOR AN ALCOHOL-BASED FUEL

- 1 - fill a container about 1/4 full with clean water;
- 2 - fill container to 3/4 full with fuel;
- 3 - using a marker, mark line of fuel/-water separation (A);
- 4 - cap and shake vigorously for 2 to 3 minutes;
- 5 - let settle 3 to 4 minutes.

If new line of separation (B) is higher than original line (A), the fuel IS alcohol-based.



PREVENTIVE from page 17

additive.

□ Change fuel filters at manufacturer's recommended intervals.

Replacement parts—"Will-fit" parts are different than original equipment manufacturer parts. You really have to be aware of the differences. Will-fit parts are usually required to have some military specifications, but original parts sometimes have things in them that aren't in

Other key points—Numerous other factors play key roles in how well your equipment functions on a day-to-day basis:

- Operators are your best service people because they know the machines. Train your operators to be alert to changes in the machine's performance. Look, feel and listen to the machine. Smell it, too.

- Equipment should be kept looking good. Keep it clean, and take care of paint nicks. It helps give you more trade-in value and forms a good operator's opinion of the equipment.

- Part of the reason we use anti-freeze is because of its corrosion inhibitors, especially in aluminum engines. So change it regularly because old antifreeze will still be cooling the engine but the anti-corrosive elements will be used up.

- The worst thing you can do for an air-cooled machine is to take the shrouding off. It must remain in place. In the spring, if you're having problems, you can

check behind the shrouding for mice nests.

- I don't advocate any additives to oil. Most oils today are far superior to what we were using a few years ago.

- Nothing will determine the quality of cut more than the cutting unit itself. People judge you by how your turf looks, and you can't cut grass with a blunt edge. Angles, reel speeds, and ground speeds have the potential to give you poor turf or shortened machine life. You should also clean the accumulated grass out of rotary decks.

- You have to have documentation. If you can go back and check how much the equipment is costing you to operate, you know whether it's time to trade it in. It can be as simple as a spiral-bound notebook.

- You almost need a checklist for end-of-day service. I suggest you blow-down the equipment with compressed air before you give it a liquid wash.

Checking up—Make these three checks regularly:

CHECK UP...Make sure the operators are performing regular maintenance. Have operators sign and date the checklist. Nobody can remember everything.

CHECK BACK...occasionally to make sure the pre-start checks are being done.

CHECK WITH...supervisors to make sure people are doing the checking.

Preventive maintenance is tough, but it's rewarding. You *can* save money—how much is up to you. Commitment means not what you are, but what you're willing to become.

—Eli Luster is field service coordinator for John Deere's Horicon (Wis.) Works. This article is an excerpt of a presentation he gave at the Sports Turf Managers Association's annual conference earlier this year.



Angles, blade speeds and ground speeds have the potential to give you poor turf and shorten your machine's life, neither of which will help your bottom line.

the military specs. Will-fit parts look the same and fit—but they give you totally different performance. If you're going to use well-fit parts, you're going to have to know the difference.

The *real* costs of your maintenance equipment from a bidding perspective

by J. Paul Lamarche

■ More important than any other criteria you might use to purchase equipment, the machine must match the job for which it is intended.

You can simplify the selection process by talking to your equipment dealer, who should be highly trained, service oriented and backed by the manufacturer.

Many contractors are confused by the wide variety of equipment available. Indeed, many walk into a dealership and ask, "Which is the cheapest machine available?" when they should be asking, "Which machine best suits my needs?"

Let's focus on choosing the right machine from a job bidding perspective. When examining the different types of mowing equipment, the first question you should ask is "Can I afford it?" On the other hand, you should be taking into account any potential increase in productivity that could result from buying a more expensive machine. This is especially important when the machine lowers the per-hour cost to your customers.

So then ask yourself if you can charge for the equipment, get a return on investment, still be competitive, and also actually increase your productivity.

To answer these questions, you will have to obtain the following information from your dealer for each piece of equipment you're considering:

- 1) cost of machine,
- 2) the machine's life expectancy in hours, and
- 3) operating capacity of the machine.

You also need to look at certain figures pertaining to your own company:

- 1) overhead as a percentage of sales,
- 2) hourly rate of pay for the equipment operator, and
- 3) hours you use the machine per year.

From this information, you can figure out how much you need to charge per hour. Is this rate competitive? Can you actually afford the machine?

Brass tacks—Let's compare the operating costs between a 48-inch walk-behind mower that mows and mulches and a 48-inch riding tractor that mows, mulches, vacuums and dethatches. The walk-behind

might cost \$3000 while the tractor might cost \$9000. Which is the better bargain?

Contractors trying to reduce their debt load might be inclined to choose the first machine and save the second for "maybe next time." But there is more to it.

For a company that might use the machine 750 hours per year (25 hours a week for 30 weeks), either machine would have a lifespan of approximately four years.

According to the JPL Equipment Costing Formula, the hourly cost of any machine is obtained by dividing the lifespan (in years) by two, multiplying it by the annual usage (in hours), and dividing the result into the cost of the product in question.

In other words, the \$9000 machine costs \$6 per hour to use and the \$3000 machine costs \$2 to use. With the \$9000 machine, you would earn \$18,000 over its lifespan (4 years multiplied by 750 hours multiplied by \$6 per hour). With the \$3000 machine, you would earn \$6000. So you can see that you're actually earning "return on investment" with both machines.

The cost of the operator must also be considered. For a worker making \$7.50 an hour, the total payroll burden (taxes, insurance, worker's comp) might be \$10.50 per hour. Downtime (travel time, coffee breaks, sharpening blades, etc.) usually amounts to 2.5 hours per 10-hour day, so you'll have to compensate yourself for this time: add 25 percent for a total charge to your business of about \$14 per hour for operator costs.

For the \$9000 machine, to figure out the hourly break-even charge using the JPL Estimating Formula, add the cost of the operator (per hour) to the cost of the equipment (per hour) and divide by 100% minus your overhead. In our example, the break-even price is \$33.34 per hour for the



You can actually earn return on investment with most mowers. How much return, though is variable.

\$9000 machine. To get 10% profit, you have to charge the customer \$40 per hour.

For the \$3000 machine, the break-even charge would be \$26.67, and to get 10% profit, you have to charge the customer \$32 per hour.

However, since the \$9000 machine also picks up cuttings and debris, it eliminates the extra labor you would need for raking up and passing the leaf and grass blower.

If you have a three-acre maintenance job that requires cutting and raking, the \$9000 machine will do the work in two hours maximum. The \$3000 machine would take four hours maximum.

Therefore, you would have to charge the customer \$80 using the large machine, but you'd have to charge \$128 using the smaller machine.

Figuring costs of the machine on the job, and considering the typical jobs they will be required to do, will help you decide which type of machine to buy, and whether—in fact—you should initially buy a more or less expensive machine.

—The author is owner of JP&L in Niagara-on-the-Lake, Ontario, Canada. The company specializes in financial and marketing strategies for horticultural and construction firms across North America.

For more information, phone (905) 935-2648.

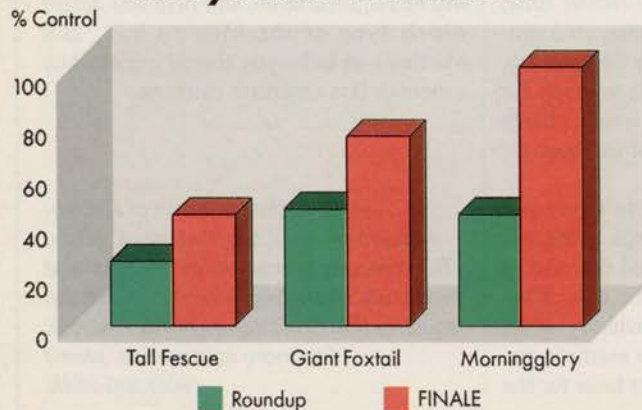


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IMPORTANT: Please remember always to read and follow carefully all label directions when applying any chemical

*Under natural conditions the half-life of Finale in soil and water (DT50) is between 7 and 20 days, depending on temperature, aerobic conditions and microflora.

Roundup is a registered trademark of Monsanto Company.



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Circle No. 101 on Reader Inquiry Card

SAFETY FIRST: A List

■ *Being in the lawn care business isn't easy, especially if you follow all the rules of safe, common sense procedures.*

Here's a list of safety tips by Dr. Austin Frishman, well-known expert in the structural pest control profession. They all apply to the LCO.

SPILL CONTROL

1. Does each vehicle have appropriate spill control material, and does each technician know how to use it?

SPRAYERS

1. Has each applicator demonstrated to his or her superior how to apply control products properly with each piece of equipment you have issued?
2. Do you have a working pressure gauge for the compressed sprayer?
3. Can the applicator make simple repairs on the compressed sprayer?
4. Does the applicator carry repair tools and spare parts for sprayers?

DATA SHEETS

1. Are all Material Safety Data Sheets (MSDS) up to date? Do you have a copy of a letter sent to your distributor requesting such?
2. Has each technician been given a written quiz on each pesticide label and MSDS sheet you have? Is the quiz in his or her file, and is it updated as needed?
3. Does each truck and each wallet carry the phone number of the local poison control center?

TRAINING

1. Are all applicators certified, even if not required?
2. Is there, in fact, an introductory training program at your company, including strong emphasis on safety storage?
3. Are technicians aware of state regulations that are stricter than the EPA label statement?
4. Are new employees who worked for

other lawn care applicators mandated to complete your own training program before being allowed to do the work on their own?

