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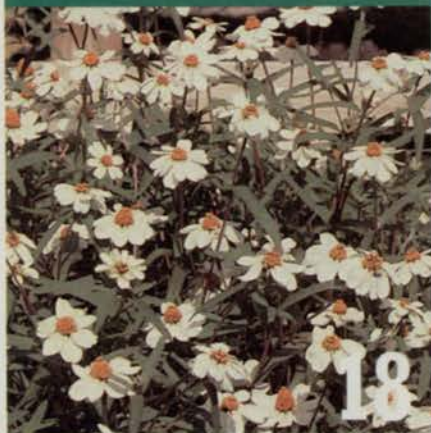
ZENECA Professional Products
LEADERSHIP THROUGH INNOVATION

Circle No. 124 on Reader Inquiry Card

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THE VOICE OF THE GREEN INDUSTRY

LANDSCAPE *management*



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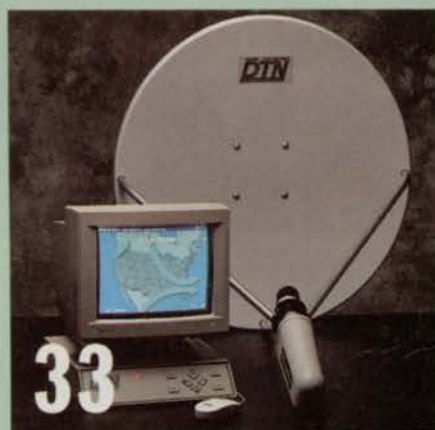
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MEANS BUSINESS

Circle No. 102 on Reader Inquiry Card

Trouble from fire ants goes well beyond their bite.



Terry McIver

TERRY McIVER
Editor-in-Chief

There is nothing good you can say about the fire ant. It's a tenacious, hungry, vicious little pest that's caused all kinds of control problems for our readers in warm climates.

I wasn't aware of the damage fire ants can cause until I started work on the news story found on page 12.

The fire ant has just about obliterated the quail and horned toad populations of Texas. The ants attack the eggs of these animals, and it's impossible for the parents to fight them off. Dottie

Woodson of the the Tarrant County Cooperative Extension, explains that the fire ants are so large in number and so menacing that they even attack and kill newborn calves.

During the great "storm surges" that hit Texas every so often after periods of dry weather, swarms of fire ants are seen floating down the Trinity River on leaves, logs and branches as the water carries them away.

But there are always more. Which brings us to

the related problem of diazinon contamination in the waste water of a couple dozen Texas cities.

Homeowners there are misapplying diazinon by the bagful. As we've heard before about homeowners everywhere, the ones in Texas also believe if one tablespoon is good, three tablespoons are better.

(Funny how they never use that reasoning with aspirin. If two are good, wouldn't four or five be better?)

Tarrant County recommends a two-step program of application which uses a combination of diazinon and baits, with the diazinon being applied according to label recommendations. But Woodson says it doesn't work well in urban areas. People just don't go along with the program.

The serious truth here is that the misapplication of diazinon has put cities in Texas and other states in non-compliance with the Environmental Protection Agency.

Gardeners who prefer all-organic methods have called for a ban on diazinon, which, A) isn't within the state's power to do; B) would deprive responsible professionals of an effective, *well-tested and approved* product; and C) would give further credence to the misconception that "all pesticides are bad."

One solution to the Texas problem would be a new \$80 million treatment facility, which would of course require a tax hike.

Fortunately, the EPA has withheld \$25,000/day fines, thanks to city efforts to educate the public.

Those education programs are not new, however. Fort Worth has warned the public about product misuse before. It's just that as the city budget fluctuates, so does the regularity of the literature that is given to consumers.

Product stewardship is an "out of sight, out of mind" practice with people everywhere.

How ironic: some of the same people who sprinkle diazinon on their lawns like sugar on cereal may be the same ones who see red when a professional applicator shows up next door.

As a professional applicator, strive to make your company's customer education campaigns consistent. Send your clients—and even people who aren't your clients—regular reminders on proper product application.

This problem, as serious as it is, certainly provides you with a sales approach.

As funny as it sounds, the line, "Don't try this at home. I'm a trained professional," is where it's at. Encourage homeowners to leave anything that has to do with chemicals to you, the trained professional! **LM**

Correction: The address for the Sports Turf Manager's Association was listed incorrectly on page 8 of our December Green Book. Correct address for STMA is: 1375 Rolling Hills Loop, Council Bluffs, IA 51503-8552



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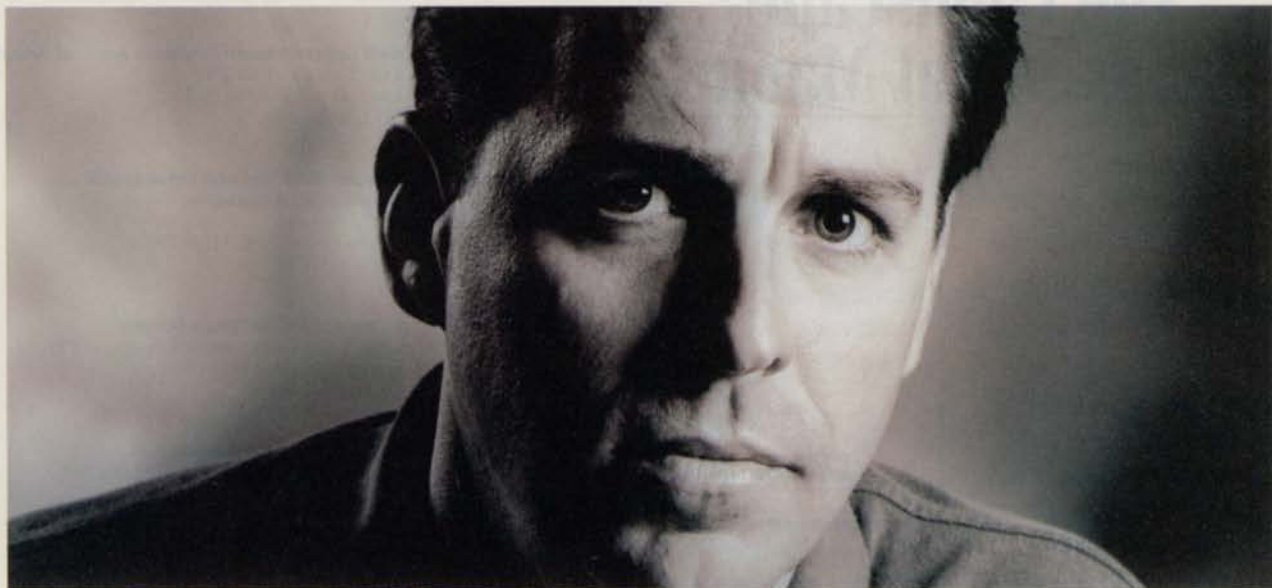
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Stop the zoysia!

Is there a way to stop zoysiagrass from spreading farther and farther in a lawn? If it is not possible, what is the easiest way to get rid of this grass and establish a Kentucky bluegrass lawn?

—OHIO

There is no practical solution to stop zoysiagrass from spreading without damaging the rest of the lawn. One option is to use a non-selective herbicide such as Roundup, Finale, or Scythe to kill the edges. This may kill the zoysia as well as the adjacent desirable turfgrass. The treated area needs to be overseeded with desirable turfgrass. This would be a temporary solution.

The best option for permanent removal of zoysia is to use a non-selective herbicide as mentioned above. Depending upon the density and aggressiveness of zoysia, a follow-up treatment may be necessary to manage any regrowth.

After using a non-selective herbicide, the treated area can be either sodded or seeded. Sodding would be labor intensive and expensive, because the existing dead zoysia turfgrass should be removed and then the new sod needs to be installed properly.

One of the best options is to overseed the treated area using the no-till renovation method of seeding. With this method there is no need to remove the existing dead zoysia. Using a Slicer Seeder (Aeroseeder) the area can be seeded with desir-

able turfgrass cultivars. In this method the Aeroseeder machine will slice the ground with its blades and drop the seeds in the machine-made grooves. With this method the seed will be in direct contact with the soil. Seed to soil contact is very important for better seed germination and establishment. Make sure that the Slicer Seeder (Aeroseeder) machine drops the seeds properly in the grooves. This may be a critical problem on slopes. These areas may require some broadcast applications of seed.

Pine resin by moths

On some Scotts pine we are finding excessive resin coming out. This is found at the base of branches where branches are attached to the main trunk. What causes this? How can we get rid of them? When is the best time for treatment?

—MICHIGAN

Based on the description you provided, it appears that the problem is related to an insect called Zimmerman pine moth. Zimmerman moth larvae mature around late summer and results of their boring activity become very noticeable. When the problem becomes severe, the infested tree trunk is covered with resin just below the branches. The larvae feed at the base of the branches, generally in the top two whorls. Because of their extensive feeding, the infested trees can break from the infested site. Pitch masses can cover the entire tree from

the base of the tree to the top. They produce brown, flaky, sawdust-like material indicative of their activities. Inside the pitch mass a pinkish-brown, spotted caterpillar may be found.

Where the problem is not severe, Zimmerman moth larvae can be hand-picked by disturbing or pulling the pitch mass and destroying them.

For better management, insecticides such as Dursban or Talstar should be applied around mid-April. Proper coverage of main trunk and branches is important.

pH not burn agent

Does pH have a burn potential? When we fertilize shrubs or trees at a recommended dose, will it have an adverse reaction (burn) at low pH (acid) neutral or high pH (alkaline) soils?

—PENNSYLVANIA

Soil pH does not have a direct role in burn potential. It may indirectly influence the burn potential of some sources of fertilizer by the pH effect on solubility, volatilization and nitrification identification.

Burn potential is based on a fertilizer's salt index. Inorganic fertilizers generally have higher salt indexes and tend to have greater burn potential than organic fertilizers. Burn potential will rise with an increase in temperature, or if you use a quick-release fertilizer at higher than the recommended rate. **LM**



BALAKRISHNA RAO

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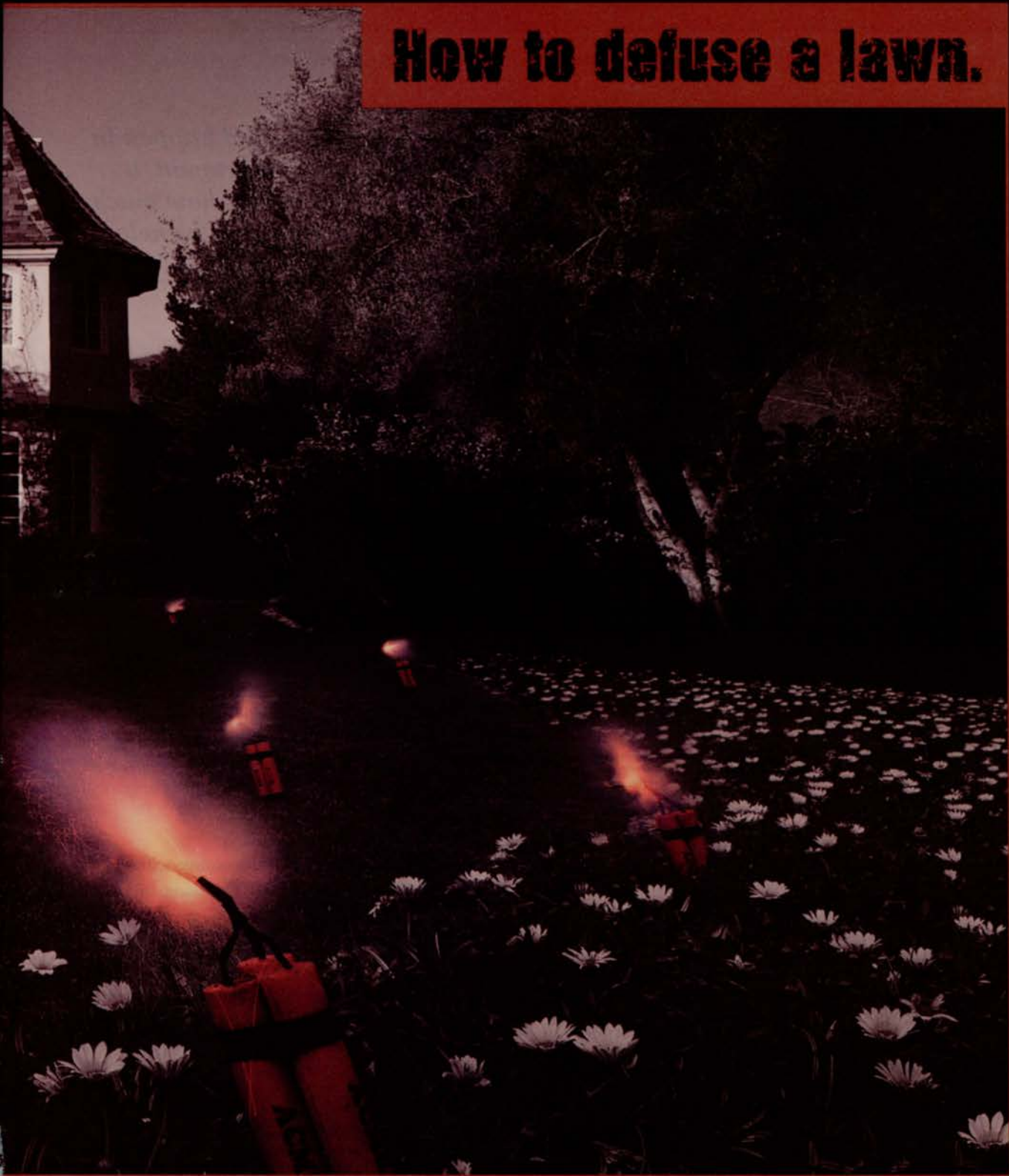
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Diazinon in Texas waste water prompts education blitz

From the 'it could happen in your town' department, a report that shows how much homeowners need the help of trained professionals.

by TERRY McIVER,
Editor-in-chief

FORT WORTH, TEXAS— Homeowners here who over-apply diazinon to combat fire ants have put this city's waste water supply in non-compliance with EPA-approved threshold levels.

The city water department and extension personnel have beefed up an education campaign to stop the abusive application and disposal practices among residents.

Focus groups, phone calls, flip-charts, and direct mail campaigns have all been used to survey the public and warn them of the contamination. The Environmental Protection Agency has held off on leveling \$25,000/day fines, thanks to the city's efforts to solve the problem.

Advocates of organic lawn and garden products are calling for a ban on the pesticide, while others want to spend \$80 million to upgrade the city's water treatment plant.

Go through it like water

Dottie Woodson, horticulturist with the Tarrant County Cooperative Extension, says homeowner focus groups and phone surveys have shown a high level of misunderstanding of proper pesticide application and disposal practices.

"They were asked, 'How often do you use diazinon?' Some said every two weeks, some said monthly," says Woodson, who adds that people admitted to using diazinon once a week to kill fire ants, a serious insect pest problem in the South and Southwest.

Mary Gugliuzza, public education specialist for the Fort Worth Water Department, says the surveys and focus groups with Fort Worth residents revealed that 16 percent of them apply pesticides at least every two weeks.

"At least 36 percent are applying it on a monthly basis," says Gugliuzza. "People read the label directions, but they don't believe them."

"One of the things learned in the focus groups

DON'T pour pesticides down the drain.

When you pour pesticides down sinks, tubs, toilets, or storm drains, they end up in Oklahoma's lakes, ponds, rivers, and streams.

- Read pesticide container labels and follow application directions to the letter.
- Buy only the amount you need.
- Use pesticides sparingly.
- Rinse containers and equipment outside and away from drains.
- Give unwanted pesticides to someone else for their use.
- And NEVER pour pesticides down sinks, tubs, toilets, or outdoor storm drains.

To learn more about environmentally friendly pesticide use and alternative methods of pest control, call your County OSU Extension office.

Oklahoma Clean! OSU

Distributed by Oklahoma State University Division of Agricultural Sciences and Natural Resources Oklahoma Cooperative Extension Service

**OKLAHOMA COOPERATIVE EXTENSION SERVICE
OKLAHOMA STATE UNIVERSITY**

Oklahoma's Cooperative Extension used this poster to teach the public proper pesticide disposal practices.

was a lot of people pour [diazinon] down the sewer, in their toilet or down their kitchen sink," says Woodson. "They don't understand that it goes through the sanitary sewer.

"One of the target things we've come up with is a handbook called the *Arrest/Pest Handbook*," says Woodson. "It explains the benefits of earth-kind gardening. It will be on display in a flip chart where pesticides are sold. They want to make it into a pocket guide. The salespeople can use this to answer questions."

Guidelines for residents include:

- ▶ don't apply products before rain storms;
- ▶ don't water your lawn to the point of run-off after you've applied products;
- ▶ don't get half the chemical on your driveway and street;

Diazinon's history

—first synthesized by Geigy in 1951. The product's toxicity was reduced significantly since the 1970s due to changes in the inert ingredients used in the formulation.

—Reregistration of diazinon in 1993 cost \$28 million.

—The product has been banned from use on golf courses and sod farms since 1983 due to bird kills.

—Companies making most of the diazinon prod-

ucts in the U.S.: Ciba; Makhteshim (Israel) and Nippon Kayaku (Japan).

—Advantages: a relatively low acute mammalian toxicity. Diazinon is non-carcinogenic, non-mutagenic, non-teratogenic, is not a reproductive toxin and does not cause delayed neurotoxicity.

—A broad-spectrum insecticide, diazinon is economical and effective at low rates.



The fire ant is a relentless marauder. Swarms have been known to attack newborn calves.

▶ don't used them unless necessary.

Gugliuzza says a "Clean Water Badge" campaign is being developed with the Boy Scouts, Girl Scouts and Camp Fire Girls.

Long term challenge

Public misuse of pesticides is nothing new to Fort Worth. As far back as 1989, the problem has see-sawed between various degrees of severity. In that year, pesticide levels in waste water

were too high in 10 out of 12 months. By 1994, the city's non-compliance improved to two months, but was back up to five in 1995, when there was a cutback in education programs.

Another Texas town, Greenville, solved its recent non-compliance problem with an aggressive campaign to correct abuses in chemical disposal. In all, up to 23 cities in Texas are out of compliance.

One solution: don't buy it!

Mike Merchant, extension entomology specialist with the Fort Worth Cooperative Extension, says the successful educational program in Greenville, Texas "went so far as to encourage people not to buy diazinon, to use other alternatives.

"At one point in the beginning of the campaign," says Merchant, "they required every pesticide purchase to be accompanied with a flyer explaining why

the city was having problems with that particular pesticide, and encouraging people to use alternatives. When [the campaign] started being successful, they backed off on that; they don't actually require that now. But people in that community are as aware as any community about the problems the city has with diazinon."

Merchant says the EPA is sympathetic to the city's plight.

"Nobody wants to hurt the city, and cost it lots of money," explains Merchant. "[The EPA] sees they're making a lot of progress with their public education campaign."

Government standards on pesticide levels are "very tough right now," says Merchant, and new testing methods are more rigorous.

"In 1990 they implemented a bio-monitoring standard. They put macro-invertebrates, like fish, minnows and water fleas in water

Merchant:
Government standards 'very tough.'



[that contained pesticide]. If [the invertebrates] lived, they don't have to do any further testing. But if they can't reproduce, or if they die, the

city has to go back and do further testing. The bio-monitoring was developed to quickly screen clean water and to raise a red flag if there was anything that might be harmful to macro-invertebrates or any kind of aquatic life."

According to Merchant, the EPA considers water to be contaminated at .35 parts per billion. "That's about 9 ounces of diazinon concentrate in 100 million gallons of water," says Merchant. "That's about the amount of water Fort Worth processes in a day."

LCOs: 'We told you so'

The small victory for professional applicators is evident. The professional turf care segment of the green industry has long maintained that homeowner misuse of pesticides is far worse than any misuse by a trained applicator.

"We had a focus group of lawn care professionals come in to talk to us, and they knew exactly what the problem was," recalls Woodson. "Customers come to them and say, 'you have to put down more diazinon because we still have fire ants.' Of course, the lawn care operators refuse, because they want to obey the law."

Teach your customers

Professional applicators in the state have been urged to help educate the public about IPM and proper product usage; obey the law themselves and apply products

Thirty-six percent of people surveyed said they apply diazinon monthly.

only when needed; and use Integrated Pest Management (IPM) techniques in their work.

"Every pest control operator we contacted, every land-

scaper, every nurseryman, are all willing to help educate the public," says Woodson.

"We are proceeding with our public education efforts, trying to educate the public

on the alternatives to pesticides, and that they should only use them as a last resort," says Gugliuzza. "And when you do use them, read and follow label directions." □

TG-CL to absorb Barefoot

ServiceMaster, Downers Grove, Ill., announced on Dec. 5, 1996, it had made an offer to buy Barefoot Inc., based in Worthington, Ohio.

When the transaction is complete, Barefoot operations will be merged with those of TruGreen-ChemLawn, the nation's largest lawn care company and a subsidiary of SM.

SM has offered Barefoot stockholders \$16 per share in either cash or an equivalent amount of SM shares, about \$230 million.

The boards of directors of both companies have agreed to the transaction. Still it requires approvals from the Securities and Exchange Commission, from Hart-Scott-Rodino anti-trust, and the completion of a final due diligence by SM. Few people, however, expect problems.

"We are excited about combining the nation's two largest lawn care companies with the objectives of creating expanded market opportunity, economies of scale,

and productivity improvements," said SM Chief Executive Officer Carlos H. Cantu.

"The experience we have had in successfully assimilating a number of other companies in recent years will help us accomplish these objectives."

Cantu added: "We also look forward to offering Barefoot's 500,000 customers the additional high-quality services that are currently enjoyed by the 6 million customers of the ServiceMaster Quality Service Network."

Patrick Norton, Barefoot Chief Executive Officer said, "Barefoot is joining with the nation's largest lawn care company and one of the leading service companies in the country. ServiceMaster has a reputation for outstanding customer service,

with an emphasis on training and developing people."

Barefoot is the nation's second largest lawn care

company with 500,000 customers in 103 markets. It has 53 company-owned operations, 50 franchises and had revenues of \$125 million in 1996.

TruGreen-ChemLawn is the nation's largest lawn care company, serving 2.5 million customers

through 260 locations. It reported sales of \$630 million last year.

TruGreen-ChemLawn is one of seven companies making up ServiceMaster Consumer Services, Memphis, Tenn. ServiceMaster, which does business in the U.S. and in 30 other countries, had revenues of \$4.5 billion last year. □



Barefoot CEO Patrick Norton joined Barefoot in 1979 and became president in 1985.



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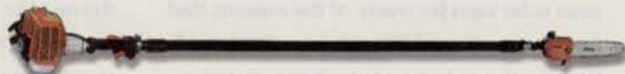
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Hispanic labor not reliable

"We have 10 Hispanics that work for us. I felt your article ("Mexican Labor Moves In," Oct. 1996) wasn't totally accurate, and that it was unfair to American workers. Our Hispanic workers are late frequently, half the crew misses about once a week, they don't call, they don't show up, and they are very hard on equipment. I'm sure there are some Hispanics out there that are hard workers, but I don't think

they are any harder workers than the Americans. There is a downside to having Hispanic workers. There are people in our industry that are dissatisfied with them."

—An assistant superintendent at an Indiana golf course who wishes to remain anonymous.

(We know there are two sides to every story. Joe Loyet, featured in our series on Hispanic labor, does not hesitate to fire anyone not willing to work. Most of the other employers interviewed for the series were satisfied with the quality of their Hispanic workers.

We certainly want to cover this issue fairly without slandering any racial group. We encourage more of you to write in with your comments on the alternative labor force. ed.)

agriculture work for over 22 years in Southern California. I have worked with quite a few Mexican and Guatemalans and I have to say they are not the "super workers" which you proclaim in the article. As a matter of fact, the non-English speaking laborers require additional supervision because they usually can't read very well—pesticide labels and other directions etc. Also, while supervising a crew of non-English speaking Hispanic gardeners, I have on occasion noticed some of them have a rather humorous, but potentially damaging method of operating machines, for example: putting a hole in the piston of a weed whacker by trying to start it with starting fluid, or running a two-stroke chainsaw with straight gas and putting the two stroke oil in the chain lube reservoir.

Frank Liebowitz, Lompoc, Calif.

Super workers? heck no!

After having just read the October 1996 issue, I thought the article; "Mexican Labor Moves In," was appalling. I am a white male who has been employed in landscaping, golf course and

Box trucks make sense

Our movement away from trailers to box trucks could have begun that day over 20 years ago when I was personally pulling a trailer, connected by a slip hitch, on our interstate. Having just dropped a piece of equipment, I was surprised to realize the pin in the hitch must have broke, the trailer I was pulling had come loose, sheared the safety chains, passed me, crossed a grassy median and was weaving through a group of motorcyclists in opposing traffic. Luckily no one was seriously hurt although ultimately the trailer did take the back axle off of a two-week old Cadillac. So certainly some of our greatest motivations were related to safety.

But, in truth, our Fleet Manager Jerry Marion and my brother Lowell were first to propose cube vans for many of the reasons dad already mentioned (Oct. 95, page 12L). Additionally, the reduction in trailers reduced insurance costs, license plate fees, and maintenance costs like tires, bearings and brakes. We also were able to reduce the number of DOT capable drivers we need to have on staff. The cube vans bring flexibility that allow us to equip some of our trucks with custom-made shelving to handle transporting

several hundred flats or pots of seasonal flowers. We also use cube vans to provide cover for skids of granular turf fertilizer during application cycles. And with fall leaf, these trucks provide a tarp-free way of transporting what cannot be mulched. On occasion, installation teams also use our cube vans to transport smaller trees, shrubs and construction items when the weather is less than desirable.

Perhaps one of the greatest single benefits though is the reduction of space under the roof. The ability to store equipment in a cube van eliminates a huge fixed expense that oftentimes only serves a purpose at night or in the off season. This approach has been vital during our growth by eliminating the need to constantly add on more building or relocate to larger sites. Still, for some there may be one major draw back to having the majority of your fleet being cube vans. Pro Care does not perform any snow removal services. Other contractors offering his service would find a 14-foot box van poorly suited to pushing snow.

Mitch Rolsky, President and CEO, Pro Care Horticultural Services, Indianapolis

Nothing wrong with hard work

Just read your editorial on labor in the October issue. What a powerful message! Unfortunately, the message is all too true. The guys and gals my age seem to think they are above hard labor—the fact is that hard labor builds character and, with that, integrity. I look forward to having any employee that has a good attitude and that is mature enough to realize that work is profitable.

Steve White, president, SecondNature Lawn Care, Antioch, Tenn.



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Annuals

glow with smart design & care

by LOIS BERG STACK, Ph.D.



Annual flowers can add exciting color to any landscape. Yet too often, annual flower gardens fail because the flower beds are improperly prepared, the plants are selected without considering the location's environment, the design just doesn't work, or maintenance falls short of the plants needs.

Whatever experience you have had with annuals, here are four great reasons why you should consider them when you develop or renovate a landscape.

Always something new

New annuals are introduced every year, and many of the recent introductions are well worth a try. For example, "Purple Wave" and other "new petunias" will change your mind forever about petunias. They branch early and remain low-growing, to produce an annual groundcover. If watered and fertilized properly, they flower all season without any deadheading.

Containers more popular

Containers have become an important part of landscapes. Large, decorative clay pots, free-form tufa containers and hanging baskets are everywhere. Many of these containers are beautiful themselves, but

when filled with high-quality, colorful annuals, they become focal points in any landscape. Containers allow places for plants to grow in difficult sites that would otherwise be barren.

Fragrance a feature

We have become much more creative in our definition of which plants we think of as "annual flowers," and the reasons for their use in the landscape have expanded beyond color. Fragrance has become much more important, with designers rediscovering old-fashioned plants like mignotte and heliotrope and asking for more varieties of plants like the scented geraniums.

Many people have expressed a desire for annuals that make good landscape specimens and can also be used as cut flowers indoors. Garden designers are adding more and more herbs to add color and texture. And no wildlife landscape would be complete without an annual garden of butterflyweed, cosmos, flowering tobacco and salvia to attract butterflies and moths.

Plentiful supply

Annuals are more available than ever before. They are produced in great numbers and variety by greenhouses throughout the country. Growers can produce an-

nuals in almost any size you want, at almost any time you want them. It is truly possible for anyone to develop a garden with instant color in the cool spring (or winter in the deep south), replace the entire planting with a mid-season garden of annuals, and finish the year with a fresh fall planting.

Season-long beauty

A professionally-designed annual garden should look good every day of the season. Avoid annuals that do not perform to this standard, and concentrate on those that do. Choose plants that produce many weeks of color with low maintenance. The annuals listed on page 19 are recommended as a starting point. They are readily available, require little or no deadheading or pruning during the season, are relatively pest-free, and provide weeks of high-quality color in the landscape.

When you select plants, remember their placement within the flower garden is as important to visual success as the placement of the garden within the landscape. Follow these ideas for effective annual flower garden design:

1. Use masses of a few types of annuals,

cont. on page 20

10 Great Annuals for the Landscape

Geranium, dusty miller, French marigold, impatiens, wax begonia...what else can you plant in the landscape? The following annuals produce maximum color, are reliable, do not need deadheading or pruning, and have few pest or cultural problems.

Brassia oleracea "Acephala Group" ("Flowering Cabbage/Kale")

Size and form: 12-18 inch open cabbage, with wavy-edged or deeply lobed leaves.
Color: foliage turns white, pink or purple in cool weather.
Environment: cool fall temperatures in the North; good winter plant in South; sun.



Best attributes: develops interest in fall/winter, after other plants decline.
Recommended types: many series available; choose for color and form.

Catharanthus roseus "Annual Vinca"

Size and form: 12-18 inch mounds
Colors: pinks, white
Environment: warm to hot temperatures; full sun; well-drained soil
Best attributes: does well in droughty conditions; self-cleaning flowers.
Recommended types: several

series available; choose for height and color.

Cleome hasslerana, ("Spider Flower")

Size and form: four feet tall, four feet wide; well-branched, upright.



Colors: pinks, lavender, white
Environment: does well in droughty conditions; full sun.
Best attributes: large plant fills big space; self-cleaning.
Recommended types: "Queen" series has good color and branching.

Gypsophila muralis, 'Gypsy' ("Gypsy Annual Baby's breath")

Size and form: eight to 10 inches tall, perfect mound all season.
Color: small pale pink flowers in profusion.
Environment: tolerates

droughty conditions after established; full sun.

Best attributes: perfect cloud of tiny pink flowers all season.

Lobularia maritima ("Sweet Alyssum")

Size and form: two to six inch spreading mound; great edging plant around garden.
Colors: white, pinks, rose, lavender.

Environment: full sun in cool northern sites; light shade in other locations; late fall and winter planting in South.

Best attributes: fragrant, profuse flowering; shear back in midsummer in hot, full sun locations.

Recommended types: many excellent types; choose for color and size.

Nierembergia hippomanica 'Mont Blanc' ("Mont Blanc Cup Flower")

Size and form: four inches tall, 16-inch spread; great edging plant.
Color: white.

Environment: full sun, average soil conditions.

Best attributes: good substitute for alyssum in hot locations; self-cleaning.

Petroselinum crispum, "Parsley"

Size and form: eight-inch vase-shaped plants, most with crinkled leaves.
Colors: green foliage.
Environment: full sun; tolerates many soils.

Best attributes: excellent quality; crisp foliage all season.
Recommended types: any of the crinkled-leaf types.

Petunia x hybrida 'Purple Wave' (Purple Wave Petunia)

Size and form: four inches tall, four feet across; very well-branched.



Color: Purple.

Environment: full sun; well-drained soil; moisture; high fertility.

Best attributes: self-cleaning; riveting color; wide spreading. Other recommended types: several series of "new petunias," all propagated from cuttings, provide similar form and other colors.

Sanvitalia procumbens ("Creeping Zinnia")

Size and form: 16 inches tall, 24 inches across; loose mound of tiny stems and leaves.
Colors: yellow or gold-orange flowers, one-inch across.

Environment: full sun; hot, dry locations.

Best attributes: self-cleaning; never spectacular, but reliably high-quality.

Recommended types: 'Mandarin Orange' has slightly more orange flowers.

Zinnia angustifolia, 'Star White' & 'Crystal White' ("Narrow-leaved Zinnia")

Size and form: 'Star White' forms 18-inch mound; 'Crystal



White' forms 10-inch mound.

Colors: white daisies with yellow center.

Environment: full sun; tolerant of many soils.

Best attributes: self-cleaning; neat habit; very resistant to powdery mildew. □



Wide bands of colorful annuals decorate this golf course. Yellow: French marigold; blue: petunia; silver: dusty miller; purple: purple-leaved basil.

rather than a few each of many different plants.

2. Space plants far enough apart to promote branching, fullness and sturdiness. Most annuals should be spaced 12-20-inches apart. Each plant is different. The "new petunias" can reach a spread of four feet, even in Maine!

3. Create lines and masses of color that mirror other lines in the landscape (the shape of the flower bed, the curve of the pathway, the line of a fence or wall).

4. Highlight pink, blue or purple flowers by planting silver-leaved plants like dusty miller around them.

5. Plant a uniform edging around the

garden to unify it.

Maintain from day one

Good maintenance starts on planting day. After you select plants for your design, buy the highest-quality specimens available. Keep them well-watered in a protected holding location. If possible, plant on a cool or overcast day. Water the plants well, and remove them from their containers. Set them into the garden, take care to lightly bury their entire root balls, and firm the soil to stabilize the plants. Irrigate newly-planted sections of the garden as you proceed, to prevent plant stress. When planting annuals valued for their first spike of flowers, like snapdragons, select young

plants and leave their flower spikes intact. When planting other flowering annuals, remove open flowers at planting time, to direct their energy into rooting. This sacrifice of early flowers will be offset later in the season with increased flower production and drought tolerance.

Mulch to reduce weed competition and maintain even soil moisture. Weed regularly. Remove weeds



Annuals grow best in deep, well-drained loam with four to five percent organic matter.

Note design potential of site

Annual gardens require a significant investment in plants and labor. They are worth every cent of that investment if they achieve their potential. To ensure high performance within the landscape design, select a site where a colorful focal point will have the greatest visual impact and fulfill a design function. A wide, low curve of color draws the viewer's attention across a distance. A brightly-colored compact garden helps the viewer focus on a smaller area within a landscape.

Keep the lines of the planting clean and simple.

Start with a soil test

Choose an area free of tree roots.

Soil should be a deep, well-drained loam with four to five percent organic matter.

Remove existing sod and till the soil to a depth of six to eight inches.

Add lime, fertilize and/or organic matter according to the results of the soil test. Do not cut corners here. In many ways, the success of soil preparation will affect the success of the planting. □

early in the season, before they drop seeds, to reduce weed populations later in the season.