EQUIPMENT

1. Do employees know how to properly use a respirator?
2. Are you making at least monthly unannounced vehicle inspections, looking for safety features and proper storage?
3. Do all workers have the proper gloves, based on his or her duties? Are they checked weekly for holes and replaced as needed?
4. Have you issued the proper fire extinguishers and had one attached to each vehicle?
5. Does your required dress code include appropriate shoes?
6. Is there a policy on how often to clean the inside of your company vehicles, including the steering wheel?
7. Have you issued disposable hand towels for each vehicle?
8. Have you issued enough uniforms to allow for daily washing? Do employees know how to properly wash uniforms or work clothes?
9. Are you familiar with all Department of Transportation regulations as they pertain to your trucks? Do all vehicles have required Bill of Lading papers? Are you carrying the minimum amount of materials to be under the amount which requires extra paper work and safety procedures?
10. How's truck visibility when it comes to mirror placement?
11. Are vehicles cleaned and free of product odor before being sold or sent out for repair?

PUBLIC RELATIONS

1. Has the applicator been schooled in how to answer a customer's questions regarding pesticide safety?
2. Are accounts spot checked to see that the technicians have followed instructions and are solving control problems?
3. Are extra pesticide labels instantly avail-

able for customers as needed?

4. When you receive a call-back based on poor results, do you simply schedule an individual to treat again, or do you have your technician evaluate what went wrong? Maybe more product is not the answer.

CONTROL PRODUCTS

1. Do your control products have the highest LD₅₀ values and present the least environmental hazard?
2. Are new control products given a trial run by key people, in selected accounts and locations before you decide to use it regularly?
3. Are all service containers properly labeled, in good shape, and replaced as needed?
4. Do you check the empty containers regularly to see that triple rinsing is practiced?
5. Have you developed a walk-about check list that technicians must review before applying control products? Example: areas frequented by children, pets; chemically-sensitive listings; wind conditions; non-target plants.

PERSONNEL

1. Are new applicators given a medical examination, including a check of their cholinesterase level?
2. Have you checked the recommendations listed by an applicant *before* you hire him?
3. Are you aware of workers on your crew whose health problems could alter your pest control procedures?
4. If applicators cannot identify an insect, weed or disease problem, do they bring a sample to the office for proper identification before applying a product?
5. Are office staff who speak to customers properly trained to answer technical problems?
6. Are key supervisors given refresher courses?
7. Do you check driver's licenses every year to make sure they're up to date?

If you find it difficult to embrace change, rest assured,
the headroom remains the same as last year's model.



You can do it. Take a deep breath, walk briskly into your Kubota dealer (head held high) and ask to test-drive one of the new B-series tractors. And remember: change is a good thing.

Kubota
KUBOTA TRACTOR CORPORATION

For more information, write to: Kubota, P.O. Box 2992-LM, Torrance, CA 90509-2992. Financing available through Kubota Credit Corp. © 1995 Kubota Tractor Corp.



Color harmony with bedding plants

The end result should be as a living tapestry of pleasing, harmonizing colors and forms.

by James C. Schmidt

■ To successfully design a flower bed, you must be familiar with your plant materials. Evaluate the plants on the basis of their form, contrast, texture and color. Here are some considerations to help you plant a flower bed:

Form. The form of a flower is a basic element in designing a flower bed. The three major forms are spike, round (either individual or flower clusters) and intermediate. Spike flowers should be used as

accents, similar to using pyramidal evergreens in the landscape. Used excessively, they become a disturbing force that breaks up the entire composition. Using no spike flowers runs the risk of monotony. Also, keep in mind the entire form of the plant. Some plants grow narrow and upright, others are mounded, and still others are low and sprawling.

Contrast. Contrast is using opposing elements close together to produce an intense or intriguing effect. Compositions with contrast get noticed. Many of the most striking gardens contain plants that look more dissimilar than alike. You can contrast textures, darks, lights, colors, shapes, lines...any design element. Flower forms and heights offer more opportunities for contrast.

Color. This is probably the most important consideration when designing bedding plant schemes. Color expresses individual tastes; no one can tell you which colors should dominate your compositions. The most important thing is that color should please the eye. A good guide for obtaining pleasing color combinations is a color wheel similar to what an artist uses. Red, yellow and blue are primary colors; orange, green and purple are secondary colors. A warm color is always opposite a cool color on the color wheel.

Warm colors are the boldest and tend to be strong in the landscape. They can be used to create vivid color combinations. As a general rule, you should use them in sequence. If space is ample, the sequence should be smooth and gradual, such as red to orange-yellow, to yellow, to cream and finally to white. A jump from red to orange, to yellow to white is too abrupt.

Combining colors—There is no rule of thumb for how much warm or how much cool color to use. But the smaller the area, the fewer warm colors you should use. Cool colors should be used in small areas as they

give the illusion of depth.

Effective combinations can be made using complementary colors (those opposite on the color wheel). Orange and blue, yellow and violet, and red and green are complementary colors. Such compositions work best when one color is allowed to dominate the display and the other is used as an accent. Be careful with contrasting color schemes, because some of the combinations can be unpleasantly jarring. As a rule, avoid putting strong colors next to each other if the planting will be viewed at close range.

Other tips—Too often too much emphasis is placed on flowers. Pairing plants with non-green leaves, diverse variegation, glossy leaves, or blue tones ties a planting together and the assortment creates a mosaic backdrop that can enhance other flowers.

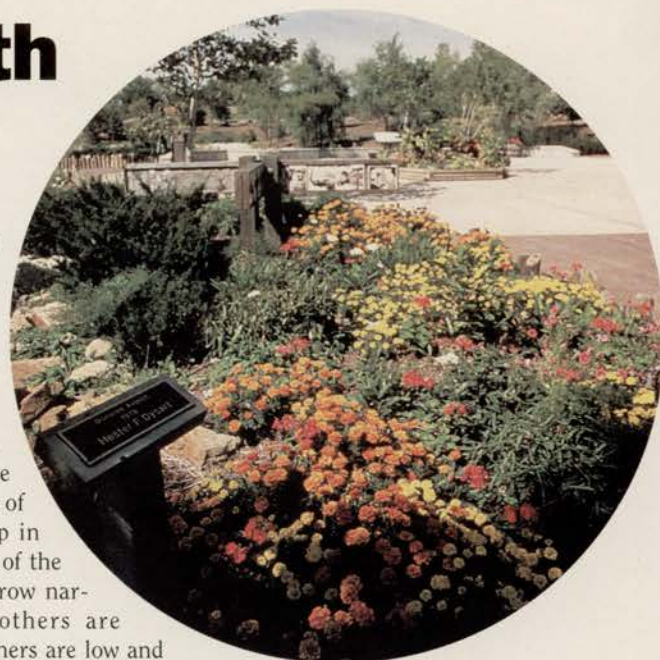
Don't spot a few flowers here and a few there. Group the plants in a staggered or irregular pattern that allows the mass of one plant to overlap or drift into the adjoining group.

This technique also eliminates the spottiness typical of many flower beds. Also, limit the number of varieties. This keeps the drifts simple but bold, and the border will have a strong visual framework that shows up from a distance.

Too many small drifts make the pattern too "busy," like a patchwork quilt.

By the same token, don't use many colors of the same variety. This will also result in a patchwork look.

View your arrangements from a distance, or consider how the planting will be



Color guide

- ❑ Use the darkest shades or the pure intense color at a point of principle interest.
- ❑ Never place two reds close together.
- ❑ Never use two strong colors together except for blue and yellow.
- ❑ Pastels are easy to blend but they lack vitality and won't show up from a distance. Dark colors won't show up either.
- ❑ Blue and white flowers are good colors to emphasize the color of other flowers. Using white as a contrast color deepens and strengthens the color(s) next to it.
- ❑ In general, avoid using bi-colors. Flowers in solid colors will usually produce a more sophisticated look and are easier to work with. It takes time to become aware of the subtleties of flower color and to become familiar with varieties that can supply the tints and shades you want. Although there's no substitute for experience when it comes to combining colors, your own taste will always be your best guide. Don't be afraid to experiment.



Eye-catching combinations

- Purple or violet petunias/yellow marigolds
- Lavender petunias/blue salvia/clear yellow French marigolds/dusty miller
- Blue salvia/Cosmos sulphureus
- Red salvia/white petunias
- Deep purple petunias/bright white fibrous begonias
- A rainbow of impatiens, one color fading into the next
- Pink fibrous begonias/dusty miller
- Red or salmon geraniums/dusty miller
- Yellow marigolds/purple alyssum
- Mixed blue, pink and white petunias/white sweet alyssum
- Cleome/white and pink petunias

seen. If it is most likely to be viewed up close by pedestrians, then an intricate pattern may be right. The same design may be "lost" by people driving by at 40 mph.

When viewed as an entire design, it should stimulate—by using warm and contrasting colors—or appear restful and soothing—by using cool, harmonious colors.

Remember that you need a large mass of cool color to catch the eye, and a smaller mass of a hot color.

There is no limit to the size of the beds. Truth is, they don't need to be large to be effective. Rely on the interplay of colors and shapes rather than the expanse of the display.

—James C. Schmidt is with the Department of Horticulture, University of Illinois.

The value of trees in your landscapes

by James E. Guyette,
Contributing Editor

■ Retaining existing trees at a construction site can bring added value to a developer's plans. But a builder may not be immediately aware of that opportunity—and mostly it's up to landscape managers and tree care operators to point out the advantages.

"Most people don't have the expertise to approach developers to convince them to spend money on saving trees," says Randy Christian, an arborist and landscape designer at JTO in Mentor, Ohio.

"It's really an inconsequential amount of money" involved, says Christian. The extra cost of saving trees, he says, often amounts to only one percent of a project's total budget. Yet having trees on a property can increase its selling value by dollar figures ranging from 10 percent to close to 30 percent, depending on location.