Water as needed. Most annuals require one to one-and-a-half inches of water per week, including rainfall and irrigation. One thorough irrigation per week is better than several light sprinklings. Monitor flower gardens regularly and solve problems before they become serious. Pesticides are often unnecessary with proper site and plant selection, soil preparation and planting techniques, and effective monitoring and roguing. **LM**

The author is extension specialist in ornamental horticulture at the University of Maine.

Photos by Lois Berg Stack.



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New Holland's 25 and 30 Series "Boomer" tractors offer big-tractor features in 25 to 34-horsepower units.

COMPACT TRACTORS

Compact tractors have come a long way in a few short years. They're reliable and versatile, with many safety and comfort features.

The compact tractor is one of the green industry's most versatile and valuable tools. Or should we say many tools because the tractor, depending on the implements used, can accomplish so many different tasks. Tractor manufacturers offer many attachments, but there are plenty of aftermarket work savers too.

The following list of compact tractors and related implements is not all-inclusive but it should give you, the green industry professional a good starting point in meeting some of your more demanding landscape and turf tasks.

The Classen VB-40 vibratory plow attaches to most 3-pt. tractors of 18-hp or larger. It buries poly or pvc irrigation pipe up to 1 1/2 inches in diameter, electrical wire or cable 12 inches below ground.

GARDEN WAY
(800) 833-6990
Circle No. 293

Garden Way Inc. says its Troy-Bilt 20-hp GTX Tractor is a multi-purpose workhorse. It features a Kohler Command engine. The tractor's front, mid and rear PTO points are shaft driven. Single-pedal hydrostatic drive, coupled with power steering makes the GTX Tractor easy to maneuver, and the rear axle offers dual speeds.

GLENMAC
(800) 437-9779
Circle No. 294

Glenmac offers an assortment of Harley tractor-mounted landscape tools including a Power Box Rake, Pro Power Rakes, scarifiers, and its new Roller Packer Wheel all Pro-6 & 8 and T-6 and 8 rakes. The Roller Packer Wheel is self pivoting so that when you change angles it swings so you don't drive over your windrow. Adjustable down pressure to change the depth of the roller.

GRAVELY
(518) 391-7268
Circle No. 295

Gravely's Professional-G's riding tractors are manufactured with welded-steel and cast iron structures and have no belts to slip or break. They feature rack-and-pinion steering; all-gear, direct-drive transmissions; and their engines are in the rear for better traction and stability.

COMPACT TRACTORS

AGRI-FAB
(217) 728-8388
Circle No. 291

The Agri-Fab Tractor Mounted Spreader allows material (de-icing materials, fertilizer, grass seed, etc.) to be spread in a uniform 4-foot pattern. It has a capacity of about 100 lbs. with a spread width of 25,000 sq. ft. The hopper is made of poly. The spreader is powered with a 12-volt motor.

CLASSEN
(402)371-2294
Circle No. 292

Available with a wide variety of custom-engineered attachments.

INGERSOLL
(414) 582-5000
Circle No. 296

Ingersoll Equipment Co., Inc., offers the 3000 and 4000 series of hydraulic-drive garden tractors with 14-hp to 20-hp engine options. Two models are offered with power steering and all are standard with hydraulic lift. They gain versatility with hydraulically driven attach-

ments, water-cooled diesel engines, the LB 1914 with an engine hp of 20.5 offers a lift capacity of 1460 lbs., the LB 2554 at 26 hp a lift capacity of 2100 lbs., and the LB 3054 with 30.5 hp, a lift capacity of 2150 lbs. Optional equipment: front weights, front end loaders, mowers, snowblowers, backhoes, depending on the model.

KROMER
(612) 472-4167

Circle No. 299

The Kromer AFM is a tractor particularly well suited for sports turf. With attachments it can level dirt for sodding; condition infield ball diamonds; paint lines on football, soccer and track fields; spray chemicals

transmission is available on B-Series. Kubota also offers its Grand L Series of tractors from 25 to 37 hp equipped with hydrostatic steering, shuttle transmission and shift-on-the-go. Loaders, backhoes, box scrapers and tillers are among the implements that enhance the Grand L's versatility.



NEW HOLLAND
(717) 355-1371
Circle No. 311

New Holland's new 25 and 30 Series "Boomer" compact tractors offer big-tractor features in 25 to 34 engine hp units. Large displacement 3-cylinder New Holland diesels provide long engine life with lower noise levels and more fuel efficiency. 9X3 or hydraulic transmission with speed control, line hydraulics and 540 rpm

Kioto offers 3 four-wheel drive compacts

ing deck which is convertible to mulching.

With hydrostatic drive, the fender-mounted hydro control lever combines fingertip speed selection with integrated cruise control.



Attachments give Ingersoll tractors versatility

ments. Tillers, chipper-shredders, snowblowers, brushcutters, vacuums, log splitters, rear PTOs and mowers with mulching kits are available for all models.

JOHN DEERE
(919) 850-0123
Circle No. 297

The name John Deere is synonymous with tractors. Deere offers three 20 to 33-hp hydrostatic-drive models (755, 855 and 955) and three 28 to 33-hp gear-drive models (870, 970 and 1070). All feature liquid-cooled diesel engines, live independent mid- and rear PTOs, and all can be equipped with front-, mid- and rear-mounted implements simultaneously. Engage on-the-go MFWD is available on all these models.



Kromer AFM particularly handy for ball fields

for weed and insect control; and also remove the dangerous ridge of infield material on the edge of the outfield grass.

KUBOTA
(310) 444-7000
Circle No. 310

Ranging from 13 to 18 PTO hp, Kubota Tractor Corp.'s new B-Series compact tractors are well suited to a variety of landscaping and turf applications. The B-Series models feature 3-cylinder diesel engines. Hydrostatic

PTO. Exclusive SuperSteer FWD front axle option reduced turnaround diameter up to 50 percent without brakes. Standard on 30 series—telescoping, tilt steering wheel.

SNAPPER
(770) 957-9141
Circle No. 312

Snapper's Lawn

STEINER
(216) 828-0200
Circle No. 313

The Steiner 525 is the most powerful of five Steiner tractor models. The 525, with constant 4-wheel drive, is powered with a 23-hp Kubota diesel, and features a hydrostatic transmission, hydraulic power steering and Peerless 2500 dual-speed transaxles. It's unique articulated frame allows it to climb smoothly up grades and across undulating terrains, bending and twisting as it goes.

TIGRONE
(970) 668-5924
Circle No. 314

The Tigrone 4X4 has two fronts. A double set of pedals and inversion of the steering wheel and seat (which can all be done in less than a minute without tools) enables this tractor to work in either of two directions. All-wheel drive on four large tires. One of several unique tractors from Antonio Carraro, imported from Italy. Attachments allow mowing, snow plowing, and other landscape duties. **LM**

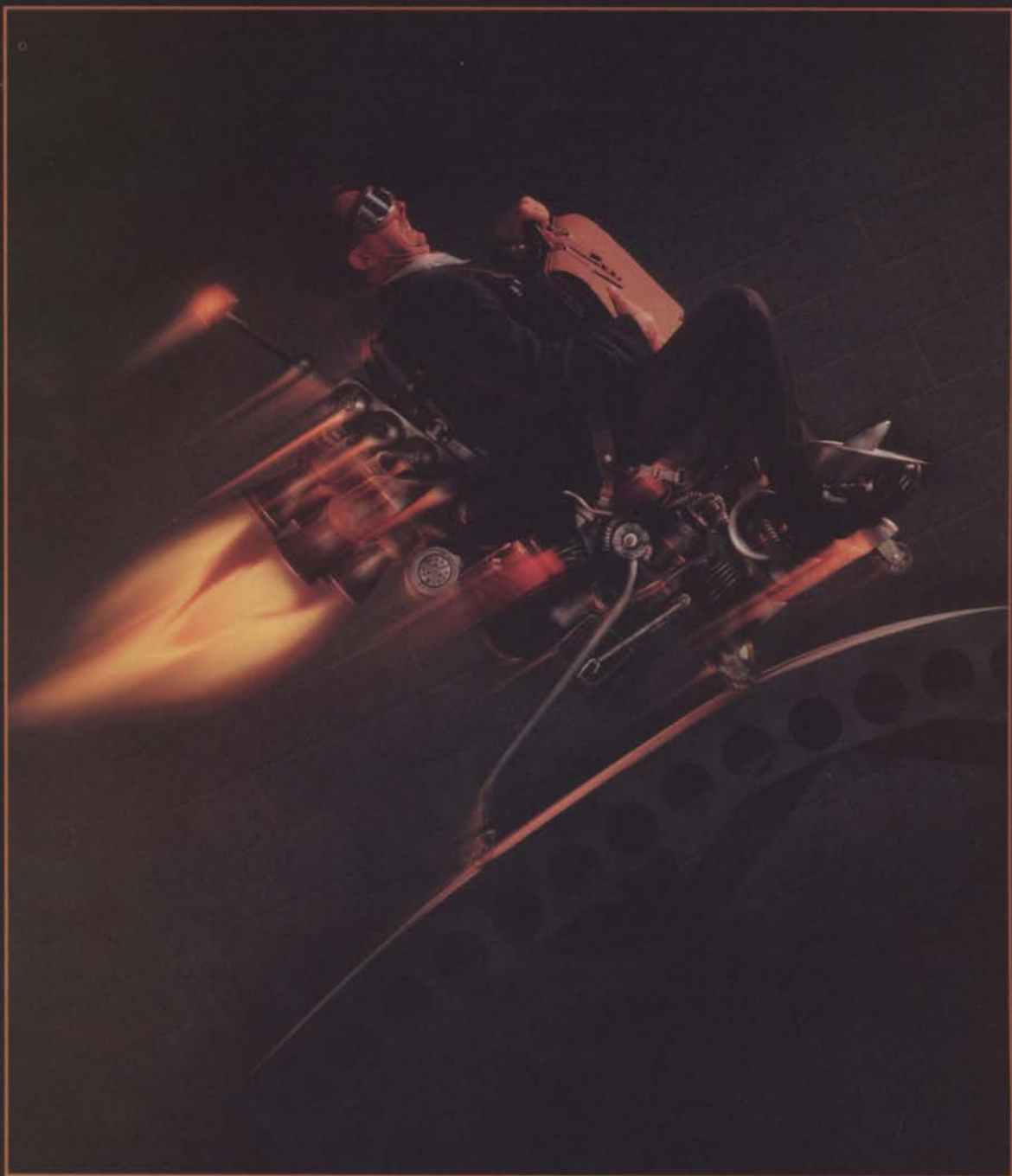


Kubota tractors for every grounds task

Tractor is powered by a 16-hp V-twin OHV B&G Vanguard engine. The tractor features an electric blade clutch, a 42-inch twin-blade mow-

KIOTI
(919) 291-6111
Circle No. 298

Kiotti's three four-wheel drive compact tractors are rugged machines. They're powered by 3-cylin-



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Circle No. 135 on Reader Inquiry Card

Hispanic headaches

by RON HALL / Managing Editor

This is the final installment in our series on Hispanic labor in the green industry. Our look at this important fact and facet of green industry life began in October, with a look at the growing reliance on Hispanic labor. Part II, in November, examined the network available to help find documented aliens. But realists that we are, we know there are always hitches, glitches and hoops to jump through to make the system work to your benefit. And so, we bring you Part III.

We don't plan to say goodbye to this issue, either. Many of our readers have strong opinions on whether this trend is good or bad for the green industry. Trends also have a way of changing on a moment's notice, and we expect to update our readers on all the important developments as they happen.

LM

The green industry's eagerness to employ growing numbers of Hispanic workers doesn't come without challenges and pitfalls.

Landscape architect Frank Mariani says immigration whisked away 55 of his Mexican workers this past fall, leaving him understaffed.

"We had 200 I-9 forms (required for each employee to establish work eligibility) and not a single violation," says Mariani who operates one of the largest, full-service landscape companies in the Chicago area. "Some of the people they took, I was shocked. Some of the people that stayed, I was equally shocked."

That "visit" by the U.S. Immigration and Naturalization Service (INS) highlights the most dramatic challenge facing employers that rely on seasonal Hispanic labor. It's hardly the only one though.

What about language? Many newly arrived Hispanic workers don't speak English. Some can't read, not even their native Spanish.



Grover: provide language training.

"The language barrier is something that we did not want to subject ourselves to dealing with, but especially we did not want to subject our clients to dealing with it" admits Robert Grover with Northwest Landscape Industries, Portland, OR. But, in 1990 NWI began employing Mexican laborers anyway.

"At first we tried to encourage our supervisors



Mariani: shocked by INS removal of documented workers.

to learn Spanish. That did not seem to be effective," says Grover. "In reality, to survive in the U.S. it's important to be able to speak English. We've spent our resources in either providing translation services to those folks who can't speak functional English. Or to help, encourage and provide opportunities for them to work on their English speaking skills."

Who speaks the language?

Even so, NWI, like most companies reporting success with Hispanic labor, has a key person, sometimes several, that speak both languages well. In

NWI's case it's an assistant supervisor/trainer.

Michelle Underdahl serves as the human resource manager for Arteka Corp., Eden Prairie, MN. With a Cuban heritage and a firsthand knowledge of both the Spanish language and Latin culture, Underdahl joined the Arteka team four years ago, several years after it hired its first Mexican workers.

Her company provides incentives for non-English speaking employees to learn English. These incentives include money and also an opportunity for a better-paying position.

Several of Arteka's Mexican workers, in fact, have improved their English and job skills enough to become foremen. But the client contact, to this point anyway, remains at the next level, with a job superintendent.

Training an issue

Training is obviously tied to language.



Underdahl: incentives for those who learn English.

Hispanic labor supply to shrink?

A bill aimed at reducing illegal immigration, and also reducing the access of legal immigrants to welfare, was signed into law this past September. The bill:

- ▶ provides for stronger border enforcement, adding 1,000 border patrol agents per year for five years, bring the total from 5,175 in 1996 to almost 10,000 by the year 2000.
- ▶ requires the Immigration and Naturalization Service to build a 14-mile fence on the U.S.-Mexican border south of San Diego. It also increases penalties for smuggling aliens into the U.S. and for using false documents to obtain U.S. jobs or welfare assistance.
- ▶ adds 1,200 INS investigators agents who inspect U.S. work places for unauthorized workers, and apprehend and deport criminal aliens.
- ▶ introduces a pilot telephone verification program to enable employers to verify the status of newly hired workers. However, participation in the verification program is voluntary.
- ▶ provides incentives for states to develop counterfeit-resistant driver's licenses and birth certificates.
- ▶ makes it easier for employers to defend themselves against suits from job applicants who believe that they were discriminated against by employers checking their legal status. They now must prove that the employer intended to discriminate.
- ▶ expands and strengthens restrictions on the access of legal immigrants to welfare benefits. Non-U.S. citizens were barred from Food Stamp assistance and Supplemental Security Income. The law left it up to states to decide whether to permit legal immigrants to participate in Medicaid, medical assistance for the poor.

At Arteka, all training materials, including handbooks and safety manuals are translated into Spanish. "Everything that we have is in English and Spanish," says Underdahl.

Adds Randy Ferrari, vice president of operations Minor's Landscape Services, Fort Worth, TX: "The moment a Mexican worker comes into the door they are given an application that is done in Spanish. Then we have an HR (human resources) assistant that is Hispanic that interviews and documents that employee. From that point everything they see and do in the company is done in Spanish—policy manuals, training videos. All meetings are done in English and in Spanish."



Ferrari: company proficient in Spanish too.

(LANDSCAPE MANAGEMENT magazine turned up a smattering

of Spanish-language training material, including some excellent information from the Associated Landscape Contractors of America [ALCA]. Some industry suppliers provide Spanish-language operations manuals and labels also. Generally, the industry needs help here though.)

Getting to work

Transportation to and from your golf course, company headquarters or job sites can be a big problem too. Many Hispanic workers don't have drivers licenses. Chapel Valley Landscape, Woodbine, MD, is miles west of Washington D.C. and



Woolman: worker transportation a problem.

Baltimore. About 90 percent of its front-line workforce is Hispanic including Mexicans, Salvadorans, Nicaraguans and Puerto Ricans. Most live at least 45 minutes from Chapel Valley offices. To get to work, employees depend on other employees. Often they have to leave before daybreak to catch their rides. "The key to that is good communication with your staff," says Deonne Woolman of Chapel Valley.

The U.S. Census Bureau says the migration is changing the face of the U.S. where, by the year 2050, one in four people will be of Hispanic heritage.

Arteka's Underdahl says her company provides van transportation to and from work for those workers that have no other way to work. As the workforce has become established, fewer need the service though, she says.

But even if a Hispanic worker has a driver's license, the employee often can't afford vehicle insurance. Grover of Northwest Landscape Industries says his company established a rapport with a local insurance agent who often can help these individuals get insurance.

"A worker can't go very much up the wage scale unless he has a license," says Grover.

Challenges galore

Employee housing can be an issue too. Sometimes workers maintain households and families in Texas or Mexico, and need housing during their seasonal employment.

How about health benefits? Workers, even the best and strongest get sick and have accidents. Unemployment compensation? Laws are different in different states.

Even assuming a green industry firm can attract welcome Hispanic help in the first place, how can it retain it from season to season? There are no guarantees.

"We do still struggle with some turnover," admits Chapel Valley's Woolman, "But we do have about a 90 percent return rate after our 10 to 12 week layoff season." She attributes some of this success to a benefits package the company provides these workers.

Farrari of Minor's Landscape says his company tries to keep good workers by helping them move up the career ladder. "I think this sets the pace for the other employees. When they see success happening in the company, they can see that they can move forward and develop in the company too," says Farrari.

Given these hurdles, it would seem that Hispanic workers would not be in great demand. But they are. And they're likely to remain so, at least as long as low unemployment in many parts of the U.S. makes labor, any labor, scarce.

Here to stay

But, Hispanic workers are more visible for a more obvious reason too: there are, quite simply, more of them in the United States. Immigration to the U.S., both legal and illegal, soared this past decade. The impact was most noticeable in California, New York, Texas, Florida, New Jersey and Illinois.

For the smaller contractor, the burden of training, transporting and, sometimes even, housing Hispanic workers can be backbreaking.

The U.S. Census Bureau says the migration is changing the face of the U.S. where, by the year 2050, one in four people will be of Hispanic heritage.

Take Chicago, for instance, where Frank Mariani's company is active. The Latino Institute released a detailed portrait of immigrants in the Chicago area in 1995 that said there were 470,000 immigrants living there, the largest group (278,000)

being from Mexico. From this pool of people comes about 48 percent of the area's "groundskeepers and gardeners."

Sizable green industry operations like Mariani's or like Arteka, Chapel Valley, Minor's and NWI can justify having somebody on their staffs, somebody bilingual, to deal with these matters.

Otherwise, the burden of documenting, training, transporting and, sometimes even, housing seasonal workers falls to the owner or manager. It's a big load, especially considering that an owner/operator is generally also responsible for selling his firm's services and overseeing production.

But, the biggest fear most green industry operations have in hiring Hispanic workers is what happened to Mariani, and many others like him—it's of suddenly losing them again.

The INS has stepped up its efforts to find and deport so-called "illegal" or undocumented workers following passage of last year's new immigration law. (See accompanying article.)

It means that an employer, regardless of how carefully they scrutinize workers' documents always risks the possibility of being left with contracted services to perform or jobs to complete, with nobody to do it.

Most employers admit they're not experts at counterfeit papers. But, it's something they'll have to get better at.

"It's important to educate yourself on what documentation is appropriate and what is not," says NWI's Gover. "There is a lot of false documentation out there. We scrutinize documents. We turn away people that have bogus documents."

Employers with less experience in hiring foreign-born employees aren't as sure they can tell real documents from manufactured ones. Nor apparently are they as concerned considering their need for help.

"If the INS came in my front door, I would make sure my guys got out the back door," says another Chicago-area landscape contractor who asked that his name not be used. **LM**



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New Direct-Drive Augers

Best budget plans sweat the details

The budget and strategic plan are needed to drive, direct, change and control your company and individual projects.

by JAMES HUSTON, MBA

A budget is a strategic plan that is "reduced to numbers," to help you organize, control and direct the company.

A well-planned budget will also provide the vital feedback you need to analyze the results and effectiveness of your organization.

The budgeting process produces key standards—or targets—that will help you to run jobs, as well as the overall business.

Estimating is one portion of the four main functional areas in your business. I would say, however, that it is the most important because everything else, including total quality management, is built upon it.

The budgeting process produces cost standards and targets for:

sales (by division); direct costs (by division); gross profit margin (by division); overhead (not necessarily by division); net profit margin (not necessarily by division); labor burden for office and field personnel; field labor hours; equipment; average wage.

These cost standards are then combined with other job-related information in order to determine the cost of the project. Once we identify direct costs on an individual job, we then add markups and margins (net profits, overhead, labor burden, sales tax, etc.)

The break even point for the project is identified once overhead is added to the direct costs. A contingency factor and profit are added to the break even point in order

to arrive at the final price for the project.

It is these two numbers—the break even point and final price—that you are constantly attempting to identify during the estimating process. They answer two critical questions and identify a bidding "envelope" or range within which you need to price your jobs.

The break even point determines how low you can bid the job and still cover all costs. It is a compilation of costs for a job and is therefore fairly analytical in nature. However, the final price is subjective and determines how high you can bid and still get the job.

Bid to make money

What pricing structure will the market bear? Can you add 40 percent gross profit margin GPM to the project and still get the job? Or will this market and this particular job realistically only allow you to add 15 to 18 percent GPM above direct costs in

order to have a real chance of winning the bid?

You must always determine and monitor the BEP and GPM on jobs being bid. This helps you measure, control and allocate the overhead dollars in an overhead budget. Because overhead costs are "indirect" costs, there is no right or wrong amount of overhead costs to allocate to a job being bid. Subsequently, the five different methods of pricing jobs are not right or wrong concerning overhead recovery. There simply is no right or wrong way to determine the amount of overhead costs to put in a particular job being bid.

The question to ask is not, "How much overhead should I add to a job and by which method?"

Ask instead: "If I sell a job for a certain price and complete the job on-budget, will it help me achieve my budgeted gross and

cont. on page 32

Monthly payments fuel cash flow

Larry Iorii, president of Down to Earth, Wilmington, DE, obtains payments from clients at the beginning of every year, not the beginning of spring. The influx of cash is a hedge against new season overhead.

From April to December, Iorii's clients may make up to 10 payments on service that is scheduled or already completed.

"Let's say for 1997, we have a \$10,000 commercial account. If we don't start work till mid-March, we pick up an installment in January. If a \$10,000 account does not want to pay you in advance, we have a very heavy first installment payment. We'll ask for \$3000 in March, then divide the remaining payments out over the remainder of the contract."

For his lawn care accounts, Iorii asks for 60 percent of the contract amount, due on March 15, with the balance due October 15. □



**Iorii:
Payment
plans
work!**

Know the four revenue sources

Perhaps the most important part of your budget is the process you develop to establish revenue.

With reasonable record keeping, doing a revenue projection is a simple process. You need the following:

- a list of current contracts;
- sales goals for the next year;
- sales achieved for the past three years;
- about two, uninterrupted hours.

Here's the process:

1. Establish your backlog. This is contracted work that extends into the coming year for a specific time period.

2. Calculate your renewals. Renewals are contracted work that expires during the upcoming year, work you want to renew.

3. Project your new sales. This represents new jobs you anticipate starting that will generate income during the new year.

4. Anticipate your one-time extras.

These are add-on sales to existing clients or small jobs that will occur only once.

Set up a spreadsheet that runs from January through December across the top and list backlog renewals, new sales and one time extras down the side (Table 1). Now fill in the blanks.

Your **backlog** will be a decreasing number as you total by month your existing contracts out to their expiration dates. Fill in those monthly totals across the spread sheet next to the backlog heading. These numbers are hard numbers.

Renewals are an extension of your backlog. You must assign a percentage to your chance of renewing the business when the contract expires. Be honest; it is not 100 percent for each

job, and some may be zero percent.

Multiply the percentage you assign by the original contracted value to get your renewal dollars. Do this for each job from the point the existing contract expires through the rest of the year. Total these dollars by months and fill in across the spreadsheet next to renewals. This should be an increasing number across the sheet and—if you are true about your chance of renewal—a pretty accurate number.

New sales is difficult if you have not kept records of new jobs sold during a particular year. If you have, take a snapshot of your last three years. Look for trends, business attitudes, economics, or marketing goals. A pattern should show that says "we have been consistently selling X dollars in new business every year. If the number is real, then trust your historical data. If you plan an aggressive sales year, be prepared

to review your budget quarterly to make adjustments.

It's a challenge to try to anticipate when new sales will begin. Use your historical data and a trend should show when you "hit" most frequently. Remember, you will only receive a portion of contracts revenue. They won't all start January 1st and end December 31st. Set up another spread sheet that runs January through December on both the top and side. Go back to your new sales goal and spread it out by month down the left side so that the total at the bottom equals your sales goal. Now, go back and divide each month's goal by twelve and, working both across and down, insert that number across the spread sheet (Table 2).

You now have your new sales goal plotted and more importantly, your revenue received for the budget year. Total each month down and fill in the numbers across the spread sheet next to new sales.

One time extras are fairly simple. These are the extras your client base requests or the upgrades you recommend to them. If you do not track these jobs, a look into accounts receivable would give you the information. Quantify an annual number, divide it by twelve and fill it in across the spread sheet next to one time extras.

With all the numbers plugged in, you have monthly and yearly budgets and goals, or a *revenue projection* (Table 3). □

*Mike Guthrie, vice president,
Maintenance Division,
Ground Control Landscaping,
Orlando, Fla.*

TABLE 1

	January	February	March	April	May	Etc.
Backlog						
Renewals						
New sales						
1-time extras						

TABLE 2

	January	February	March	April	May	Etc.
50,000 Jan.	4167	4167	4167	4167	4167	
30,000 Feb.		2500	2500	2500	2500	
80,000 Mar.			6667	6667	6667	
50,000 Apr.				4167	4167	
20,000 May					1667	
Etc.						

TABLE 3

	January	February	March	April	May	Etc.
Backlog	100,000	90,000	80,000	70,000	50,000	
Renewals	1,000	5,000	10,000	15,000	20,000	
New sales	4,167	6,667	13,334	17,501	19,168	
1-time extras	500	500	500	500	500	

cont. from page 30

net profit dollar goal for the year?"

The goal: measure, allocate and control overhead costs throughout the budget year. Don't argue over which method is correct—there is none!

Job costing

All jobs have to be job costed in order to run effectively. The profit and loss financial statement and the balance sheet are your "report cards" for the company or division as a whole. This can be done two ways:

1) Individual jobs need to be monitored by job costing.

2) You monitor your entire company as though it were one big "job." What difference would it make if individual jobs were profitable, if you did not have enough of them to support the overhead structure and the costs for the company as a whole?

Major items to monitor are:

- overhead costs
- field-labor hours and costs
- equipment costs

These are the items you need to be checking constantly in order to run your entire company and not just your individual jobs.

The budgeting and controlling process for a landscape and irrigation contracting company is a never-ending series of events that often occur simultaneously: goals are set; action is taken; progress is monitored, adjusted and fine-tuned. The goal is to have your company run smoothly during all the chaos.

Estimating budgets recover costs

Three types of budgets are used to plan and control the business:

- the estimating budget: to help you bid your work and recover all costs;
- the accounting (or tax) budget: required to meet government and tax regulations;
- the cash flow budget.

The cash flow budget is designed to help you predict cash flow, identify those periods of weaker cash flow, so you can compensate if necessary by means of a loan

Supers: computerize & categorize!

1) Get a computer! You'll save the cost of it in one year by tracking your own expenses and comparing them to the Profit/Loss sheet put out monthly by your controller. You will be surprised how many items can be coded into your department that don't belong there!

2) Break down your accounts much farther than what the board of directors or owner receives. For example: most clubs have an account number for "Chemicals." Break the "Chemicals" category down into divisions: fungicides; herbicides; insecticides; pond/lake care; rodenticides; soil penetrants; permits.

Be sure you break down your "Manager's Expense" line item into many categories. Smaller dollar amounts in each category will look better to a budget committee and enable you to get more for education, dues, licenses and travel.

Break down your line items to make it easy to answer surveys, and questions from members or supervisors.

3) When you budget "Capital Equipment" expenditures, always budget at "List Price." This will give you room for price increases, and maybe for an unexpected item that may be needed. When it comes time to buy, you can then negotiate prices with your vendors.

I note in my proposal that these prices are list, and should come in 10 to 15 percent lower.

Don't be afraid to ask for all the equipment you might need. If you don't ask for it, you won't get it! Having these items on "Proposed Budgets" leaves a good paper trail when the time comes that you are asked, a fairway mower broke down during the week of the year's biggest tournament.

4) "Proposed Capital Expenses to the Golf Course," or projects to be done in-house should be priced out at 20 to 30 percent higher than expected costs, similar to the profit a contractor would add. This allows for extra expenses that come up in most projects. A contingency of 10 percent should be added to all projects that are to be bid by contractors for the above same reasons. □

Corey Eastwood, CGCS, Stockdale C.C., Bakersfield, Calif.

or increased line of credit.

The estimating budget is developed in 12-month increments, not necessarily a fiscal or calendar year. It can be either, but we can also develop a budget for the immediate next 12 months, starting at any time during the year.

It is easier to prepare an estimating budget parallel to a company's fiscal year—which may be the calendar year—but it is not necessary to do so.

I tell seasonal contractors that it takes two to three seasons to really get your operation under control, to get it running smoothly. Businesses with year-round sea-

sons, such as those in Southern California or Florida, usually take about the same amount of time to achieve the same results. This may seem like a long time, but remember that there will be lots of other things to do while you are trying to implement the estimating system.

Think long term! The process takes time and persistence! **LM**

The author is a green industry business consultant and author of Estimating for Landscape & Irrigation Contractors, published by Smith Huston, Inc., Denver, Co. To order, call (800) 451-4588.

Weather smarts

for turf/landscape pros

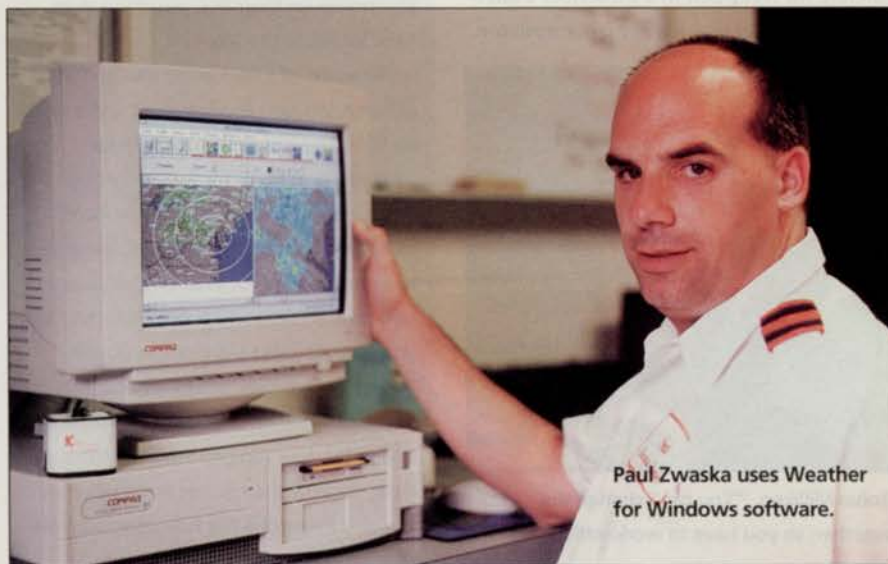
If you're still relying on your local "weatherman" for advice on planning your day's turf or landscape chores, it's time you read this.

by Ron Hall / SENIOR EDITOR

Paul Zwaska looked out his small office window onto the playing field of Orioles Park at Camden Yard and concluded that he had to delay the start of the day's game with the visiting Milwaukee Brewers.

The Baltimore grounds manager didn't base his decision on the clouds he saw building over the stands. He based it on the moving satellite images he was receiving over the PC in his office. The PC's monitor showed an irregularly shaped patch of green indicating a weather front, containing smaller patches of yellow and orange, rain, approaching the ball park from the northwest.

Behind the front Zwaska saw no activity on the monitor, meaning clear skies. And behind that, some more green blotches approached. He concluded (accurately, it turned out) that the Orioles and



Paul Zwaska uses Weather for Windows software.

Brewers, after the initial 20 minute drizzle delay, would have about three hours to play that afternoon's game before the next rain arrived.

When the mid-day drizzle stopped, the O's grounds crew whisked the tarps from the manicured infield and the game unfolded. At its conclusion, the rains returned, just as Zwaska predicted.

Zwaska received this accurate weather information from a software package, Weather for Windows, available only from Weather Services International (WSI), Billerica, MA. It requires a 386SX or greater personal computer with Microsoft Windows 3.1 or higher, and a modem.

Not all turf/landscape managers need such an exact picture of the weather. But, since it's easy and affordable to get, why not? Up-to-hour radar images and, depending on the service, 15-minute updates are literally available to

anyone thanks to today's radar and satellite technology. Weather information can be accessed through desktop monitors, either a personal computer or one supplied by a contracted forecasting service.

Turf/landscape business owners and managers can use this knowledge to schedule work crews (construction, mowing, snow plowing) and chemical applications. It helps them irrigate efficiently too. In fact, it's difficult to think of any turf or landscape task that's not dependent upon the weather.

"In our business, weather is a huge factor. It can make you or break you," acknowledges Robin Milliken, H&R Landscape & Lawn Care, Overland Park, KS. "You can't change it, so you have to work with it."

Late in 1995 Milliken's company contracted with Omaha, Neb.-based Data Transmission Network Corporation for a DTN Turf Manager weather system. "We can pull up current conditions; city-by-city temperatures, overnight lows, predicted highs, surface winds, the possibility of precipitation. The information is updated every 15 minutes," says Milliken.



Hourly radar images of approaching rain tell the crew at Oriole Park at Camden Yards if they need to ready the tarps.

Instant uplinks

Here's how the DTN service works: The company's weather center receives weather information from numerous sources, including the National Weather Service. The data is instantly uplinked to a satellite for reception to a subscriber's satellite antenna and into his/her color monitor.



Robin Milliken, "You can't change the weather, so you have to work with it."

Nineteen regional radar maps indicate county-level precipitation. Image maps are updated every 15 minutes. Users lease the antenna and monitor from DTN which describes the monitor as an "easy-to-read electronic magazine." It's not a PC, like Zwaska uses in at Baltimore's Camden Yard.

Gary Wilder, Director of Golf Maintenance at Calloway Gardens Resort in Pine Mountain, GA, has been using the DTN system for several years and describes it as one of the most valuable tools he uses.