According to the National Association of Home Builders, developers and builders can get a premium of \$3,000 to \$15,000 per lot, depending on the type of trees involved and whether there are other wooded lots in the area.

And it's much cheaper to keep existing

trees than to purchase new ones for planting as a site. "The more trees you save, the fewer you have to buy," Christian observes.

When talking trees to a developer, "image is the best selling point," says Christian. "They'd better have something to bring people in." Public acceptance of this type of curb appeal continues to increase, and developers can see that reflected in money figures.

"Once the developer sees the benefits, the others [engineers and others on the project's planning staff] will be included," says Christian. "You have to get the sub-contractors involved, too.

An educated tree care operator is best suited to point out why it's important to save existing trees. "The developers are not aware of the services we can supply," Christian says.

Tree care operators can handle everything from mulching, fertilization and watering to supervising protection techniques during construction. This can mean long-range benefits for the savvy developer.

"It's a huge advantage when a developer can take a client through a development he did eight or 10 years ago and the trees are still standing," Christian explains. "Then he [or she] can take them through



Existing trees can make a development look much sharper.

another [competing] development where the trees are all dead or dying."

When sizing up a potential wooded site for a developer, it's important to see the big picture, according to Christian. "I'm not a tree-hugger. I don't try to save every tree. In a particular situation, you may save one tree, but mostly you want to save groups of trees. I try to get involved before the engineering is done, and get the engineer to walk the site with me."



IS A NEW THREAT
OF RESISTANCE LOOMING
OVER YOUR HORIZON?

The threat of resistance is very real. Reports are coming in that repeated applications of the same family of fungicides have forced resistant strains

of disease pathogens.

Brown Patch, Dollar Spot and Leaf Spot are creeping back, even after treatment.

But there's a simple way to protect your

perfect cornerstone for a season-long disease and resistance management program.

CHIPCO® 26019 is the proven, broad-spectrum fungicide that gives you unsurpassed control of Brown Patch, Dollar Spot, Leaf Spot, Fusarium Blight and Patch and

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CHIPCO® 26019 keeps Brown Patch in check in the heat of summer.



CHIPCO® 26019 gives you unsurpassed control of Leaf Spot.

BE READY WITH A ROTATION STRATEGY BUILT AROUND CHIPCO® 26019

course from the threat of resistance.

Product rotation with an alternate chemistry. Alone or tank-mixed, the long-lasting protection of CHIPCO® brand 26019 Iprodione fungicide is the



CHIPCO® 26019's long residual is your best defense against Dollar Spot.

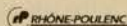
Pink and Gray Snow Mold and Corticum Red Thread.

So don't let resistance give you a spotty reputation. CHIPCO® 26019 is the product to start with. The product to rotate around. The foundation for all your tankmix combinations. Call your CHIPCO® sales rep today.



CHIPCO® 26019
FUNGICIDE

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Diagnosing problems of ornamental plants

Look, look and look some more, says this Cornell pathologist. Then begin to ask questions.

by Jerry Roche,
Editor-in-Chief

■ A plant disease, by definition, is any disturbance of a plant that interferes with its normal structure, function or economic value, according to Richard Buckley of the Cornell University Plant Pathology Department.

But a plant disease is a lot more than its definition, he says, adding, "You need three components: a host, a causal agent and a favorable environment."

Buckley believes that the favorable environment is the most important part. "I can find *Rhizoctonia solani* (brown patch) in almost any turf that comes into my lab," he notes, "but the environment stimulates that pathogen."

He classifies **causal agents** into two types: biotic (living) and abiotic (non-living).

Biotic agents include pathogens like fungi, bacteria, viruses, nematodes and MLOs; and pests like insects, mites, mollusks, small animals and deer.

Mechanical abiotic agents include mowing injuries, construction, hail, perched water tables, compaction, planting too deep, girdling roots and mice chewings. Typical symptoms of mechanical agents are breaks, bruises, punctures, cracks, chewing marks, girdling and root pruning.

Physical abiotic agents include temperature, light, moisture, winter injury, winter sunburn blisters or cracks, drought stress, rain and dampness. Typical symptoms of physical agents are tip and edge burn, interveinal necrosis and loss of older leaves.

Chemical abiotic agents include: the



Volutella blight on a boxwood plant.

misapplication of pesticides (either by contact injury or translocation), ozone injury, sulfur dioxide pollution, fluoride injury and salt damage. Typical symptoms of chemical agents include patterned tip and edge burn, interveinal necrosis and loss of older leaves.

'It's often wiser to sacrifice one [plant] to save many.'

Symptoms. Buckley says, are plant abnormalities. "We use symptoms as one of the cues to diagnose a disease, but in many cases they are a deception so we need more cues," he notes.

Typical symptoms of disease are: leaf spot, blight, dieback, chewed leaves, wilt, distorted growth, stippling and abnormal color.

"**Signs** of disease are other visual cues that we can examine to determine the presence of disease," says Buckley. They include: fruiting bodies, resting structures, mycelium, bacterial ooze, eggs and/or cysts, chemical residues and cultural records like spray records and weather logs.

Diagnosis—The Cornell pathologist has a systematic approach to decision-making. His eight steps to diagnosing a disease, in order, are:

1) Identify the plant—To identify the plant, you must examine the entire plant and the plant community. Most living organisms are very specific to their hosts. Start at the top of the plant and identify each part individually. "You have to keep searching, and it's a difficult thing to do in the landscape," Buckley says. "It's often wiser to sacrifice one [plant] to save many."

2) Define the problem—To define the problem, you must determine the number of species affected. If it's a wide range, it's probably an abiotic problem.

3) Determine patterns—When determining patterns, you must identify both uniform and non-uniform patterns.

4) Delineate the progression of the symptom(s)—Progressive symptoms are generally caused by living organisms; non-progressive symptoms generally are not. "You have to be real careful, though," he adds.

5) Ask questions—Here are some key questions to ask, of either the client or the crew that works at the site. Communication is very important, Buckley notes: "What is the distribution of the problem? What are the site conditions? What kind of weather prior to symptoms appearing? What are cultural practices? What are the chemical inputs? When did the symptoms appear? What is the age of the plant?"

6) Observe typical symptoms and signs—Use all your senses to diagnose:

sight, smell, touch and hearing (ask questions).

7) Check references.

8) Sample and test.

Fungal diseases—Buckley observes that fungi cause 80 percent of all diseases. "Fungi growth generally starts at the central point and grows in circles," he says. "There is often a distinct line between healthy and non-healthy tissue, often with a colorful border. Tissues are often very dry. Look for the presense of fungal fruiting bodies, too."

Bacterial diseases—Bacteria cause a lot of leaf spots with "halos" (diffuse margins). The spots will be angular, irregular and water-soaked. Polysaccharide ooze and fishy or rotten odors are typical, too.

Virus diseases—They work on the cell level with the genetic make-up of the plant. They often cause ring spots, abnormal growth and abnormal color. Viruses need a way to spread, though, and in most cases it's a gnawing, sucking insect. One of the tactics to control virus diseases is to control the vectors.

Possible causes of nutrient deficiency in ornamental plants

SYMPTOM	POSSIBLE CAUSE
Chlorosis	
entire plant	nitrogen deficiency; high light
young leaves	poor soil aeration; salinity; iron or sulfur deficiency
older leaves	nitrogen or magnesium deficiency; overwatering; poor soil aeration
leaf margins	salinity; magnesium deficiency
intervenal	iron or manganese deficiency
irregular spots	cold temperature
Necrosis	
water-soaked areas	cold temperature
tips or margins	potassium deficiency (old leaves); boron toxicity (old leaves); salinity; temperature extremes; desiccation; low humidity; root damage
center of leaf	sun scorch; cold; nutrient toxicity
Leaf deformation	
leaves abnormally small	micronutrient deficiency; salinity; high light; root-bound or -damaged plants
petioles elongated	low light
holes in leaves	mechanical injury; slugs, snails; insects
new leaves stunted	manganese or other micronutrient deficiency; salinity; poor aeration; overwatering
Stem deformities	
rot at soil line	salinity; fertilizer placed against stem; overwatering; poor aeration
wilting	salinity; high temperature; desiccation; low humidity; low soil moisture; root damage
thin, spindly, weak	low light; crowding of plants
Root abnormalities	
slow development	salinity; soil temperature extremes; planted too deep; poor aeration; overwatering
poor/rotted roots	salinity; overwatering; poor aeration
Stunted plants	fertilizer extremes; nutrient deficiencies; extremes of light; overwatering; poor aeration; poor roots

Source: Pacific Coast Nurseryman and Garden Supply Dealer, May 1992

The bottom line: "If you don't know the answer, seek professional help," Buckley suggests. "Collect samples during the investigative process and submit them to your cooperative extension agent or a private testing lab. Quick-test kits are also excellent tools."

—Richard Buckley is a plant pathologist for Cook College, Rutgers University. The preceding information was given during a speech he gave at the New Jersey Turf Expo.

Weather can lead to damage of some shrubs

■ Wet weather is directly tied to the development of *Phytophthora cinnamomi*, a deadly fungus of yew or taxus plants, according to Jim Chatfield, an extension agent in Ohio.

Roller-coaster-type weather takes a toll on older shrubs, even if they planted in reasonably good sites, Chatfield observes.

"We've known for a long time that taxus can't tolerate wet soil. It must be planted in well-drained sites."

Phytophthora root rot symptoms include yellowing foliage, reduced growth, brown to brick-red root lesions and dieback of branches. The disease gradually cuts off the flow of water and nutrients in plants. Infected taxus usually decline slowly over onto three years before dying.

East of the Mississippi River, *Phytophthora cinnamomi* has been reported only in Ohio and Indiana.