"The first thing I do when I arrive here in the morning is look at it, and it's the last thing I look at when I leave," says Wilder. "I have six superintendents who work with me here, and in an eight-hour-day, we probably use it all eight hours."

Wilder says the weather forecasts provided by the system allow his managers to more efficiently schedule their labor needs along with more obvious benefits such as the application of chemicals, fertilizer and irrigation.

"We've had cases where we would come in expecting to spray fungicides on the greens, and with over 300,000 square feet of greens that quite an expense. The

Navigate the 'Web' for weather data

Weather information is available on the Internet.

In fact, turf/landscape managers can call up local and regional forecasts, including long-range forecasts, with just a few keystrokes on their PCs, assuming they have access to the Internet.

All kinds of information can be found at cirrus.sprl.umich.edu/wxnet, a site developed by the University of Michigan.

If you don't want to wade through this much information, call up www.intellicast.com/ right away. Intellicast is a registered trade mark of Weather Services International (WSI) which provides the radar and Nexrad (Next Generation Doppler Radar) images over the Internet.

Need a one-hour update of the Nexrad image for your region? Find out the three letter code of the nearest large city near you and keystroke the following address, calling up Cleveland, for example:

www.intellicast.com/weather/cle/nexrad/.

Or, the Detroit site:

www.intellicast.com/weather/dtw/nexrad/.

For a larger radar view of your region use the same address with appropriate 3-letter city codes, but replace the final word "nexrad" with the word "radar".

If you don't know the three-letter code of your city, you can access the radar and Nexrad images you want by entering cirrus.sprl.umich.edu/wxnet/radsat.html. This should give you a map of the U.S. showing every major city. Click on the icon of the city you want, and wade through several icons to retrieve the weather information you need. Depending on the speed of your PC and your Internet access provider, it shouldn't take you more than couple of minutes.

Be advised, this weather information is not "real time." It is, at best one hour old.

If you can add to this information for the benefit of other turf/landscape managers, please contact Ron Hall, Landscape Management magazine, 216/891-2636. Fax: 216/891-2683. E-mail: lscape@en.com



Weather forecasts allow managers to more efficiently schedule their labor needs and not risk wasting product applications.

local weather forecaster here might say there's only a 20 percent change of rain, but when we look on the radar and see the rain is almost here, we hold up and don't spray," says Wilder. "We've literally saved thousands of dollars."

Significant savings also come from more

precise scheduling of work on the resort's 63-hole complex. If Wilder can look at the DTN images and determine that rain, say, will last all afternoon, he can let the workers go home. "It can save us as \$250 an hour on a normal hourly rate," he says.

David Mellor, assistant director of grounds at Milwaukee County Stadium, has been using the system since last April. "When we got it I wasn't sure how helpful it would be and I was worried that it would be so technical that you would almost have to be a meteorologist to use it. But you don't," he says.

Grounds Manager Gary Vanderberg will often ask umpires to view the images during game rain delays. "To be able to see the weather like that really lets you know what's going on," says Mellor.

For more information about Weather Services International's Weather for Windows software package contact John Bosse, WSI, 508/670-5000. For information about DTN Turf Manager contact Jay Ferguson, 800/610-0777.

Controlled-release nitrogen

by BILL KNOOP, Ph.D. / Technical editor

We all know that plants cannot survive without nitrogen, however, the amount of nitrogen required varies from one species to another.

Woody plants, such as trees and shrubs, usually don't need any more than the environment can supply naturally. All flowering or fruiting plants, including most of the herbaceous annuals and perennials can't tolerate much nitrogen. If they receive too much nitrogen, most of their growth goes into stem and leaf growth rather than into the production of flowers and fruits.

Turfgrass is the exception to the "go slow" rule, for several reasons.

Needed for turf density

With all other factors being equal, the thicker or more dense a turf, the more nitrogen the turf needs to maintain that thickness. Turf density is directly related to the supply of nitrogen. In the average situation, if a turf does not receive any nitrogen from an outside source such as an organic or inorganic fertilizer, the chances are the turf will be thin and not have a good color. Nitrogen is needed for chloro-

phyll and the more chlorophyll in the plant, the greener it becomes.

When a turf receives the correct amount of nitrogen, it becomes denser, and is more able to:

- ▶ fight off weed invasions;
- ▶ tolerate foot traffic;
- ▶ endure athletic activity; and
- ▶ resist attacks from insects and diseases.

Excess N causes thin cell walls

Problems can result from over-application of nitrogen, most notably disease. When the plant takes up too much nitrogen, its cell walls become thin, which makes it easier for a fungi to invade. These plants also have a higher than normal water need.

Some soluble forms of nitrogen fertilizers have a higher salt index. If a turf receives too much of a nitrogen material that has a high salt index, "fertilizer burn" may occur.

How to choose

Nitrogen is available in two basic forms: inorganic and organic. Which do you choose? Look at it this way:

1. Plants have a preference for the inorganic—or

Before you apply

1. Perform a thorough soil test, with samples taken from around the entire property.
2. Know how much slowly-soluble nitrogen the fertilizer contains. The more the better.
3. The slowly-soluble products cost more, but they last longer, and do not tend to produce negative effects that may be attributed to soluble materials.



nitrate—form of nitrogen.

2. There are two primary organic forms of nitrogen. One is a man-made organic called urea, the other or others are all the naturally-occurring organic materials such as sewage sludge.

3. The organic forms are converted by

bacterial action in the soil to the plant preferred nitrate form.

4. The soluble nitrate form is quickly available to the plant. This usually causes a rapid increase in the plant's growth rate. Again, the plant may develop very thin cell walls. The water requirement goes up but

the overall effect is rather short lived. Nitrate nitrogen just doesn't last long in the environment. It's very leachable and may even be lost as a gas.

Nitrogen may either be a solid, a liquid or a gas. The goal of a fertilizer program, in addition to providing all the needed nutri-

Nitrogen sources vary

Coated nitrogen sources

1. Sulfur coated urea (SCU): release occurs as water moves through tiny cracks and pinholes in the sulfur coating.

2. Polymer coated urea (PCU): Urea granules with a polymer coating. Water diffuses through the coating to dissolve urea. Release affected by temperature; is more rapid in summer.

3. Sulfur and polymer coated urea: Polymer coating is added to the SCU as protection, and to slow the movement of water into the core. Combines cost advantage of SCU and improved release of PCU.

Synthetic nitrogen sources

1. Isobutylidenediurea (IBDU): release is controlled by water. Not affected by temperature as much as PCU; effective in cool seasons.

2. Urea-formaldehydes (UF): Organic molecules of varying size and solubility. Release of nitrogen is controlled by microbial breakdown; more rapid in warm months.

3. Natural organic: Many sources are available in this form, including sewage sludge and animal manures. Nitrogen is released by soil microorganisms. Temperature, soil pH, moisture influence the rate of nitrogen release from non-synthetic organic sources.

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027/197

ents, should be to supply them at the same rate as the plant can use them. In order to get as much to the plant as possible, a nutrient that is completely soluble must be applied frequently in very small amounts. If the nutrients are being applied through an irrigation system, then using soluble ma-

terial is easy.

Since most managers are only set up to use dry materials, the use of solubles may not be very practical.

Of all the mechanically-applied turf-grass nutrients, nitrogen is the most used. It's the key growth and color producer. In

the past, high growth rates were ideal, but we have learned that plants, especially turf-grass, can be produced in higher quality with a slowly soluble or "controlled release" material.

Slow and steady wins the race

In most landscape situations, managers have found that it is desirable to use the slowly soluble nitrogen materials as a matter of routine. Most agree that plants are

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The goal of a fertilizer program: provide essential nutrients at the same rate as the plant can use them.

much better off if they grow at a slow, steady growth rate rather than at the accelerated rate produced by soluble nitrogen materials.

There are several turf areas—golf course putting greens and athletic fields—that need fairly high growth rates. Those rates might justify using a combination of quick and slow release nitrogen sources.

The source of nitrogen—soluble or slowly soluble—and the rate at which it is applied can be used by the landscape manager to control growth rates and other growth characteristics, such as turf density.

Nitrogen is nitrogen. The plant primarily uses the inorganic nitrate form no matter which form you buy. Conversion of nitrogen from its other forms to nitrate is a natural process that does not require any help from us. The bacteria are capable of "doing their thing." We do not need to add anything to the system to make this work. **LM**

Zoysia's new stars

by RON HALL/ Managing Editor

The breeding program at Texas A&M University releases four new zoysiagrasses to fill a range of market niches

Dr. Milt Engelke has been working with zoysiagrass since 1982. He's part of a team carrying on and enlarging some of the work begun by the late Jack Murray at Beltsville, MD. Last year Engelke started to see some of these efforts pay off when Texas A&M University released four new cultivars.

They were developed in cooperation with the USGA.

"We can't turn out a variety overnight," says Engelke in somewhat of an understatement. "It's taken 16 years to get to this point, and I'm just pleased to be where we are."

Now that the new zoysiagrasses are released, and will soon be going to production fields, he's confident that they—and other zoysia releases to fol-

low—will revitalize interest in the species. That's because zoysiagrass, generally speaking, is noted for its salt tolerance, tolerance to temperature extremes, low fertility needs and low moisture requirements.

While most turf experts feel that zoysiagrass, at its best, gives about 90 percent of the performance of bermudagrass at its best, zoysia generally does so with considerably less fertilizer, water and chemical controls. It's also more shade tolerant.

"We've had enough death losses (winterkill) in bermudagrass in the last few years that the industry is thinking more about zoysiagrass again. We're starting to get a zoysia mentality buildup," says Engelke.

Late last summer, LANDSCAPE MANAGEMENT walked the breeder plots at the The Texas A&M University Research and Extension Center just north of Dallas and saw first hand the four new cultivars that were being released. Going into production are:

Palisades Zoysiagrass, a vegetatively propagated clone of *Zoysia japonica*, medium textured, shade tolerant, cold hardy, low water use and rapid recuperative ability. It is intermediate in salt tolerance. Palisades will be suitable for use as a warm-season turfgrass for golf course fairways and roughs, and under shaded areas throughout the transition zone, home lawns, sports fields, industrial parks and highway medians. Optimum mowing height will range from 1/2 inch to 2 inches. On tees and fairways, mowing heights of 1/4 inch to 1/2 inch are possible with acceptable results.

Cavalier Zoysiagrass, a *Zoysia matrella*, vegetatively propagated, fine texture, long, narrow leaf, with low rhizome but high density stolon production, good to excellent salt tolerance and good shade tolerance. It is resistant to the fall armyworm and the tropical sod webworm. It is intermediate in its growth and recovery rate. Cavalier has good winter hardiness and will persist in regions north to Kansas, Missouri and southern Illinois. It will find its primary utility in home lawns, golf course fairways and tee boxes, and in parks, sports field and other recre-



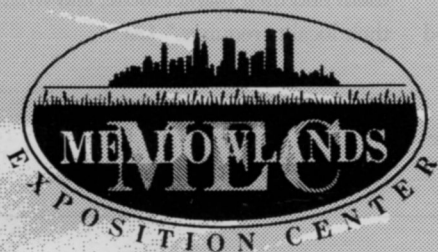
Winter kill of bermudagrass is prompting a new look at zoysiagrass, says Milt Engelke. Shade tolerant zoysia requires less fertilizer, water and chemicals.

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Diamond Zoysiagrass, a *Zoysia matrella*, with fine texture, high rhizome and tiller density, superior salt tolerance and rapid regrowth and recovery from damage. Also, vegetatively propagated. Because it will tolerate close, frequent mowing, it's commercial value includes golf putting greens in the Gulf Coast and tee boxes in full sun and under moderate to heavy shade. It generally lacks sufficient winter hardiness to be used in open areas for turf north of the Gulf States.

Crowne Zoysiagrass, a *Zoysia japonica*, vegetatively propagated, with a medium-coarse texture, good winter hardiness, good to excellent shade tolerance, reasonably good salt tolerance, and low water use requirement. It is characterized by aggressive regrowth by rhizomes and stolons. The

harvest cycle of Crowne can approach 8-12 months, in contrast to the industry standard "Meyer" which averages 15-24 months. Its area of adaptation extends northward to north-central Kansas. It tends to scalp under close or infrequent mowing. Generally, it lacks turf performance under close-mowed conditions and is suited for industrial parks and roadsides with excellent competition against weeds.

Adds Engelke, "The most important thing, from my perspective, is that we release these grasses into the marketplace, and that we work with the people and help them find their market niche, and what their locality requires." **LM**

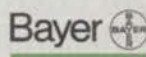
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Week 2



Week 3



Week 7



Week 8



Week 9

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Week 4



Week 5



Week 6



Week 10



Week 11



Week 12

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The text comes from a poster at a fast food restaurant. And there's more: Uniforms! Good hours! Be part of an exciting team environment! Meet new people! Salaries start at \$6/hour! Management opportunities!

In terms of competition with the green industry, the mass marketing that has made our fast food giants so good at getting people to buy, now extends to their tactics for getting people to *work* in the stores.

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People who are not in the know think working on a golf course means heat, and sweat and sunburn and misery. They don't know the benefits of the job: exposure to agronomy and turf management, both of which are fascinating subjects; lush green grass; eating lunch in the shade of an old oak tree; watching the sun rise over the trees; the serenity of the course in the early morning hours; the prestige of a well-managed golf course; watch-

ing a foursome hit up onto the green or blast away at a tee shot; and free golf.

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The Ohio Turf Foundation held a Job Fair during the OTF's December trade show. Here's what some of the advertised jobs were paying:

- ▶ Assistant superintendent, full time: \$22,000-\$25,000 plus vacation; health; dental; savings plan.
- ▶ Horticulturist: \$17,000-\$19,000; must know IPM diagnostics, consultation.
- ▶ Golf course horticulturist, \$8-\$10/hour. Re-

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Good pay!
Free golf!
A career!



Terry McIver

TERRY McIVER
Editor-in-Chief

GOLF/GROUNDS

PAGE 4 G ▶

Plan how to pay for new facility

PAGE 8 G ▶

Crumb rubber to the rescue

PAGE 12 G ▶

Prairiegrass a 'natural' choice

PAGE 16 G ▶

GCSAA show preview

PAGE 18 G ▶

Annual tourney a benefit to golf

sponsible for flower gardens, trees, planting, purchasing. May be required to do golf course maintenance.

"\$18,000 works out to \$9 an hour. It's quite a bit above minimum wage, but to invest four years of college, it is disappointing," says Tim Rhodus, associate professor of horticulture at the Ohio State University.

"You can make more money if you move past basic horticulture work, and into more supervisory positions with companies...they want to see your ability to work with people."

Rhodus says many of his horticulture students are majoring in landscape horticulture, with an eye to becoming entrepreneurs.

"Their primary goal is to run their own business," says Rhodus.

The OSU horticulture department has a web site that lists horticultural positions available and student resumes, at no charge.

This way, says Rhodus, students have a look at a wider variety of opportunities, and get more exposure to higher paying positions.

E-mail to: rhodus.1@osu.edu. Phone number is (614) 292-3871.

Beginning next month in this space: we feature a guest columnist from the golf course industry. First up: Jim Snow, executive director of the USGA Green Section. **LM**

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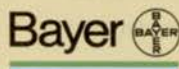
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new maintenance facility construction

Plan your construction well and refurbish what you can to make the new facility a project you look forward to. A contingency fund will help pay for it.

▲ Piles were driven to reinforce footings.

▼ The old storage area was due to be replaced.



Is your golf maintenance facility known as the maintenance “shed” or “barn” by your crews and golfers who play the course? If it is, you could have a problem—both with your department’s image and its quality of work.

Even if you can’t tell a book by its cover, you can generally tell the quality of a golf course maintenance operation by its building...barn...shed—whatever you call it. How the facility looks and is organized indicates how much money and effort is being put into the maintenance function.

“If the barn is unorganized and dirty, the quality of work follows,” says Joe Alonzi of Westchester Country Club, which finally completed a new maintenance facility last summer. “A well-organized maintenance center increases efficiency and responsibility.”

As Alonzi learned, sometimes the actual construction of such a facility takes a back seat to the planning and financial considerations that go before.

When he took over at Westchester in 1992, the board had approved construction of a maintenance

facility that had originally been proposed by Ted Horton (now at Pebble Beach) in 1987. Budget—as proposed in 1987—was \$700,000, so Alonzi’s first order of business was to get a 15 percent contingency fund approved.

“If we had built according to plan, we knew we would fall short of our needs,” Alonzi told attendees at the most recent New York State Turfgrass Association convention. Faced with five years worth of inflation, “we also knew it would be a challenge.”

Before...

Here’s how Alonzi took on pre-construction considerations:

- 1) He hired a building architect for \$9800. The

architect was responsible for obtaining permits and coordinating with a building fabricator.

2) The project was separated into three distinct parts: the 50-by-180-foot maintenance facility, a 2500 sq. ft. repair shop and a 6500 sq. ft. equipment storage area. The design included seven concrete storage bins and a wash station.

3) Bids were taken from eight contractors. Low bid was \$545,000 for one 9,000 sq. ft. building and an additional \$28,000 for a 10-by-48-foot pesticide storage building and \$25,000 for the wash station.

The bid also included a \$12,000 performance bond that was required by the club. Combined with the architect's fee, the cost projection was now at \$607,800.

4) Alonzi decided to repair the existing structure, to be used as an administrative building. That project included a new roof, new gutters, vinyl siding, new windows and remodeling the interior. Cost: \$75,000; total cost now at \$682,800.

5) Removal of soil bins was estimated to cost \$40,000, bringing the total cost to \$722,800, by which time Alonzi "knew we'd be in trouble" making the budget of \$700,000—even with the \$105,000 contingency money.

...and after

"The first problem was unacceptable soils—rock, muck and peat—during excavation," Alonzi remembers. "Construction was stopped after four days and we had to hire an engineer to oversee a new slab and new footings that ended up taking two months." Piles, a pile driver and cranes cost an additional \$50,000.

Next, new city specifications required an eight-inch water main for the fire protection system. The trenching company hit rock while installing the main and, due to a "rock clause" in the contract, charged an additional \$6,000.

By now, the project's total costs were at \$759,800—\$59,800 into the contingency



The original building was remodeled to be used as an administrative building. That project included a new roof, new gutters, vinyl siding, new windows and interior work.



Finished. The new facility at Westchester includes a 2500 sq. ft. repair shop and a 6500 sq. ft. equipment storage area.

fund. Tack on another \$19,000 to reinforce the main building's metal shell with plywood and bollards.

Finally, in March of last year, a "floating" concrete slab was poured in 25-foot sections to eliminate its cracking as the ground would settle and heave. Coarse asphalt was poured May 16th.

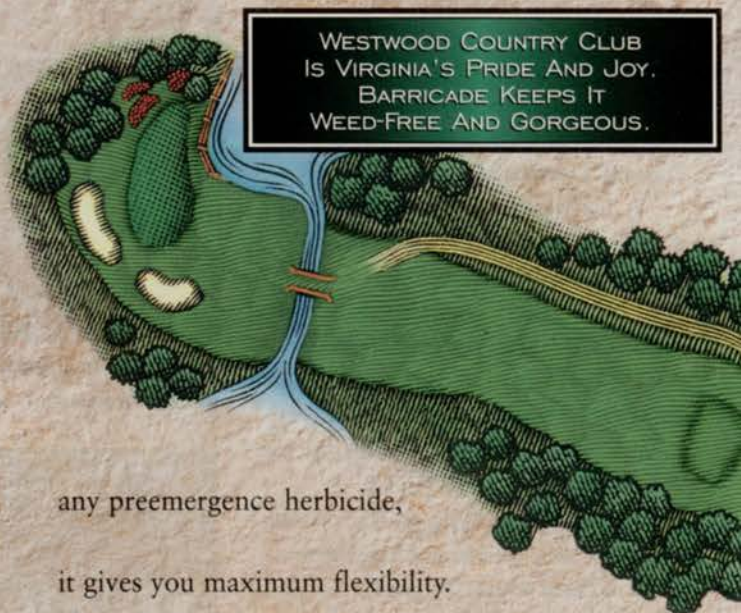
By June 12th, the building was 99 percent complete and the pesticide storage bin

started going up. On July 14th, the main building, the wash station and storage building had been completed, much to Alonzi's relief.

"We had \$25,000 left in the contingency fund," Alonzi told New York Turf attendees, "but it was really a long haul." □

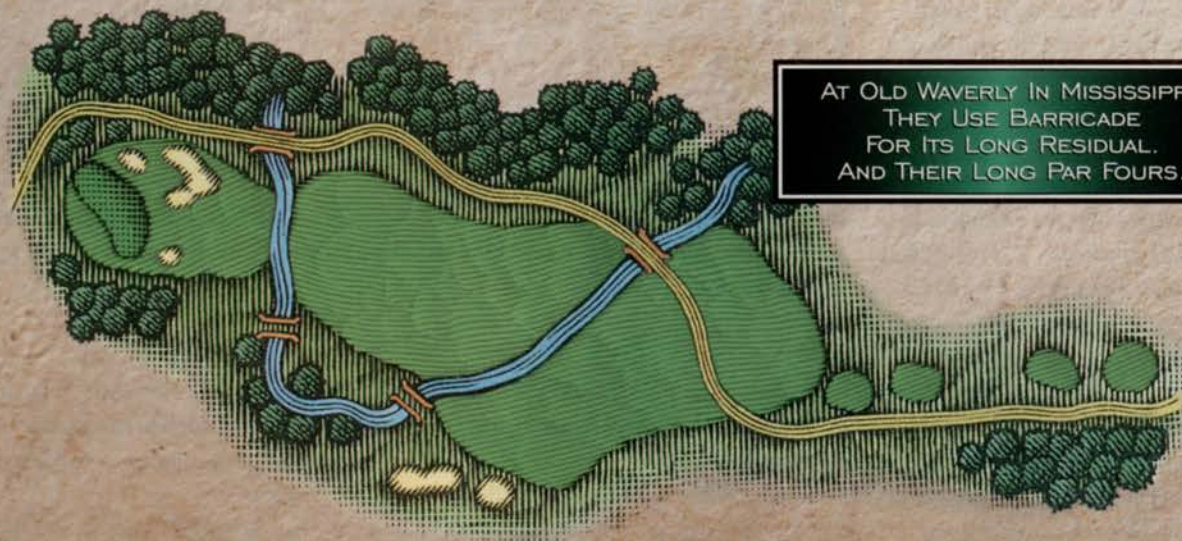
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Rubber to the rescue

A topdressing made from shredded used tires gives turfgrass managers another tool to combat turf compaction and traffic injury.

by RON HALL/
Managing Editor

Some professional users say a new crumb rubber topdressing is a valuable tool to alleviate compaction, protect turfgrass from heavy traffic and, at least one user believes, from winter kill of bermudagrass where that's a problem. The crumb rubber product is made from used tires.

How does it protect turfgrass?

Researchers Dr. J. N. "Trey" Rogers, III, and J. T. Vanini demonstrated at Michigan State University's Hancock Turfgrass Research Center that a $\frac{1}{2}$ to $\frac{3}{4}$ -inch layer of the crumb rubber material protects the crowns of turfgrass plants from traffic. They attribute this to the increase in surface area and the rounder edges of the shredded rubber, compared to sand which is often used in topdressing. And, because the rubber particles have less density than soil, they're not worked into the soil; they remain on the soil surface. More good news: after several years of testing, the researchers have yet to discover any environmental downsides to using the product either.

So far the crumb rubber has been used mostly in turfgrass mowed above $\frac{1}{4}$ -inch and subject to heavy foot or, in the case of a golf course, cart traffic. Typically it's applied $\frac{1}{2}$ to $\frac{3}{4}$ -inch deep either by a spreader or a topdresser.

It can be shoveled onto small areas too, and raked or brushed into the turf.

It helped protect turf

Mark Hoban, a certified golf course superintendent, learned about the product several years ago while visiting Michigan State University. "I thought, 'what a great idea,' even though it hadn't been tried on southern grasses," says Hoban.

Prior to last season, he applied crumb rubber topdressing to 11 areas of The Standard Club in Duluth, GA. The Standard Club is an Audobon Sanctuary-certified, 18-hole, 300-acre course just northeast of Atlanta. It has predominantly bermudagrass tees, fairways and immediate ruffs.

Hoban, 11 years at the course, used crumb rubber in areas where foot traffic badly damages turfgrass, like walk trails onto greens or around bunkers. But, he couldn't have anticipated that the 1995-96 winter was going to be so harsh.

"We had a big time winter kill this past winter," says Hoban. "But we only lost two of the 11 areas where we used the crumb rubber. The turf might have been thin in some of those areas, but it grew back during the summer, and I didn't have to resod. But 50 feet to the left or right of those areas that had the crumb rubber we had winter kill."

While his experiences with crumb rubber have been mostly positive, Hoban cautions against viewing it as a cureall.

"Even if you apply it, you won't have perfect grass if you have a lot of traffic, or the grass is in heavy shade, or you have very cold winters. But, it will probably keep you from having to resod the area," says Hoban.

Used on high-cut turf so far

The crumb rubber topdressing product—trade name Crown III—is produced from used tires after all the steel and nylon cord have been removed from them.

President Comelia "Comy" Snyder, specifically her company, JaiTire Industries, Denver, has the worldwide rights to market the topdressing. She licensed the patent from Michigan State University after researchers





Crumb rubber in areas where foot traffic badly damages turfgrass, like walk trails onto greens or around bunkers.

Rogers and Vanini assessed and documented its value on turfgrass.

This topdressing, unlike sand, is not used on golf course tees or greens. Not yet anyway. But, it is being increasingly used in areas where turfgrass is cut much higher. Say on a pedestrian mall of a campus. Or on a youth soccer field. Or at the entrance of a golf cart path. Actually, users seem to be finding new uses for crumb rubber topdressing at every corner.

Cornelia Snyder wants to establish Crown III in the professional market.

She says that JaiTire has 27 dealers across the United States, and reports that about 500 sites are using the crumb rubber topdressing. These include a handful of high-profile golf courses and sports fields.

One of the dealers offering Crown III is Benham Chemical, headquartered in Farmington Hills, Mich. General Manager Dan Banks says Benham has been working with the product almost since research began at MSU. Benham, working with the MSU turf team, supplied the crumb rubber used for some of the turfgrass areas inside the Pontiac Silverdome during the

World Cup soccer matches several years ago. He points out that the MSU-patented product is the only crumb rubber topdressing on the market.

Get the real stuff

"Turfgrass managers should realize how important it is to get the right source of rubber," says Banks. "There are different

grinds, different sizes and different qualities in terms of content."

One of Benham Chemical's customers this past season was Bill Rousseau, maintenance superintendent for Saginaw Township, Mich. The township bought enough crumb rubber to treat two youth soccer fields. Rousseau says he applied the crumb rubber with a commercial topdresser, three applications at $\frac{1}{4}$ -inch each to build up to a $\frac{3}{8}$ -inch layer.

"So far the results have been very good," says Rousseau. "We could see a difference in the grass. In the treated area the grass was standing and looking good, and right next to it where we stopped, it was matted down."

Many turf managers may balk at the \$480-a-ton cost for crumb rubber, but JaiTire's Snyder defends the price. Because the product is new, it requires extensive marketing, Snyder says. Also, there are significant expenses involved in acquiring, shipping and shredding used tires.

"The real question is the value," says Snyder. "If you apply the product to 100 square feet at the end of a cart path it's going to cost about \$50. But if you don't have to resod that golf cart path you've made that \$50 back and more." □

Mulch from shredded tires?

Scott NeSmith is researching the use of shredded tires as a mulch, both for agriculture and, possibly, for landscapes too.

"In terms of mulch, we can see right away that the properties are there," says the associate professor of horticulture at the University of Georgia. "It conserves moisture. It suppresses weed growth. It modifies the soil temperature some but it doesn't cool the soil quite as much as the pine bark does. We're trying to get a better look at that."

NeSmith began the work last year at the Griffin Research Station about 40 miles south of Atlanta. So far, he's put the shredded tire mulch around about 100 Christmas trees, and has other plots where trees are surrounded by pine bark mulch, sod or where treated with a herbicide. He's conducting similar experiments with blueberry plants.

NeSmith says he wants to determine if there is any long-term effects, either to plants or the environment, to using mulch made of shredded tires..

He says the material—it comes in different grades from several inches across to gravel-sized—might turn out to be the answer to areas that are difficult to get to, or too costly to mulch on a regular basis □

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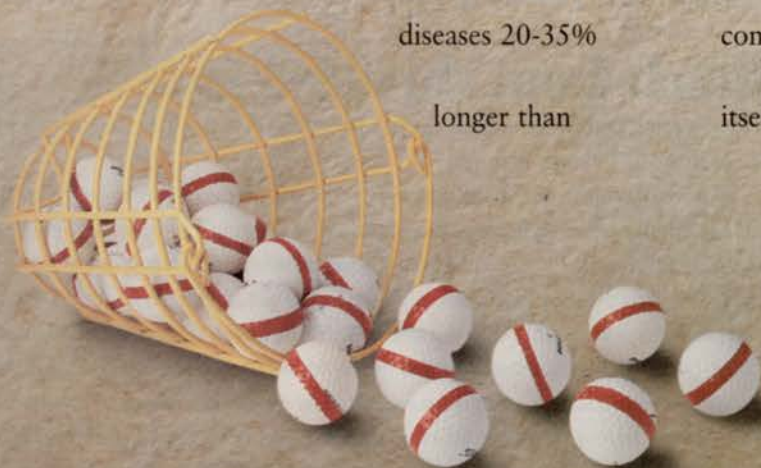
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Circle No. 150 on Reader Inquiry Card



Prairiegrass makes Merit Club a 'natural'

Management is the key to blending prairie into a championship-caliber course in Chicagoland area.

By RON HALL/ Managing Editor

More than 20 million acres of prairies greeted the first European settlers to what is now Illinois. The prairies shrank rapidly after John Deere in Grand De-tour, Ill., invented the self-scouring, steel-bladed plow. Settlers used the plow to turn

the vast grasslands into crop-land. Today, only 2,000 acres of the original Illinois prairies remain, says Kenneth R. Robertson of the Illinois Natural History Survey.

A group of farsighted individuals reversed the trend near Libertyville, IL. They worked as a team to recreate prairies within a championship-caliber

golf course, the Merit Club. The property also contains about 35 acres of protected wetlands and 40 acres of savannah containing mostly oak, hickory and linden.

Previously, the 500-acre Bert A. Getz estate, had been a farm. But Getz didn't want the land developed—not in the traditional sense anyway.

Instead, he convinced Ed Oldfield, former golf director at the Glen View Club, to assist him in planning a golf course. Oldfield convinced golf course architect Bob Lohman and veteran superintendent Oscar Miles to join the team.

Together they created one of Chicagoland's most unique and scenic golf courses. Meanwhile, Getz dedicated the 325 acres inside the golf course to the Core Lands Group and its Open Lands Project so that it would remain a perpetual green site.

Getz began building the Merit Club team in 1989, and the golf course opened for play on July 4, 1992. Ever since, it's been up to veteran superinten-

dent Oscar Miles to maintain the Merit Club's tees, greens and fairways, and also its natural prairies.

"The prairies make the course look natural so that when a person plays each hole, it's defined by the prairies," explains Miles. "Only three holes have native woods on them."

Maintaining a prairie is not an easy task, says Miles, not even with his 35-plus years of experience maintaining golf courses. It's an enjoyable challenge though.

"I was real fortunate here," says Miles. "When this course was being developed I was brought on the site to help prepare the budget and do the grassing plan with the architect and the course designer. Our goal was to do the course right the first time so we didn't have to do it over."

While the basic features of the course have remained intact since the course opened for play over four years ago, its prairies have not. Miles learned—and has come to appreciate—that prairies change



'Our goal was to do the course right the first time,' says Oscar Miles.

Starting a prairie not cheap

So you want to grow a prairie on areas of your golf course? Make sure your budget can cover it. To start one acre of prairie, Oscar Miles, superintendent at the Merit Club, Libertyville, IL, offers these estimates of material costs:

Quantity	Product	Cost
2 qts	glyphosate	\$25
44 lbs.	IDOT native prairiegrass mix	\$114
44 lbs.	sheeps fescue	\$90
11 ozs.	IDOT native forbs mix	\$166
5.5 lbs.	wildflower mix	\$127
440 lbs.	6-24-24 starter fertilizer	\$75
880 lbs.	woodfiber mulch	\$229

The total cost for materials is about \$926 per acre, says Miles, but the real cost will approach \$2,000 per acre when you factor in the cost of labor and equipment.

Most of the above costs are one-time, explains Miles. Many prairie plants produce their own seed once they're established. (IDOT is Illinois Department of Transportation.)



The prairie at the Merit Club isn't very attractive after its annual burn, but as spring arrives the tall grasses and wildflowers become a beautiful background for the Merit Club's golfers, most of whom walk the course.



about \$6000.

"You can't just put the grass and wildflowers out and expect them to take over. It's going to take work to get rid of the competition and do additional seeding to enhance the area to make it become what you're visualizing," says

Miles.

In March, workers, use a 15-foot rotary and a 72-inch mower to cut the 6- and 7-foot tall prairie grasses down to six inches. Miles wants the cut material to lay on the ground to get a more controlled burn. Since the club has always worked closely with the village of Gurnee, it has no trouble getting a permit to annually burn the approximately 75 acres of prairie on the course. The permit costs \$75.

Workers take precautions to make sure the burn stays controlled, including initiating smaller preliminary burns a day or so before the big burn. Also, a two-man crew stands by and mans a 300-gallon sprayer with 200 feet of hose during the burn. The burn rids the prairie of woody invaders like cottonwood and black willow saplings. Because the prairie grasses develop such deep roots (often 10 feet deep or more), and because their growing points are below ground, they're not harmed.

Miles has been careful to keep the tall-grass prairies out of play ("unless you're really wild"), and planted a blend of dwarf turf-type tall fescues and wildflowers in areas separating the playing areas and the prairies.

"Some of these grasses, big bluestem, Indiangrass and switchgrass, are beautiful, but they're so tall you don't want them in an area where you're going to play. You have to keep them in the background or over on the side," he says.

The crew at the Merit Club isn't hesitant to give Mother Nature a hand in keeping the prairies beautiful and ever changing, particularly areas surrounding tees and greens. After a burn, for instance, the crew will hand seed wildflower seeds in open spaces between clump grasses. Because there are usually fissures in the soil, the seeds germinate in the cracks.

Miles says he learns something new about prairies every day, and adjusts their management to what he's learned. He also listens carefully to what members are saying about the prairies. When they have good suggestions, he acts on them.

"Most of our golfers here love it and brag about it," says Miles. "They know it's a real treat to walk this course."

Established prairies don't need any additional nitrogen or irrigation. These practices promote too much green growth.

Miles has also learned that prairies need large areas. "If a prairie planting is too small, it doesn't work. It looks too man-made and forced." □

and evolve. They don't require the level of care he provides the Merit Club's fine turf, but they do require maintenance.