"If you remove a taxus that appeared to have died from Phytophthora root rot, you might want to wait a while before replacing it," says plant pathologist Mike Ellis. "It's not a good idea to immediately replace a dead shrub where soil is heavy and wet and where disease is present."

Wet weather can also hurt yews by prompting harmful feeding on the shrubs' roots by black vine weevil grubs. Symptoms are similar to Phytophthora root rot.

More research is needed to determine the extent of the disease and of other taxus pests and disorders, Ellis says.

"The key here is to remember that Phytophthora can thrive in (wet) conditions," he concludes. "Under normal circumstances, it isn't as great a concern."

HOT TOPICS

2,4-D re-registration progressing slowly

A special Task Force's six-year testing effort should wrap up by year's end. Data shows no evidence linking the herbicide with ill health.

by Ron Hall,
Senior Editor

WASHINGTON—The widely-used herbicide 2,4-dichlorophenoxyacetic acid (2,4-D) is going to be around for a while longer, possibly a long while longer.

Although nobody on the 2,4-D Task Force (certainly nobody with the U.S. EPA) came right out and said so at a recent, one-day 2,4-D status briefing here, that's the feeling that the 65 participants left with at afternoon's end.

The reason for this guarded optimism is based on what researchers have found regarding 2,4-D.

More accurately, it's based on what they *haven't* found: 2,4-D produces no significant adverse effects to human health or the environment, emphasized Task Force researchers.

By year's end, the Task Force should complete tests required for the molecule's re-registration, according to Larry E. Hammond, chairman of the Task Force's Technical Committee. Testing is about 85 percent complete.

"Are we serious about this?" asks Hammond rhetorically. "Yes, we are. The cost for data development is going to be in the range of \$22 million."

Task Force members are: Agro-Gro, DowElanco, Nufarm U.S.A. and Rhone-Poulenc. They all produce 2,4-D. They're supporting three forms of the compound: 2,4-D acid, 2,4-D dimethylamine salt (SMAS) and 2,4-D ethylhexyl ester (2EHE).

The EPA is wading through the data. It will probably take the Agency until 1997 or 1998 to issue a Re-registration Eligibility Decision (RED) on 2,4-D, says Hammond.

Only then will the EPA begin looking at 2,4-D, product by product. That's because it is usually used in combination—especially on turf—with fertilizer or other herbicides.

In one form or another, 2,4-D is used by farmers, turfgrass managers, and more than a dozen other user groups (including homeowners) to control broadleaf weeds. Actually, its use on turfgrass is tiny compared to its use in crops such as wheat, corn and soybeans.



Larry Hammond, left, and William Mahlberg said EPA-mandated toxicological studies showed no problems with 2,4-D.

It's believed to be the most widely used herbicide in the world, and the third-most popular in the U.S. More than 45 million pounds of 2,4-D were applied in the United States last year alone. And its use is still growing, partly because of increased no-till (or low-till) farming, and partly because no weed resistance has yet been recorded for 2,4-D. Because of this, and because of cost, it's commonly combined with other herbicides.

Dr. Philip Szmedra, an agricultural economist with the USDA, says losing 2,4-D in field crops and fruit and nuts would cost U.S. farmers about \$1.1 billion a year, and banning all phenoxy herbicides would cost about \$1.4 billion. (A study in Canada estimated the loss there at \$500 million.)

The losses reflect factors such as reduced yields and the cost of alternative weed controls. Economic losses from turf and some other so-called minor uses aren't yet calculated, Szmedra says.

Cancer studies still draw fire

WASHINGTON—Dr. Rebecca Johnson thinks peoples' memories generally aren't accurate enough to drive cancer studies.

She came to that conclusion after re-examining a 1993 National Cancer Institute (NCI) Iowa/Minnesota Case Control study that suggested a link (albeit a weak link) between farmers' exposure to 2,4-D and non-Hodgkins lymphoma (NHL).

Johnson says studies relying so strongly on the memories of victims lend themselves to miscalculations. The

data becomes even more suspect when the memories of victims' families are relied upon. Relatives, in fact, tended to report more exposure to 2,4-D, than the cancer victims themselves had in earlier surveys.

Also, the records of cooperatives where farmers bought their pesticides often did not match up with the farmers' or their proxies' recollections of what products had been purchased and used. There was agreement only 60 percent of the time in the use of 2,4-D.

continued on page 32

TECHNICAL for Landscape Professionals REFERENCES



Interior Landscape Design

by Nelson Hammer, ASLA

LSM-BK-800\$65.00

This reference discusses the basic principles of interior landscape design and covers such topics as

planting beds, balcony plantings, cost estimation, natural and electric lighting, irrigation and more. Particularly useful to those in the field are five case studies which demonstrate design and construction processes for an interior landscape project. 288 pages, hardcover.



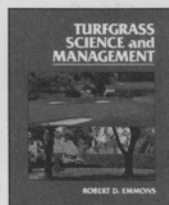
Landscape Architecture A Manual of Site Planning and Design

by John Ormsbee Simonds

LSM-BK-803\$73.00

Written for landscape architects, architects, planners

and engineers, this book features descriptions of proven procedures, includes useful charts, tables, checklists and teaching diagrams, and offers innovative ideas and fresh thoughts of direct application in the design studio, drafting room and field. 331 pages, hardcover.



Turfgrass Science and Management

by Robert D. Emmons

LSM-BK-805\$37.50

Intended for turfgrass managers and students, this text discusses the establishment and maintenance

practices used by successful turfgrass managers and reviews relevant scientific theory as well as practical management skills. 451 pages, hardcover.

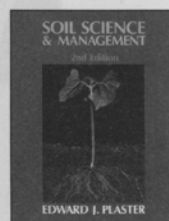


Landscaping Principles & Practices 4th edition

by Jack E. Ingels

LSM-BK-806\$29.95

This introductory text leads the landscaping student from the basic principles of landscape design and graphics, through methods of installation and maintenance, to the business methods of beginning the business, bidding and cost estimating. 401 pages, hardcover.



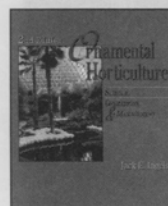
Soil Science & Management Second Edition

by Edward J. Plaster

LSM-BK-804\$39.95

This text introduces the reader to the soil and water resources

of the United States, presents soil science theory as it applies to soil use by the grower, shows how soil is used by farmers and horticulturists, and covers the basics of soil and water conservation. An instructor's guide, summaries of each chapter and review questions are provided. 514 pages, hardcover.



Ornamental Horticulture Science, Operations & Management 2nd Edition

by Jack E. Ingels

LSM-BK-807\$40.95

Offering a balanced study of ornamental horticulture as an applied science, a craft, a profession and a business, this introductory text reviews plant structure, the role of soil, the plant classification system, growth regulators, reproduction, and pests and their control. Floral design; the interior use of plants; landscape design, installation and maintenance; turf selection, establishment and maintenance; and techniques of plant propagation are also examined, along with the floriculture, nursery and landscape industries, greenhouse and nursery production techniques and business considerations. 554 pages, hardcover.



Landscape Plants Their identification, Culture, and Use

by Ferrell M. Bridwell

LSM-BK-808\$49.95

The text is invaluable in assisting students, nursery workers, landscape architects, educators and others in identifying landscape plants. More than 450 ground covers, vines, shrubs, trees, grasses, palms and bamboos are depicted in full color with physical descriptions, geographic growth zone information, pest problem data and other details. 560 pages, hardcover.



Managing Turfgrass Pests

by Thomas L. Watschke, Peter H. Demoenen & David J. Shetlar

LSM-BK-766\$69.95

Emphasizing the philosophy of minimizing pests through well-defined and organized cultural practices, this book contains specific recommendations for a number of pests. Turfgrass weeds, diseases, insects, invertebrates and vertebrates are described and cultural, biological, mechanical and chemical solutions are provided. 361 pages, hardcover.



Urban Trees A Guide for Selection, Maintenance, and Master Planning

by Leonard J. Phillips, Jr.

LSM-BK-801\$37.00

This complete guide to urban tree care and planning covers

everything from new methodologies for cataloging existing trees to selecting the right species for your climate and site to running a high-power, cost-saving maintenance program and much more. Landscape architects, urban foresters, municipal administrators and students will learn how to develop effective municipal street tree master plans, take street tree inventory, choose the best trees for a community, care for trees and promote public awareness. 273 pages, hardcover.



The Process of Landscape Design

by Seamus W. Filor

LSM-BK-802\$40.00

Five completed projects

illustrate the general principles followed by landscape architects in developing designs from concept to implementation. Each case includes a summary of the principles which generated the design; a study of the architect's response to special conditions; a description of the stages of development; and an assessment of performance since completion. The five projects cover: landscape planning, urban regeneration, new town development, university campus and recreational development. 160 pages, hardcover.

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Dr. Rebecca Johnson doesn't think peoples' memories provide accurate data for 2,4-D/illness studies.

CANCER from page 30

(Agreement 50 percent of the time would occur just by guessing.)

"A lot of people reported using 2,4-D when, in fact, they had not used it," she says.

"We shouldn't be doing the types of studies we have been doing where we're relying on people to recall from memory what pesticides they used over a number of years," she said. Johnson is assistant professor in the Department of Occupational and Environmental Health at the University of Minnesota.

Dow epidemiologist Dr. Geary W. Olsen is also critical of three prior NCI studies (Kansas, then Nebraska, and finally farm workers in Iowa/Minnesota), and also a canine study that linked 2,4-D exposure with cancers.

The findings of these studies—all relying on peoples' or proxies' memories—are contradicted by a Canadian study. That study followed the health of some Canadian farmers and their exposures from 1970 to 1985. Actually, it showed the farmers' cancer death rate being lower than the general population, notes Olsen.