Fortunately, he has a separate budget for prairie management, some of which pays for a crew of four or five workers to walk the prairies on the course several weeks each June and chop down weeds before they flower and go to seed. The weeds are piled, taken away and burned. Miles says it costs



Superintendent Oscar Miles says prairies sometimes need help.

IT WHISPERS WHILE



Photographed at Blackwolf Run, Kohler, Wis.

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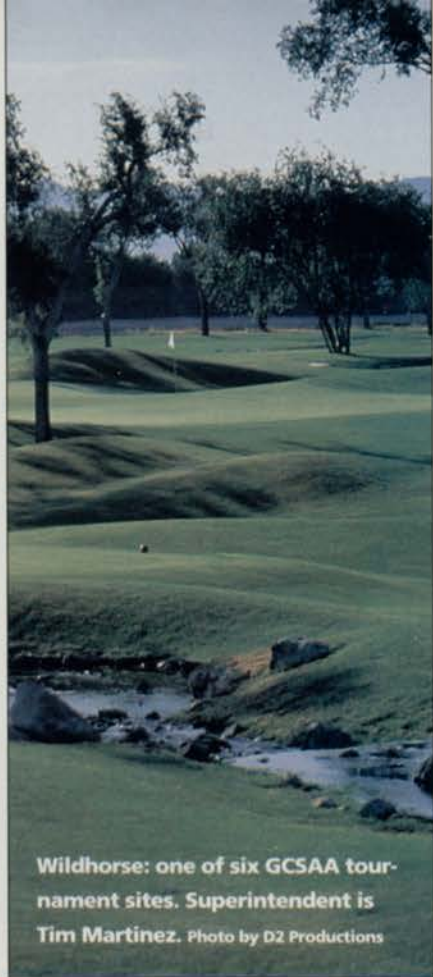
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Wildhorse: one of six GCSAA tournament sites. Superintendent is Tim Martinez. Photo by D2 Productions

Also on the bill at the annual show: 700 exhibitors, 78 seminars, the annual tournament, and astronaut Jim Lovell. No problem here, Houston!

The 68th International Golf Course Conference and Show, presented by the Golf Course Superintendents Association of America, features awards given to noted industry trailblazers and a talk by a pioneer who once was out of this world:

► Acclaimed golf course architect Michael Hurdzan, Ph.D., receives the GCSAA's President's Award for Environmental Leadership during the golf course industry's premier event, held Feb. 6-12 in Las Vegas. The award is presented in recognition of an individual's contribution to stewardship of natural resources.

► Ben Crenshaw receives the Association's "Old Tom Morris Award," for his contributions to the game of golf—as both a player and agronomist—during the

Golf greats Hurdzan, Crenshaw at GCSAA

GCSAA Gala '97, on Feb. 11.

► Capt. James A. Lovell, spacecraft commander of the Apollo 13 space flight, will speak at the Saturday, Feb. 8 opening session—sponsored by United Horticultural Supply—with a presentation that includes anecdotes from the never-completed 1970 moon mission.

Many suppliers, many seminars

International exhibitors will display their products and services at the Las Vegas Convention Center Feb. 10-12.

More than 450,000 square feet of convention space features equipment, architecture and turfgrass seed.

The educational sessions at this year's show will address every management concern. In partnership with Ransomes/Cushman/Ryan, a total of 78 GCSAA seminars will be offered Thursday through Monday, Feb. 6-10, including six new seminars and eight seminar titles which will be offered twice. Conference education sessions and forums are scheduled Sunday through Wednesday, Feb. 9-12. An extra day of session and forum programming is offered at this year's show.

The politics of golf

On Feb. 10, a panel of five golf industry experts explores how to manage the politics of the golf course in a session titled, "Politics is to Golf Courses like Drought Stress is to Turfgrass."

Each panelist will give a short presentation to provide a framework for discussion, and moderator Tommy Witt of Wynstone Golf Club, North Barrington, Ill., leads the discussion. Panelists include Dennis Lyon, CGCS, City of Aurora Golf Division; and Bob Brame, CGCS, director of the USGA Green Section North-Central Region.

A new seminar features three panelists who will relate their experiences with gov-

ernment regulation in the workplace. Panelists include political consultant Michael E. Dunn, with advice on how to deal effectively with government; James Husting, CGCS, Woodbridge Golf & Country Club, Woodbridge, Calif.; and Darren Davis, Olde Florida Golf Club, Naples, Fla. Husting and Davis will explain how they tackled state legislative and regulatory issues. The seminar will be held on Feb. 10 from 1 to 4 p.m.

Journalists debate

The Government & Environmental Session, sponsored by Ciba Turf & Ornamental Products, the Jacobsen Division of Textron, Rain Bird and Pursell Industries, features a version of *The McGlaughlin Group*, the Washington, D.C.-based talk show. Scheduled participants are program regulars Fred Barnes and Eleanor Clift, and golf course developer Kim Richards. □

SEMINAR HIGHLIGHTS AT 1997 GCSAA SHOW

Sunday, Feb. 9

- Volunteer Uses at the Golf Course
- Ending the Privatization of Public Golf Facilities
- Golf Course Water Quality
- Green-Type *Poa annua*

Monday, Feb. 10

- Maintenance building construction
- Night management practices
- Managing bentgrass in warm climates

Tuesday, Feb. 11

- Lightweight rollers
- Simplified training
- USGA Turf Tips

Wednesday, Feb. 12

- Successful environmental plans
- How to adopt a school
- Drainage installation techniques
- Irrigation technology update

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Annual tourney a benefit to golf

The Prestonwood Country Club team from Cary, NC took first place in the 10th Annual John Deere Team Championship Golf Tournament at Pelican Hill Golf Club, Newport Beach, Calif.

Winning team members: Ron Gilmore, superintendent; Greg Guman, Golf Professional; Don Thomas, club manager; Vance Heafner, club president; and Chris Revels, representative of John Deere golf and turf products distributor Revels Tractor Co., Inc.

Recognition for golf course personnel

The international tournament was initiated in 1987, as a way to show appreciation and recognition for the people who work behind the scenes at a golf course.

"These are not just great teams of golfers, but great teams of golf course professionals," says Jeff Gredvig, general manager of John Deere's Commercial

Grounds Care Products Division.

"John Deere is proud to recognize these teams not only for their skills on the course, but for helping design and maintain courses that challenge the skills of every golf enthusiast," says Gredvig.

Competing teams were composed of the golf course superintendent, the golf professional, the club manager and club president (or two other members of the top management team).

The teams were later joined for the tournament finals by a representative from their local Deere golf and turf products distributorship.

Stiff competition

Each team competes locally to determine its slot in the finals. A total of 924 teams played in 32 local tournaments in preparation for the final. The Prestonwood Country Club team earned the right to compete by winning from among 32 teams at the local tournament held at Grandover



Prestonwood Country Club's winning team. From left, Ron Gilmore, superintendent; Greg Guman, golf professional; Don Thomas, club manager; Vance Heafner, club president; and Chris Revels, Revels Tractor Co.

Country Club, Greensboro, N.C. The local tournament was sponsored by Revels Tractor Co. of Fuquay-Varina, N.C.

The tournament does much to support two major industry associations. John Deere contributes \$20 for each of the teams competing at the local tournaments to either the Golf Course Superintendents Association of America Foundation or the Canadian Golf Superintendents Association Scholarship fund.

"John Deere has always felt that it's important to give back to the industries we support," says Gredvig. "Over the past 10 years, John Deere has given more than

\$120,000 to the respective golf course superintendents associations. As a company and as an organization, we're pleased to make this contribution."

This year's tournament resulted in a gift of \$14,220 going to the Golf Course Superintendents Association of America, and a \$4,260 gift to the Canadian Golf Superintendents Association.

Placing second in the tournament was the team from the Caledonia Golf & Fish Club, Pawleys Island, SC.

Finishing in third place was the team from Desert Mountain Golf Club, Scottsdale, AZ.

All-around team approach to work

Bringing together the various personnel involved in running and supplying a golf course helps them understand each others point of view, improves communication and increase the respect for each person's

responsibilities.

"Superintendents today are more focused on the big picture of how our courses are perceived by golfers, the community and the general public," says Don Hoos, superintendent at Pelican Hill.

"We'll need to incorporate all the education, training, resources and technology available to keep our courses and our role as superintendents in a positive position on environmental issues in the future." **LM**

(Look for more on Hoos and Pelican Hill in our February issue.—ed.)

Here's One Birdie You Don't Want To See On Your Course.



Golf was never meant to be a water sport.

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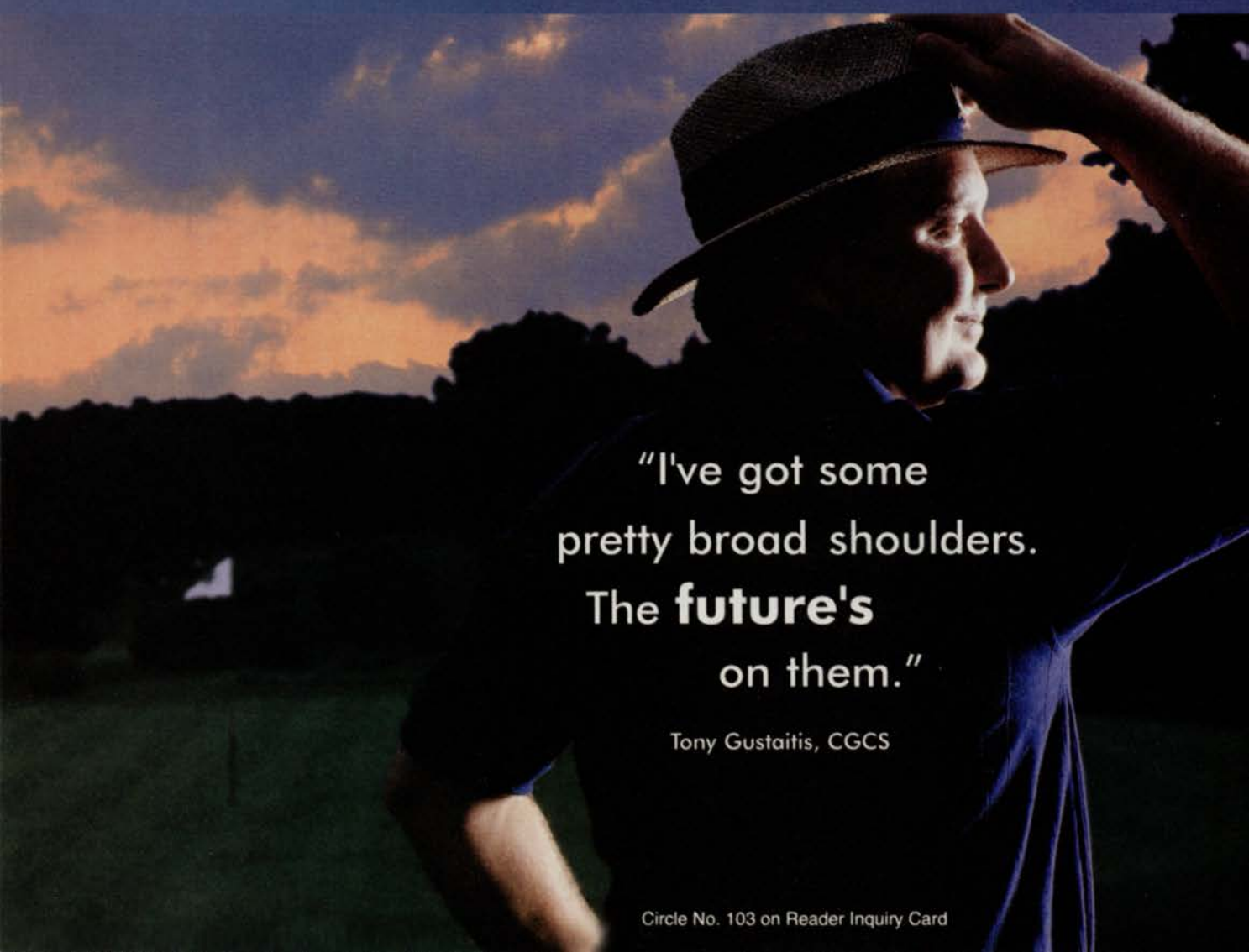
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"I've got some
pretty broad shoulders.
The **future's**
on them."

Tony Gustaitis, CGCS

Circle No. 103 on Reader Inquiry Card

Bigger TG-CL means more of the same for LCOs



Ron Hall

RON HALL
Managing Editor

“I tell my guys not to worry about what anybody else is doing, but to go out and do what they're supposed to do,” said one longtime Ohio lawn care operator.

“I only wish I'd bought a thousand more shares of Barefoot,” responded his colleague.

What brought them together was the annual Ohio Lawn Care Association luncheon and business meeting on Dec. 11, 1996. The two friendly competitors were discussing the announcement that ServiceMaster intends to buy Barefoot, Inc.

The deal will merge America's two largest lawn care companies. TG-CL, with revenues of \$630 million in 1996, will absorb Barefoot which had sales of about \$125 million.

(For the record, nobody from either TG-CL or Barefoot was at the luncheon.)

The deal reminds us that business, after all, is numbers. And more numbers. Like the \$4.5 billion in worldwide revenues that SM reported in 1995.

Or the Barefoot stock that the one LCO at our table wishes he had bought a lot more of, considering he bought below \$10 and SM has offered Barefoot \$16 a share.

But, the deal took about everybody in lawn care by surprise. Otherwise, we would have all mortgaged our farms and cashed in.

The prospect of an even larger TG-CL and the disappearance of Barefoot didn't dominate our lunch conversation. It didn't generate the same energy and interest other deals did a decade ago. That's when this takeover fun really began.

Remember Waste Management trying to get ChemLawn, and EcoLab finally acquiring it? Or when Wayne Huizenga got a controlling interest in TruGreen just before Waste Management stepped into the picture?

EcoLab's CL and Waste Management's TG

[LAWN/LANDSCAPE]

PAGE 5 L ▶

Doppel wins environmental award

PAGE 8 L ▶

10 low maintenance design tips

PAGE 12 L ▶

Have a goal for customer survey

PAGE 16 L ▶

Deer control in demand

PAGE 18 L ▶

Trees & turf one city's trademark

did horribly. More than a few people blamed it on “a mature industry”. They said: “there's not a lot of room for growth anymore” or “we sure miss the excitement of the old days”.

You can bet there's a lot of excitement at the SM's Consumer Services Division in Memphis.

SM took over TG in 1990 as part of a deal to get Terminix. Within a few years, it had TG on its feet again. Then, incredibly, it snapped up and absorbed much larger CL. That opened eyes.

TG-CL has been buying companies ever since. So when TG-CL's Bob vonGruben spoke at the 1995 PLCAA Conference on the topic of buying and selling a lawn care company it seemed like just about everybody showed up.

For independent LCOs not much should change. If they've been competing against giant TG-CL, they'll just have to keep battling. They'll have to keep doing what they do best.

Of course, the other option is that they can sell the business. **LM**



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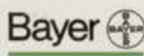
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I remember my mother often saying that when something was hard to find, it was like looking for a needle in a haystack. Reversely, sometimes I think that searching for new employees is like looking for a haystack among needles. In other words, we often miss the obvious.

If the green industry labor shortage is as severe as many claim, then it pays all of us to review some of the basic ways in which we can search out our new employees.

What do the experts say?

Looking for a haystack in the needles



BOB ANDREWS
Contributing Editor

1) Often the best source of new employees are current ones. If your shop is a good place to work, and your staff knows what kind of help you are looking for, encourage employees to refer their friends and acquaintances.

This has two benefits. First, the potential hire may already know something about your business and the work involved. Secondly, your current employee is unlikely to refer a poor candidate

since subsequent problems with that candidate would reflect badly on them.

2) Customers often turn out to be a surprising source of good employees. One of our best came from a customer whose business was downsizing and had to let this person go. We were both in the right place at the right time. However, none of that would have happened had the customer not known of our need. Newsletters are great for this as are leave-behinds in your invoices.

3) As business owners, and as an industry, we need to be more involved in the vocational departments of our local schools. In talking to some of them, I found real interest in knowing more about opportunities in the lawn care industry. Others told me of their frustration in training students for jobs which did not then exist, or training

them in manufacturing skills when the marketplace increasingly called for service sector employees. Either way, there appears to be an opportunity here. Our Indiana State Lawn Care Association Board recently began researching how it can be more involved in vocational education.

4) More and more industries are looking to job sharing when it comes to meeting their employment needs. Simply put, it is often far easier to find two part time people to fill one fulltime job, than it is a single person. Our community is full of men and women who already have a career position but who are looking for additional dollars.

One LCO I know uses fire fighters to fill in as turf specialists. He has two routes, and four such folks to fill them. Takes a little more juggling and management, but it does get the job done.

In a similar case, the lawn care company employs second shift factory workers for four or five hours during the day. An added bonus here is that such employees may already have a benefit program through their fulltime job and, thus, will not be looking to you for one.

5) Recruiting "out of season" is something we all should consider. Before you suggest that I have my head examined, think about the real costs of passing up a good new hire simply because your business is in downtime. Such periods are often those in which someone else has laid off a qualified employee. Or perhaps an individual is looking to make a change.

Hiring during such periods also gives you ample time to train the new hire and have that person up to speed when the season starts. Most importantly, the payroll dollars you spend employing that person over the winter may seem paltry compared to headaches you could face by not being able to find needed help during the spring rush.