The link between pesticides and farmer health is being investigated by yet another NCI study, the Agricultural Health Study, that will monitor the health of about 110,000 farmers and their families in North Carolina and Iowa for the next 10 years.

"I think it will really dominate what's going to happen policy-wise with pesticides and epidemiology," says Olsen.

—R.H.

Rave reviews for sterilized manure soil amendment

by James E. Guyette,
Contributing Editor

JACKSON, Ohio—A soil amendment made from steam-sterilized horse manure is drawing praise from landscapers.

Known as Nea's Organic Compost or Nea's Posey Power (depending on the packaging), the manure first decomposes outdoors for 30 days. Weed seeds are then eliminated by steam sterilization. Additives include brewer's grain, gypsum, peat moss and lime.

The 80-day composting process is monitored by state-of-the-art computerized controls, according to Nea Henry, who is president of the southeastern Ohio firm.

"We came up with our own entire process, and it worked," she recalls. "The procedures are very exact."

The product, which contains no chemicals, has a number of applications, according to Henry:

- it rebuilds worn out soil;
- acts as a fertilizer;
- holds moisture during drought conditions;
- adds micro-organisms;
- breaks down clay soil;
- adds organic humus and builds up sandy soil.

At Ohio University in Athens, it was used to rebuild the athletic fields and golf greens. The product also was applied as a topdressing for new and established lawns and flower beds, plus it was used as a mulch around shrubs in the spring.

"We would highly recommend Nea's Organic Compost to anyone in this field," says Daniel H. Stright, OU's director of grounds maintenance.

Nea's "improves the structure of the soil remarkably and allows for better water-holding capacity and better air penetration in the clay soils we have in this area," he notes.

"This organic compost has the added value of being weed-free, and it is much cheaper than oak bark mulch," says Stright. He adds that the product is neutral as opposed to the bark's acid qualities.

"We have had many favorable comments on the fields, lawns and flower beds where the material has

been applied," Stright notes.

"Another great feature is the moisture-holding capacity," says Dave Junka, curator of the Franklin Park Conservatory and Garden Center in Columbus. "The same plants in beds without the compost required much more frequent waterings," he reports.

The Ohio Department of Natural Resources uses the mixture for its wild-flower program and for reclaiming old strip mines. The AmeriFlora exhibit in Columbus added Nea's to its blended soils.

Pricing varies according to market-place. (A topdressing spreader custom-designed for the product sells for \$250.) Henry will deliver via dump truck and semi-load within 400 miles. Otherwise it's shipped in 30-pound bags.

Nea's compost was born in the mushroom industry. When she used the product on her father's crop, the yield was 6 lbs./sq.ft. when the national average for mushroom growing was just 1.79 lbs./sq.ft. Campbell's Soup was so impressed that it bought the company, but Henry kept the "super mix" patent.

It's hard to think of horse manure as high tech, but the conversion process also reduces the smell. The air used during processing is filtered just like in hospitals. The humidity, barometric pressure and temperature is continuously controlled.

For more information: NEA Inc., P.O. Box 706, Jackson, OH 45640; phone (614) 286-1322.



Nea Henry says precision measurement plays a part in every batch of Posey Power compost.



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Free movies and popcorn from LM at this year's Expo

LOUISVILLE, Ky.—The Premiere Video Theatre, sponsored by LANDSCAPE MANAGEMENT magazine, promises to be a big draw at this year's Expo '95 here July 30-Aug. 1.

The video theater will provide an opportunity for visitors to the show to see the latest innovations of selected exhibitors in a movie theater setting. Training and promotional videos will be shown in the East Hall of the Kentucky Exposition Center, and complimentary popcorn will be available.

Expo is sponsored annually by the Outdoor Power Equipment Institute. About 25,000 dealers, retailers, commercial end-users (including those in the green industry), rental equipment dealers, distributors, mass merchants, manufacturers' reps and exhibitors are expected to visit. They will come from the U.S. and 60 other countries.

Indoor exhibits are expected to cover 250,000 sq. ft. with an additional 560,000 sq. ft. of outdoor demonstration area.

Products on display will include powered and non-powered outdoor products for consumer, commercial and rental use.

Featured speaker is football legend Paul

Hornung, at the Early Bird Buffet Dinner, Saturday, July 29. Tickets to the buffet are \$28.50 each. To order, call (202) 775-8605 or write OPEAA, 1726 M St., NW, Washington, DC 20036.

Also available are tickets to Monday night's dinner concert starring Lorrie

INTERNATIONAL LAWN, GARDEN & POWER EQUIPMENT EXPO95 JULY 30 – AUGUST 1, 1995

Morgan and Three Dog Night. They cost \$35 per person.

Pre-registration to Expo '95 is free, but on-site registration is \$20. Phone (800) 558-8767. In Kentucky or outside of the U.S., phone (502) 562-1962. Fax number is (502) 562-1970.

An abbreviated schedule of events:

Saturday, July 29

3-5 p.m. - TSDA panel discussion
4:30-6 p.m. - Exhibitor reception
6-9 p.m. - Early Bird Buffet (Paul Hornung)

Sunday, July 30

8:30-10:30 a.m. and 2-4 p.m. - REAP seminars
11 a.m.-5 p.m. - Broadmoor Gardens & Conservatory tour
1-5 p.m. - Kentucky Derby Museum tour
2-3:30 p.m. - PLUS seminar
4-5:15 p.m. - International seminar
5-6:30 p.m. - Reception for exporters and international visitors

Monday, July 31

8-8:30 a.m. - Continental breakfast
8-10:30 a.m. and 2:30-4 p.m. - Free seminars
9 a.m.-4 p.m. - Shakertown tour
11 a.m.-2 p.m. - Star of Louisville luncheon cruise
Noon-2:30 p.m. - REAP seminars
2-2:30 p.m. - PLUS seminar
3-5 p.m. - NEADA's OPE Dealer Council meeting
4 p.m. - Treasure Hunt drawing
4-5:15 p.m. - Reception for rental seminar attendees
4:45-5 p.m. - Ultimate Garden Tool Giveaway
6-9:30 p.m. Expo dinner and Lorrie Morgan & Three Dog Night concert

Tuesday, Aug. 1

8-8:30 a.m. - Seminar breakfast
8:30-10:30 a.m. - PLUS seminars
8:30-10:30 a.m. - REAP seminars
9-11 a.m. - Free seminars: "Gardening in America" and "The 1990s Gardening Boom" study results

Oklahoma explosion causes fertilizer frenzy

by Terry McIver,
Managing Editor

WASHINGTON—The Federal Building explosion in Oklahoma City on April 19 resulted in questions being asked about the content and availability of "fertilizer," after it was reported that a truck full of the stuff was used in the explosion.

"You wouldn't believe it," says Ron Phillips, spokesman for The Fertilizer Institute, to describe the number of calls and questions he's received.

Much of Phillips' time has been used to explain the difference between the fertilizer that can be used in explosive charges and the kind that's used in agriculture.

According to a fact sheet distributed by the Institute, the chemical agent triggered in such explosions is ammonium nitrate, which is produced by chemically combining ammonia with nitric acid, followed by

a refining process.

As fertilizer (usually at a rate of 34-0-0), ammonium nitrate is used on wheat, grasses and pastureland, and in no-till cropping systems in the southeastern U.S.

"Fertilizer grade ammonium nitrate is a safe and stable product that will not explode when exposed to heat or fire," explains the Institute. "To use it in an explosive device requires exact mixing with explosive materials in a confined space by persons trained in chemical explosives who are intent on making an explosive device."

Phillips emphasizes that "ammonium nitrate (itself) is not explosive."

The type of fertilizer used in the Oklahoma City explosion is made from industrial grade ammonium nitrate, a low-density product that's produced specifically for blasting purposes, and is, in fact, classified as a blasting agent by the

U.S. Department of Transportation. To be rendered explosive, it must be "sensitized" with fuel oil or other carbon-rich material, and then detonated by heat shock or friction from a booster charge.

According to Phillips, counter-terrorism bills currently under consideration by Congress have required the Bureau of Alcohol, Tobacco and Firearms to try to find ways to make such a common chemical unusable in explosions. The ATF also must determine what kind of controls can and/or should be placed on the sale of ammonium nitrate, one of 60 known oxidizers (chemicals or elements which support combustion).

"We support that study and are cooperating with it," says Phillips.

For more information, contact The Fertilizer Institute at 501 Second St. NE, Washington, DC 20002, or call (202) 675-8250.

SUPPLIERS

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■ Prices on Bov-A-Mura liquid organic fertilizer will be going down, thanks to **PBI/Gordon's** efforts to build a plant here in the United States. Bov-A-Mura was previously only available by importing from England. "Prices will definitely be going down," says PBI's **Gary Custis**. "All the savings will be passed on to the end-user." The new plant will be constructed in Pittsburg, Kansas, one hour south of PBI/Gordon's Kansas City headquarters.

■ **The Scotts Company**, the official turf care sponsor for the U.S. Youth Soccer Association, will award \$25,000 in college scholarships to U.S.Y.S.A. high school seniors. It will also provide a program to help the association's member organizations improve and maintain their soccer fields.

■ **Tom Cook** of Oregon State University has been honored with **Seed Research of Oregon's** "Research Excellence" award. **Jim Reinertson** of Dedham Country and Polo Club in Dedham, Mass. won SRO's "Golf Course Superintendent of the Year" award. Also, SRO is now the official seed supplier for **SMA Services Corp.**, a subsidiary of the Stadium Managers Association.

■ **Tony Gustaitis**, golf superintendent at Whitemarsh Valley Country Club in Lafayette Hill, Pa., won an expense-paid trip for two to the birthplace of golf—Scotland—from **American Cyanamid** earlier this year.

■ **Sandoz Agro** has consolidated its Zoecon product line under the Sandoz Agro name. "[This] is a part of our strategy to become more aggressive and progressive in specialty markets," says **Carl Tanner**, director of marketing for specialty business.

■ **Pennington Seed Co.** recently received \$250,000 from the USDA for damages resulting from illegal actions against the company by the government six years. Because of a government order, Pennington had to destroy 200,000 pounds of its seed. It sought compensation from the government, which refused to pay.

■ **Parker Sweeper's** manufacturing facility has moved from Springfield, Ohio, to Hampshire, Ill., a suburb of Chicago. The new building has 200,000 square feet of manufacturing space, with plans for at least 50,000 more square feet.

■ **Scott Wanzor** of Duluth, Ga., has joined **Aquatrols** as southeast territory sales manager. The University of Georgia grad has more than 18 years of experience in the turf and ornamental market.

■ **Snapper Power Equipment** is introducing a limited number of products into 31 Home Depot stores in Texas. "This move into high-end specialty retailing is just one more step for Snapper in its continuing growth course," says Snapper president and CEO **Jerry Schewiner**.

■ **JaiTire Industries** and the City of Lancaster received the League of California Cities' Helen Putnam Award for Excellence for implementing Rebound Soil Amendment into the city's new athletic fields.

■ **Jim Crockett** is new to the **W.A. Cleary Chemical Corp.** as market development manager, horticulture products. The former ChemLawn employee holds a master of science degree from Auburn University.

■ **Winners of the Rain Bird Golf Division Freedom System Giveaway Contest:** Manuel Delgado, Liano, Calif.; Robert K. Ellis, Vero Beach, Fla.; Doug Falk, Litchfield, Mo.; Howard Hamaoa, Aiea, Hawaii; Larry C. Handle, Paducah, Ky.; Dan Higgins, Winchester, Mass.

■ A group headed by **Dick Cornelius** of Fort Collins, Colo. is new owner of **BlueBird International**, a lawn care equipment manufacturer. He bought the company from **Doug and Bev Zehrung**.

■ **Ernest E. Cook**, co-founder of Hypro Corp., passed away on April 7. He and **Harry J. Sadler** had started the company in 1947 and resigned in 1966.

■ **Garden Way's** new director of product management and research is **Gregory E. Best**; new product managers are **Kevin J. Connolly**, **Paul F. Denimarck** and **Brian E. Miller**; new associate product managers are **Denis J. Bedard** and **Thomas J. Klein**.

INFO-CENTER

Videos and literature for the green industry

EVERYTHING YOU ALWAYS WANT-ED TO KNOW ABOUT...horticulture is available from Timber Press. Its 1995 catalog includes "Trees & Shrubs for Temperate Climates," "Maples of the World," "Hardy Geraniums," "Plants for Groundcover," "Dictionary of Plant Names," and many, many more. To receive the catalog, phone (800) 327-5680.

URBAN PEST MANAGEMENT...The 1995 "Illinois Urban Pest Management Handbook" is now available from the University of Illinois, 67-UR Mumford Hall,

1301 W. Gregory, Dr., Urbana, IL 61801. Included are tips for insect, weed and disease control, pesticide applicator equipment and calibration references. Cost is \$10. You may also phone in your order to (217) 333-2007.

DESIGN PRODUCTS...For a wide range of products used in landscape design, you'll want a copy of **LAfile '95**. The file and binder is available for \$39.95 plus shipping and handling. It is indexed by product, trade name and company name, and contains information on CAD

and a Buyers Guide. To order, write to: **LAfile**, 4401 Connecticut Ave., NW, Fifth Floor, Washington, DC 20008-2369 or phone (202) 686-1001.

CREATIVE FINANCE...With the book "How to Finance a Growing Business," you get usable tips from **Royce Diener**, former CEO of a \$3.1 billion international corporation. Information covered includes: obtaining capital to start a new venture, calculating your need for working and growth capital, borrowing many times the company's worth, and using financial leverage. Price is \$24.95 for the 330-page trade paperback from Merritt Publishing and Nolo Press. To order: write Nolo Press, 1661 Ninth St., Santa Monica, CA 90406-0955 or phone (800) 638-7597.

continued on page 36

INFO-CENTER from page 35

PESTICIDE REFERENCE..."The User's Reference Guide to Pesticides" may be the handiest book you'll ever buy. Ag and hort products registered in the U.S. are listed by generic name, followed by the different formulations with their tank-mix, adjuvant and compatibility recommendations. The 200-page reference is priced at \$27.95 and available by writing Thomson Publications, P.O. Box 9335, Fresno, CA 93791 or phoning (209) 435-2163.

WAGES AND BENEFITS...Results of a survey on landscape wages and benefits conducted by the Associated Landscape Contractors of America is now available. For \$45 (\$25 for ALCA members), you can order a book containing all the survey results. Mail your check (plus \$3.50 shipping & handling) to: ALCA, 12200 Sunrise Valley Dr., Suite 150, Reston, VA 22091 or phone (703) 620-6363.

THE EARTH IS FINE!...For a mere \$2.50, you can order a new poster titled "The Earth is Fine!" from the National Anxiety Center, Box 40, Maplewood, NJ 07040. The poster boasts that it is "a guide to bogus environmental claims" from the ozone layer to pesticides, to clean water and endangered species. It also notes that "the EPA is now responsible for generating one-third of all federal regulations."

COMPOST STUFF...The "1995 Compost Organics Buyers Guide" is now available. It is designed to be used by lawn and landscape contractors, garden centers and nursery operators. Contents include information on equipment sources, consulting firms, extension offices, state regulations, site selection, and health and safety precautions. To order, send \$19.95 to Composting News/Buyers Guide, 8383 Mentor Ave., Suite 102, Mentor, OH 44060. For more information, call (216) 255-1454.

NOTES FROM ALL OVER

Now you can become a member

BELTSVILLE, Md.—The National Turfgrass Evaluation Program (NTEP) is now charging a \$30 annual membership fee. Members receive all NTEP reports produced in 1995. Exempt from the fee are university turfgrass faculty members and seed companies that enter grasses into NTEP tests.

Membership fees may be tax-deductible.

For more information, phone national program coordinator Kevin Morris at (301) 504-5125.

ALCA names Landscape Service winner

RESTON, Va.—Ron Kujawa of Kujawa Enterprises Inc., Cudahy, Wisc., won the prestigious Landscape Service Award from the Associated Landscape Contractors of America. He was recognized for his extensive service to the green industry via his ALCA leadership positions, for his example as head of a successful landscape contracting company, and for being a co-founder and past president of the Green Industry Exposition.

KEI has been in business since 1970, and has been an ALCA member since 1972.

Environmental buys Moss

HOUSTON—Environmental Landscape Services is new owner of the Austin Division of Moss Landscaping.

"With this purchase, we now have 18 trucks, tons of equipment, and 77 professional people with many years of Austin Landscape know-how," notes Environmental president Charles Racusin, who is a member of LANDSCAPE MANAGEMENT's Editorial Advisory Panel.

A.C.R.T. promotes four

KENT, Ohio—Richard E. Abbott has been promoted from president to chairman of the board and chief executive officer of A.C.R.T., an urban and utility forestry firm. Dr. Elizabeth L. Buchanan was promoted to president and chief operating officer and Jeff A. Saltzman was promoted to executive vice president. Vice president Dr. Jay Abercrombie takes over as head of the Biological Services Department from Dr. Buchanan.

GREEN INDUSTRY EVENTS

JULY

12: Landscape and Nursery IPM Workshop, Stockbridge, Mass. Phone: Kathleen Carroll, (413) 545-0895.

13: Southern Illinois Nursery Association Summer Field Day, H.E. Nursery, Litchfield, Ill. Phone: Marge Clayton, (618) 675-3478.

16-19: Canadian Urban Forests Conference, Windsor, Ontario, Canada. Phone: (519) 255-6270.

19-20: Midwest Grounds Management Conference, Normal, Ill. Phone: Mike O'Grady, (309) 438-2032.

21-22: Midwest Grounds Maintenance Conference, Illinois State Univ., Normal, Ill. Phone: Professional Grounds Management Society, (410) 584-9756.

21-22: Sports Turf Association Annual Field Day, Globe Park, Hamilton, Ontario, Canada. Phone: David Smith, (519) 763-9431.

23-27: Association of American Seed Control Officials annual meeting, Hotel Marriott, East Lansing, Mich. Phone: Ken Rauscher, (517) 373-9753.

25: Midwest Regional Turf Field Day, West Lafayette, Ind. Phone: Bev Bratton, (317) 494-8039.

25-27: Penn Allied Nursery Trade Show, Fort Washington (Pa.) Expo Center. Phone: (800) 898-3411.

26: Georgia Turfgrass Field Day, Georgia Experiment Station, Griffin, Ga. Phone: Georgia Turfgrass Association, (404) 975-4123.

26-28: FNGA/ALCA Conference, Hyatt Hotel, Orlando, Fla. Phone: Lynne Rue at Florida Nurserymen and Growers Association, (407) 345-8137.

26-28: TPI Summer Convention, Omaha, Neb. Phone: Turfgrass Producers International, (708) 705-9898.

26-29: AAN/MNLA Convention & Trade Show, Minneapolis, Minn. Phone: American Association of Nurserymen, (202) 789-2900 or Minnesota Nursery & Landscape Association, (612) 633-4987.

28: ALCA Masters in Management seminar, Harbor Court Hotel, Baltimore. Phone: Elise Lindsey, Associated Landscape Contractors of America, (703) 620-6363.

30-Aug. 1: International Lawn, Garden & Power Equipment Expo (Expo 95), Kentucky Exposition Center, Louisville, Ky. Phone: (800) 558-8767.

30-Aug. 1: Texas Turfgrass Summer Conference, Corpus Christi. Phone: Shirley Doble, (409) 693-1656.

We'll keep the pesticide industry from becoming a victim of air pollution.



Ahh, television news in the 90s.

Tabloid journalism has sneaked its way onto the airwaves. And the pursuit of facts seems to have been replaced by the pursuit of ratings.

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facturers, formulators and distributors from all areas of the specialty pesticide business.

In addition to promoting environmental stewardship, RISE makes sure the media doesn't report misinformation as fact.

We also hold editorial meetings with media decision-makers. And respond to negative articles or broadcasts that are incorrect. We've been very successful so far. Not suprising considering what

our most powerful weapon is. The truth.

Of course, there's still a lot more work to do. But rest assured, RISE is up to the task.

Because we know if we eliminate air pollution, the pesticide industry can breathe a lot easier.

Responsible Industry for a Sound Environment

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Washington, D.C. 20005. ©1995 RISE RISE-0047

PRODUCT REVIEW

Borders and curbs are easy with new forming equipment

Concrete borders and curbs can now be added to a landscape quickly and easily with Creative Curb.

The self-propelled machine—in electric or gasoline models—extrudes durable concrete borders that are permanent and freeze/thaw tolerant.

Installation is simple. No forms are needed, which reduces displacement of the existing landscape.

Borders will not rot, rust or become discolored, and colors can be added to the mix.

The average cost of materials is about 40 cents per foot. The company says the edging is as durable as conventional curbs. The concrete sets quickly, to reduce or eliminate the finishing process.

The machine has a production capability of more than 100 feet of edging per hour.

Circle No. 192 on Reader Inquiry Card



Buy hydraulic dumper now to receive a free cab protector from company



E-Z Dumper, the original hydraulic dump unit designed for pick-up trucks, is offering a free cab protector with every E-Z Dumper unit purchased from April 10 through July 15.

The E-Z Dumper holds up to 4000 lbs. of material and unloads in seconds, eliminating the long hours and hard work associated with manual unloading.

Valley Manufacturing says the E-Z Dumper is easy to install. The dumper slides into the truck bed, and is secured with bolts to holes already in the truck body.

The company reports positive buyer responses to the dumper.

Circle No. 193 on Reader Inquiry Card

Multi-purpose unit chips, shreds and vacuums—easily

The new Little Patriot is a combination chipper/shredder/vacuum powered by a 10 hp Tecumseh engine with cast iron sleeve.

The new Patriot was tested for durability by putting numerous 2x4s down the shredder hopper.

The unit is safety certified, and meets or beats every ANSI standard.

Patriot's special system achieves precise cutting angles for the knives as they are fastened to the rotor. A newly-patented process "seats" the knife and supports it



when chipping especially hard woods.

The new technology reduces vibration, and increases operator comfort and rotor life.

Patriot's forked hammer design covers 95 percent of the surface area leading into the grinder for safer, more efficient shredding. The Y-shaped hammer shreds quickly, and pulls in waste with less kick-back.

The front leg transfers vibrations into the ground, eliminating "walking" when the machine operates on harder surfaces.

Circle No. 194 on Reader Inquiry Card

CREW CUT.



From its heavy-gauge steel construction to its wide, three-spindle deck, the **Mow'n Machine™** mower is built for serious commercial lawn care. Its zero turning radius lets you glide around the tightest obstacles. And the low, out-front deck makes getting under shrubs and trees a

breeze. Add a host of mowing and mulching deck options and you have the ultimate productivity tool for turf and landscape maintenance. Fact is, if your crew is equipped with anything less, they're just not cutting it.

Call **800 31WOODS** for the Woods Mow'n Machine dealer nearest you.

Oregon, IL
815-732-2141

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Circle No. 125 on Reader Inquiry Card

Aerators made for landscape contractors

The Toro Company has introduced the 880 and 680 Aerator, new walk-behind units designed specifically for landscape contractors.

Both units are durable, maneuverable and perform aeration jobs essential to landscape work.

The 880 unit (shown at right) incorporates an ergonomical design for greater operator comfort during extended use.

The aerators are roll-type units. The 680 uses open tines that spade the turf, while the 880 features a mechanical coring technique similar to larger commercial

aerators. Unlike competitors' units, the 880 has a unique operator-friendly design that reduces the amount of downward force required to engage the coring tines.

These aerators are built to withstand the rigors of frequent and long use, while remaining maintenance-free.

Features include heavy-duty handles and engine guards, and extra sturdy lift mechanisms and frames. For extended life and optimum performance over various terrain, the 880 tine shaft uses sealed bearings rather than bushings.

Circle No. 194 on Reader Inquiry Card



Fertilizer injectors for drip/subsurface sprinkler system

Strong Injectors now sells pre-set, automatic proportioning fertilizer injectors.

The units are available in amounts as small as one pint up to 30 gallons.

The Add-It fertilizer injector is ideal for commercial, residential and agricultural installations. The injector allows the user to distribute fertilizer uniformly throughout the irrigation system, and may be used with drip/subsurface or conventional

sprinkler irrigation systems.

Add-It injectors can be used with any liquid fertilizer, and can be used with totally water soluble dry fertilizers.

A primary advantage, according to the company, is that there is no pressure loss through the injector, and there are no moving parts to wear out. They can be placed before a manifold of valves, under constant line pressure, or after individual valves.

Circle No. 195 on Reader Inquiry Card

Battery-powered sweeper built with dust control

Eagle Power Products now markets the TK1000, a very mobile, battery powered riding sweeper.

The TK1000 is built with a highly effective dust control system, and a large capacity hopper. The sweeper covers a one-yard swath, and the company reports that the TK-1000 is good for inside sweeping, as its tight turning radius allows for easy maneuvering around obstacles.

Top speed is 5 mph.

Circle No. 203 on Reader Inquiry Card

Herbicide now labeled for more product per acre

Sandoz Agro has issued a new label for its Barricade pre-emergence herbicide to give landscape managers better timing and application flexibility.

Barricade is now labeled to allow more annual product per acre—2.3 lbs—either as a single or split application.

Barricade provides season-long control of annual grasses and certain broadleaf weeds, but is not to be used on golf course putting greens.

The product is also labeled for use on most established ornamental trees shrubs and flowers.

Tank mixing with other registered turf herbicides is allowed, in states where the tank mix products are registered for the application site and the turf species listed on the product label.

Barricade controls susceptible weeds by inhibiting weed seed germination and root development.

Circle No. 196 on Reader Inquiry Card

Aerator attachment adapts to tractor, engine models

The new BCS 32-inch core aerator attachment fits BCS tractor models 605, 737, 830, and 850; powered by 8 hp, 10 hp and 12.5 hp commercial grade engines.

Using the attachment converts your BCS machine into a 32-inch core aerator for commercial or residential aeration.

According to the company, the extra wide aerator turns large jobs into smaller tasks, saving valuable operator time.

The company says operators can easily mount other available attachments, including:

- 26-inch or 30-inch rear tine tillers;
- 38-inch lawn mowers;
- 30-inch heavy duty rotary mowers;
- sickle bar mowers;
- snow throwers;
- chipper/shredders;
- 40-inch power sweeper.

Circle No. 197 on Reader Inquiry Card

New fungicide twin-pack expands control options

AgrEvo's new fungicide twin pack recently received label approval from the Environmental Protection Agency.

Prostar Plus is a twin-pack of two independently registered products—Prostar 50WP and Bayleton 50 Turf and Ornamental Fungicide—for control of brown patch, dollar spot and 17 other turf diseases.

The key to the twin-pack's effectiveness is a synergism which dramatically increases the length of brown patch control. Prostar has preventive and curative control of brown patch.

The combination of the two products provides a broader spectrum of disease control, and brown patch control is superior to that achieved by using either product separately.

Residual control by using the twin-pack increases from 14-21 days to 21-28 days.

The twin-pack covers 12,000 sq.ft. of turf at the normal usage rate.

Circle No. 198 on Reader Inquiry Card

Louvered decks, fence railings add style, privacy to outdoor lounging

The new LouveRail Mechanism from LouveRail Enterprises allows 180-degree rotation of louvers in a fence or deck railing to permit control of wind flow, sunlight, privacy and view.

The louvers operate as any standard louver. Users can simultaneously adjust manually or by remote control.

LouveRail can be used with wood vinyl or other materials.

The mechanism can easily be installed, and is guaranteed for life in any climate. LouveRail can be used to build a flexible deck railing, fence, overhead patio canopy, outside shower stall, hot tub enclosure and more.

Circle No. 199 on Reader Inquiry Card



6-station irrigation control easy to program, compact

Hardie Irrigation has introduced the new Slim Dial irrigation controller, which features an attractive slim-line cabinet and easy programming.



The economical six-station, dual-program controller was designed to fit the requirements of most residential applications. It offers the ultimate in programming simplicity with a new Guided Programming feature that leads the user through the process in steps.

Other features include a durable plastic case, a wiring skirt, conduit adaptor and automatic or manual watering options.

Circle No. 200 on Reader Inquiry Card

New rates approved for Dutch elm/oak wilt control

The Environmental Protection Agency has registered new, higher rates for Ciba's Alamo fungicide, for use in pressurized injection equipment when treating for oak wilt and Dutch elm disease.

The company reports that the product is even more effective than before.

For preventive treatment, six ml. of Alamo is directed, and a 10 ml. rate is recommended for curative treatments.

Oak wilt and Dutch elm disease fungi infect and, eventually, plug the vascular systems of trees. In effect, the tree is starved, as water and nutrients are not distributed throughout the roots, trunk branches and leaves.

Alamo controls disease systemically, and prevents vascular plugging. The company says the product is more effective when used before symptoms appear, to keep the disease from doing any damage.

Alamo may also be applied to prolong the life of trees already infected with as much as 20 percent crown loss.

Circle No. 201 on Reader Inquiry Card

All-in-one deep-drill greens aerifier is easy on turf

The Floyd McKay deep-drill unit bores up to 10-inches deep, but it never puts more than nine lbs./sq.in. of pressure on the green.

It penetrates the hard pan, increases root depth and allows for better percolation.

Greens are completely healed in two to four days.

The aerifier's rotating carbide-tipped bits relieve subsurface stress but do not destroy the existing capillary system or stress the existing root system, often caused by lifting the turf mat.

The unit has been redesigned with a dramatically increased drilling speed. It leaves no wheel tracks or dimpled holes, and requires less top dressing for greens after drilling. No separate tractor is required for this all-in-one unit.

The company says the aerifier can be used on tee boxes and fairways.

Circle No. 202 on Reader Inquiry Card

Flexible, durable border marker easy to install

CPC Company now markets the Re-Flex border marker, a flexible, reflecting pole in a light-duty and heavy-duty model.

The heavy duty border marker will handle most direct drive-overs. The marker flexes on impact and returns to an upright position, which reduces replacement or repair costs.

The Re-Flex marker is covered with high-quality soft rubber, which eliminates scratching of objects with which it comes into contact.

The border marker is available in two lengths. When installed, the markers stand 24 and 36 inches above ground.

Circle No. 203 on Reader Inquiry Card

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Circle No. 120 on Reader Inquiry Card

Agricultural equipment company enters industry



The Bush Hog company has applied its experience as a manufacturer of agricultural equipment to the green industry. The Bush Hog Zero Turn Mower is now available, with many user-friendly features.

The controls are easy to operate, and are located right beside the driver. There

are no gears to shift or pedals to push. Control levers do all the work, including maintaining speed, direction and braking.

The mower deck tilts up to 90-degrees for easy service and maintenance.

The mower is 10- to 12-inches shorter than competitive models, for better maneuverability around trees and obstacles.

There is a minimum 2- $\frac{3}{4}$ inches distance between the tractor and the deck for a complete cut in tight, Z-shaped maneuvers.

A low center of gravity is helpful when making hillside cuts, and a low profile lends better traction and stability.

Circle No. 204 on Reader Inquiry Card

New aerator features modular weight system

BlueBird's new TripleAire is called the only towable aerator with a modular weight system that incrementally raises the weight of the unit from 190 to 580 pounds for optimal soil penetration.

The TripleAire weight system also lets the operator raise and lower the aerator tines without leaving the controls.

The BlueBird has other helpful features including:

- three optional tines: coring spoons, spikes, and slicing blades;
- capacity to aerate 126,700 sq.ft. per

hour at 8 mph;

- independently mounted tine shafts to permit a differential action for greater maneuverability and turf protection in tight turns.

- tip wheels allow it to pass through narrow gates;

- can be towed by lawn tractors or riding mowers with 16 hp engines.

The BlueBird line also includes a self-propelled, walk-behind aerator, several models of lawn combers and a lawn seeder.

Circle No. 205 on Reader Inquiry Card



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Send blind box replies to: Landscape Management, 131 W. First St., Duluth, MN 55802 (Include box number in address.)

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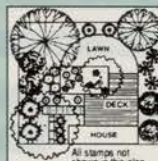
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The next ad closing for **LANDSCAPE MANAGEMENT** is
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Brower 7 gang hyd. lift \$4,800; Jacobson 7 gang hyd. ran lift \$6,800; Spin-Grinder, Supreme leader, also does relief grinds and bedknives \$6,500; and Toro GM-3 Greens mower \$1,300. Call (215)598-7155. 6/95

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BUCKET TRUCKS: Straight Stick, Corner Mount and Knuckle Boom Cranes. Brush Chippers: New Morbark Disc and Drum Style. New Rayco Stump grinders. Best prices anywhere. Used Chippers: Asplundh, Morbark, etc. 2 to 8 usually in stock. Sprayers, Dumps, Stakes, Log Loaders, Crew Cab Chip Box Dumps, Railroad Trucks, 50 in stock. Sold as-is or reconditioned. We also buy your surplus equipment. Opdyke's, Hatfield (Philadelphia Area). 215-721-4444. 12/95

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BUCKET TRUCK: Hi Ranger 65', 57', 50'. Skyworkers with chip boxes. Asplundh bucket trucks with chip boxes. Asplundh brush chippers, Bean 55 gal. sprayers. Pete Mainka Enterprises, 633 Cecilia Drive, Pewaukee, WI 53072. 800-597-8283. 12/95

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MAINTENANCE MANAGERS & SUPERVISORS: One of the nation's largest and fastest growing full service landscape companies has an immediate need for experienced maintenance managers and superintendents, as well as entry level maintenance supervisors in the Midwest, Southwest, Mid-Atlantic, Northeast and Southeast states. The company seeks energetic, team oriented college graduates with proven leadership, communication and interpersonal skills. The company offers full-time positions, excellent advancement opportunities and exceptional compensation and benefits with an industry leader celebrating more than 50 years of uncompromising customer service. For immediate confidential consideration, please send or fax your resume to: The Brickman Group, Ltd., Corporate Office, 375 S. Flowers Mill Road, Langhorne, PA 19047, 215-757-9630, EOE 6/95

LANDSCAPE MANAGER: Firm with long term reputation for exceptional quality in need of an experienced manager for multiple crews involved in full service maintenance of high profile commercial accounts. If you know this business and joyfully approach work with integrity and a commitment to quality, please contact Environmental Landscape Services, 5190 Crestview Drive, Memphis, TN 38134 (901)382-9000. 6/95

GROW WITH US Rapidly growing, quality oriented landscape maint./const. Co. seeks territorial superintendents to oversee 6 to 8 landscape maintenance crews and provide customer relations and sales functions. Midwesterners pref'd. For confidential consideration, send resume with salary history to Panoramic Landscape Management Co., Human Resources, 1470 Industrial Dr., Itasca, IL 60143 (708)285-0300. 6/95

VIRGINIA TURFGRASS FARM/PRODUCTION SUPERVISOR POSITION Career-oriented individual with 3-5 years work experience in managing turfgrass production with knowledge of both warm season and cool season grasses. Turf management degree is desired, but not mandatory. Experienced in business management and "on-hands" production basics essential. This position requires the individual to be willing, able and result-oriented necessary to the planning and leading of the operation. Salary commensurate to experience. Benefits include 100% paid medical insurance and paid vacation leave. For more information, contact J. L. Kidwell (804)689-2863. 6/95

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MOVE UP IN THE GREENS INDUSTRY. Two year AAS degree program in Golf Course Superintending, Irrigation Management, Landscape Contracting and Park Supervision. Fully accredited, VA approved, expanded learning facilities, new equipment. Graduate placement assistance available. For information contact Golf Course Operations/Landscape Technology Department, Western Texas College, Snyder, TX 79549. 8/95

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103	120	137	154	171	188	205	222	239	256	273	290	307	324
104	121	138	155	172	189	206	223	240	257	274	291	308	325
105	122	139	156	173	190	207	224	241	258	275	292	309	326
106	123	140	157	174	191	208	225	242	259	276	293	310	327
107	124	141	158	175	192	209	226	243	260	277	294	311	328
108	125	142	159	176	193	210	227	244	261	278	295	312	329
109	126	143	160	177	194	211	228	245	262	279	296	313	330
110	127	144	161	178	195	212	229	246	263	280	297	314	331
111	128	145	162	179	196	213	230	247	264	281	298	315	332
112	129	146	163	180	197	214	231	248	265	282	299	316	333
113	130	147	164	181	198	215	232	249	266	283	300	317	334
114	131	148	165	182	199	216	233	250	267	284	301	318	335
115	132	149	166	183	200	217	234	251	268	285	302	319	336
116	133	150	167	184	201	218	235	252	269	286	303	320	337
117	134	151	168	185	202	219	236	253	270	287	304	321	338

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104	121	138	155	172	189	206	223	240	257	274	291	308	325
105	122	139	156	173	190	207	224	241	258	275	292	309	326
106	123	140	157	174	191	208	225	242	259	276	293	310	327
107	124	141	158	175	192	209	226	243	260	277	294	311	328
108	125	142	159	176	193	210	227	244	261	278	295	312	329
109	126	143	160	177	194	211	228	245	262	279	296	313	330
110	127	144	161	178	195	212	229	246	263	280	297	314	331
111	128	145	162	179	196	213	230	247	264	281	298	315	332
112	129	146	163	180	197	214	231	248	265	282	299	316	333
113	130	147	164	181	198	215	232	249	266	283	300	317	334
114	131	148	165	182	199	216	233	250	267	284	301	318	335
115	132	149	166	183	200	217	234	251	268	285	302	319	336
116	133	150	167	184	201	218	235	252	269	286	303	320	337
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- 01 ☐ 0005 Golf courses
02 ☐ 0010 Sports Complexes
03 ☐ 0015 Parks
04 ☐ 0025 Schools, colleges, & universities
05 ☐ Other type of facility (please specify) _____

B. Contractors/Service Companies/Consultants:

- 06 ☐ 0105 Landscape contractors (installation & maintenance)
07 ☐ 0110 Lawn care service companies
08 ☐ 0112 Custom chemical applicators
09 ☐ 0135 Extension agents/consultants for horticulture
10 ☐ Other contractor or service (please specify) _____

C. Suppliers:

- 11 ☐ 0205 Sod growers
12 ☐ Other supplier (specify) _____

Which of the following best describes your title:
(mark only one)

- 13 ☐ 10 EXECUTIVE/ADMINISTRATOR
14 ☐ 20 MANAGER/SUPERINTENDENT
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