Many of us have to continue to rely on traditional sources for new employees. A first step is to search out previously unexplored ways of finding such people, or revisit some tried and true methods. **LM**

He writes...he scores!

Timothy J. Doppel is not widely known as an author, not outside of the Detroit area anyway. He's the owner of Atwood LawnCare, Inc., in Sterling Heights, Mich.

Doppel however, earned PLCAA's Fourth Annual Environmental Improvement Award in 1996—sponsored by *LANDSCAPE MANAGEMENT* magazine—partly because of his writing talents. He used these

talents to help educate homeowners and professionals alike in southeastern Michigan about the responsible use of quick-release fertilizers and pesticides. These efforts resulted in him authoring the book, *The Healthy Landscape: Landscape Care for a New Century*.

The book contains a series of articles that he wrote for the *Landscape Architect*, the monthly magazine of the Metropolitan Detroit Landscape Association (MDLA). The articles detail responsible use of fertilizers and pesticides.

The book resulted from his involvement as a technical resource person on the steering committee of an organization known as the Healthy Lawn and Garden Project. Its purpose was to reduce the use of quick-release fertilizers and the overuse of pesticides to

protect ground and surface water in Oakland County, Mich. Doppel was one of MDLA's representatives on the committee.

But before the project could get underway, everyone had to agree on what constituted a "healthy landscape."

After several months of reviewing recognized horticultural, agronomic and IPM principals, an advisory committee came up with this definition:

- ▶ right plant in the right place
- ▶ fertile soils with organic matter content
- ▶ yard clippings and wastes used as resources on-site
- ▶ diversity of flowers, vegetables, trees and insects
- ▶ active biological soil system that allows soil to provide nutrients for plant growth
- ▶ essential needs of plants for growth considered, including nutrient and water needs
- ▶ careful use of pesticide and quick-release fertilizers which may harm water resources and public health if misused.

In writing the articles Doppel sought the knowledge and advice of respected turfgrass and landscape experts in Michigan and surrounding states. He says he also received valuable help from the MDLA and green industry professionals in the Detroit area.

His articles garnered such positive response that it was decided to gather them into a book that could serve as a training and resource document for landscape professionals and others.

In June 1996, 1000 copies of *The Healthy Landscape* were published. Copies went to MDLA members, Michigan State University Extension and the Southeast Oakland County Resource Recovery Authority. Others were made available at green industry seminars and conferences. A second printing of the book is likely in March.

Meanwhile Doppel, in addition to running Atwood LawnCare, a company he purchased about 12 years ago, maintains a busy schedule writing for the *Landscape Architect*, serving on green industry committees, and speaking on behalf of the industry. □

*PLCAA presents LM-sponsored
"Environmental Improvement
Award" to Detroit-area LCO
for book on landscape care.*



Tim Doppel receives the PLCAA Environmental Improvement Award from Terry McIver, LM editor-in-chief, during the Green Industry Expo.



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10 design tips for low-maintenance landscapes

By LORI LYMAN



Lyman: 'mass grading often destroys landforms and existing vegetation that could be preserved.'

Today's successful landscape architects strive to create progressive, functional, beautiful landscapes. In recent years many of these leading edge projects can be described as being more "natural." The goal is to provide clients with landscapes that, following Mother Nature's example, require less time and expense to maintain than more traditional designs. This doesn't mean every landscape has to be a native restoration project though.

The following 10 tips will outline alternative practices for designing low-maintenance landscapes.

1) Right plant/right place

The right plant/right place rule can't be reinforced enough. Too often we are tempted to use a plant in the wrong place simply because it would look good. Then, in two or three years, stress has weakened the plant to a point where it requires

more intensive maintenance.

Aldo Leopold emphasized the importance of this idea in his 1966 work, "The Land Ethic." He wrote: "A thing is right when it tends to preserve the integrity, stability and beauty of the biotic community. It is wrong when it tends otherwise." In his statement, Leopold was referring to a larger scale of environmental impacts, but we can still apply his thought to individual projects through proper selection of plant materials.

For example, buckthorn was introduced to the United States from Europe to be used primarily as an ornamental tree. Unfortunately, it entered our woodlands and now competes with indigenous species. Lythrum is another example that it re-seeds in such tremendous quantities that it stifles native species which would otherwise provide food and refuge for wildlife. Often exotic plants that aren't indigenous to a region can cause more harm than good.

That's why it's best to stay with materials whose proven performance suits the location you're placing it in. Not only are there environmental issues concerning right plant in the right place, but future maintenance, removal and replacement costs.

2) Large sweeping beds

Gentle sweeping beds offer ease of mowing which is usually a good percentage of a maintenance contract. Equally

The dwarf fountain grass in the lower left corner blends well with the surrounding hardscape.



important, they look good. Again, large drifts or sweeps are natural. Singular plantings are not.

3) Design with natural landforms

The common and economical mass grading of sites needs to be closely monitored. Mass grading often destroys landforms and existing vegetation that could be preserved. The less interference in native areas like woodlands, the less maintenance will be required in keeping them healthy for years to come.

Familiarize yourself with a site's microclimates as well. Be aware of areas

subject to wind, areas that warm more quickly from the sun, and areas prone to snow stockpiles.

4) Sensible use of annual flowers

In a recent symposium at the Chicago Botanic Gardens a quote from a 130-year-old publication, "British Grasses" was discussed. The quote: "of late years public taste has been turned to the advantageous effect of grasses in landscape gardening. Ferns had the credit of first winning attention from color to form, and grasses next stepped in to confirm the preference for grace and elegance over gaudy colouring."

This shows two thoughts—one is that garden styles repeat themselves. Also, we seem to be rediscovering a trend toward native restoration, including the use of more plants like ornamental grasses, ferns, flowering perennials and groundcovers in places that were previously planted with higher-maintenance, high-color annuals.

5) Unity with variety

There are many examples of problems occurring with monocultures including the disastrous effects arising from Dutch elm



McDonald's office campus is known for its "natural" restored woodland design.

disease and, more recently, with Diplodia tip blight on Austrian pines. The key here is to plant "unity with variety."

6) Mulch periodically

Mulching improves the aesthetics, minimizes weeds, helps preserve soil moisture and keeps soil temperatures constant in areas that lack other effective vegetative groundcovers.

7) Cultivate with care, or not at all

Cultivating beds can destroy the roots of plants as well as have negative affects on some of the beneficial micro-organisms in the soil. Usually cultivating is done for aesthetic purposes. More often than not, it can be avoided by planting the proper groundcover, or by mulching.

8) Tip prune, don't shear

It costs more to take the time to shear plants than it does to tip prune, which allows a more natural look and results in healthier plants.

9) Appropriate proportions of fine turf

By naturalizing existing finished lawns you may invest some dollars upfront but in the end you ultimately reduce mainte-

nance costs by reducing irrigation, fertilization and mowing. Large corporate properties seem to be in the forefront of this trend. For example, in 1996 the American Society of Landscape Architects, Illinois Chapter, presented awards to 20 projects. Most contained elements of environmental restoration and incorporated low-maintenance design features.

10) Simplify fall cleanups

If a landscape is designed to have a more natural look there can be less of a need for intensive fall cleanups during which we take away the natural process of decomposition. By allowing leaves to remain on the site they can decompose and return organic material to the soil. Also, many perennials, including native grasses, are more striking when left uncut, and provide form and substance to a landscape all winter long. □

—Lori Lyman is a project manager with Mariani Landscape, Lake Bluff, IL

Deer control in demand

Some landscape companies offer fences to help clients protect their valuable ornamentals from hungry deer.

By JIM GUYETTE

Landscape managers can earn extra profits by offering deer control services, an item expected to be more in demand as deer populations across the United States climb, and the damage deer do to landscape trees and other landscape plants worsens.

Aggravating the problem is the continuing development of farms and woodlands into housing and commercial developments. This increasingly brings landscaped properties and deer together.

"We're going to be actively marketing this (deer control)," says Donna Elliott of Donna Elliott and Associates, a full-service firm based in Evergreen, Colo. So far she's had success by installing more than 1,000 feet of deer control fencing for several clients. "Most people can live with the turf being eaten, but they draw the line when the deer start eating perennials," she says.

"The deer population's been building over the last several years," explains Jim Mack, landscape operations manager at the 3,100-acre Holden Arboretum, Mentor, Ohio. Mack has installed over 10 miles of

deer fencing after trying other methods of keeping the deer away. "We've tried them all," he admits.

Fall-winter feeders

Deer damage typically begins in the fall and continues until food supplies become abundant again in the spring.

Hungry deer will eat just about any planted material, but seem to be particularly fond of hostas, azaleas, rhododendrons and many different trees.

"When you get into suburban areas there's a huge problem," says Al Benner, Benner's Gardens, Inc., New Hope, Penn. "Deer just come in and chow down. They like to browse on ornamentals. They really seem to do a job on flow-ers and ornamental shrubs. They'll strip them bare."

Benner too thinks the best way of controlling deer is to "keep them out." But most homeowners don't know how to do this.

"By the time you come in the homeowner is completely frustrated. They finally say, 'No mas! I can't take it anymore.'"

Benner says after several successful fencing installations, word that a landscape company can provide deer control



Al Benner, Benner's Gardens, New Hope, PA, shows that the deer fencing, at least installed in a natural setting, is not obtrusive.

will get around. Also, it doesn't hurt to let local extension people know you're offering the service too. You'd be surprised at how many homeowners call extension personnel asking for solutions to the deer problem.

"A lot of people don't even know this service exists," says Benner.

Fence not a distraction

Deer control fencing comes in two sizes. It's lightweight enough to be attached to trees that may already be on a property. Fiberglass, steel or wooden posts can be used also. The dark color usually makes it unobtrusive when installed.

Almost a quarter of the clients of John E. Hoffman Landscaping Inc., Petoskey, Mich., buy deer control services. "After we put in the landscaping we talk to our clients about protection. We don't want to see their plants destroyed," says Hoffman, pres-

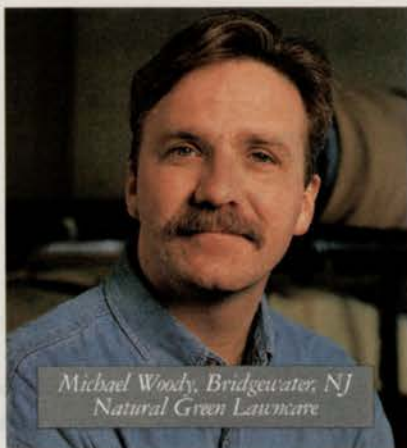
ident and CEO.

Hoffman says he has no set fee; he measures the area to be covered and prepares an estimate. Since many of his clients are "summer people" (Petoskey is a popular resort on the shores of Lake Michigan in northern Michigan.) they depend on his firm to protect their landscaping investment while they're away.

The fencing only works when the area to be protected is entirely enclosed. "If someone doesn't seal the area completely, the deer will go under the fence or around it and then they're trapped," warns Benner. "And they'll do anything to get out."

For more information about deer fencing, contact Al Benner at 6974 Upper York Road, New Hope, PA 18938. (800) 753-4660. □

—Jim Guyette is a freelance writer living in northeast Ohio.



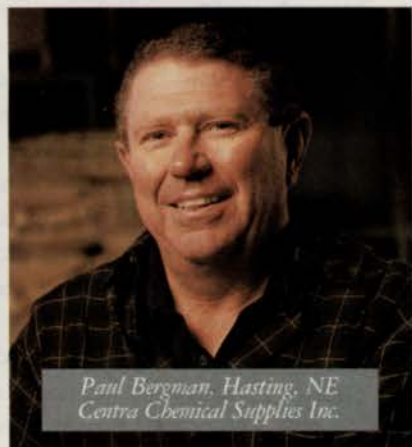
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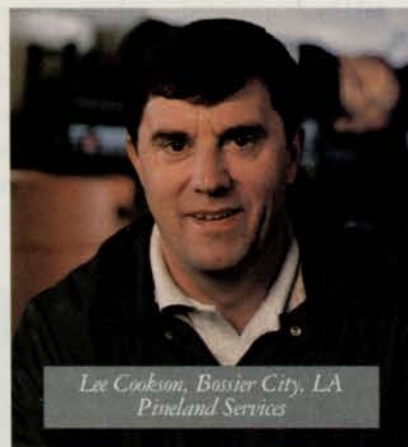
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Know objectives before you survey

Surveys—like the best companies—need to have a clearly-defined goal.

by JUDITH GUIDO

I'm often asked by folks in the green industry, How do you develop a good survey?

I am also told by disappointed surveyors of the industry that surveys don't work. I answer the first question with a question of my own: "Why do you want to do a survey? After giving me a perplexed look, landscapers tell me that "all companies do surveys," and surveys are a

mandatory part of doing business. Another popular response is, "We do it every year."

You survey customers whenever you want to know specific information that you plan to use to effect some change within your organization, *not* because surveys are "part of doing business."

Another important fact about surveys is that they aren't complete once they're sent out in the mail. They need to be collected, read, understood analyzed and *acted upon*.

Most of the people who told me that surveys don't work, when questioned fur-



Guido: If you don't know why you're taking the survey, you'll just be wasting time and money.

ther, said they never followed through on any of these important steps.

Certified mail boosts response rate

Certified or express mail will increase the survey response rate and decrease response time. I recommend this method only when time is a major factor or an extremely high response rate is needed to validate your survey.

These kinds of mailings are more expensive with a larger sample. Wait about four weeks

before sending out a reminder letter to those who have not replied. Generally, you can expect about 10 percent of the outstanding sample to respond after they receive "reminder cards."

Send a thank you card and perhaps a token of appreciation to all respondents. One year, Laflamme Services mailed a packet of herb seeds to survey respondents. It was a lightweight, inexpensive, industry-related gift.

Analyze and take action

Get all your employees together, and make sure that anyone who may be affected by the survey reads and understands it. Discuss responses, and set up a meeting for follow-up. Make a list of action plans to solve problems or duplicate (cross-company) the strengths that were identified. Assign these tasks and set deadlines.

Let the respondents know what you are going to do with the information. This lets your customers know you are not wasting their time. □

The author is director of marketing and business development for Laflamme Services/Grass Roots, Bridgeport, Ct.

J.G.

Common-sense survey tips

1. Consider your budget and staff skill. Make sure someone in your company knows how to design and analyze the data.
2. Know your audience. Include age, gender, education, professional status and attention span. Consider how much time will be needed for them to complete the survey.
3. Determine the sample size. You can survey everyone in your small customer base, but a larger customer base requires you to be selective: which customers do you most want to hear from—building owners as opposed to facility managers? Women instead of men?
4. Determine the method. Self-administered surveys include mail and other written surveys. Interviewer-administered surveys are done by phone and in-person contact.
5. Balance the length and information. Shorter surveys should bring a higher response rate, but will provide less information. But, you can always do another. Remember: you have to *act* on this information!
6. Ask one question at a time. Don't ask: Do your workers show up on time *and* are they dressed in their uniforms? You may get one 'yes' and not know which question they have answered.
7. Keep questions short, 25 words or less.
8. Avoid loaded questions, which discredit your results.
9. Pretest your survey with friends and employees to see if they find it user-friendly and easy to understand.
10. Explain the survey to customers, in a one page cover letter. Tell them why you need to know their opinions.

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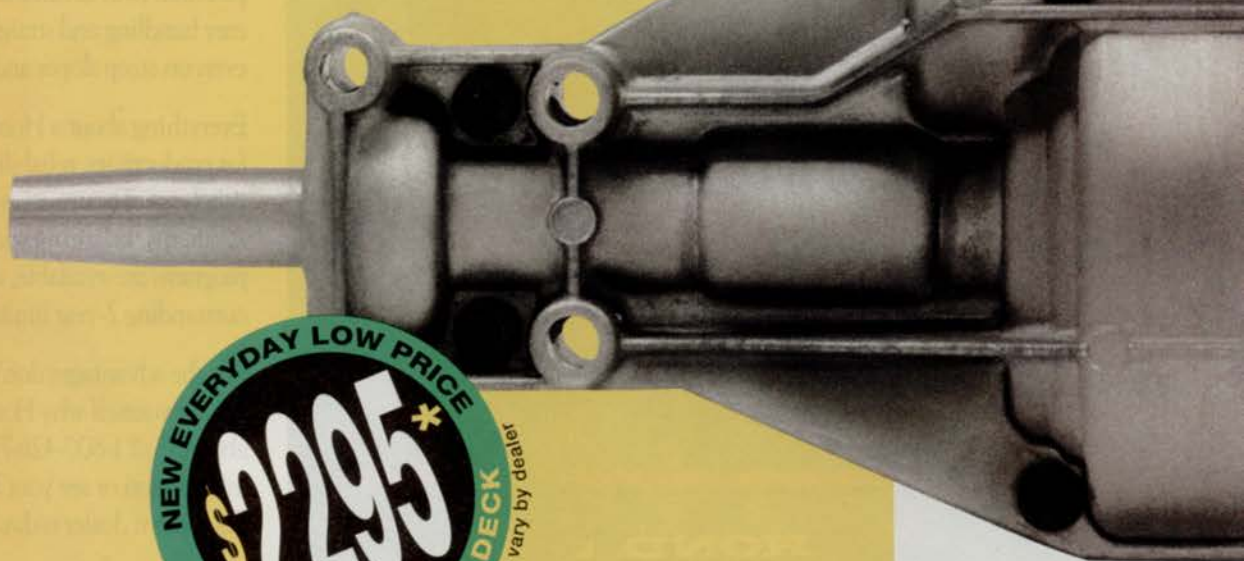


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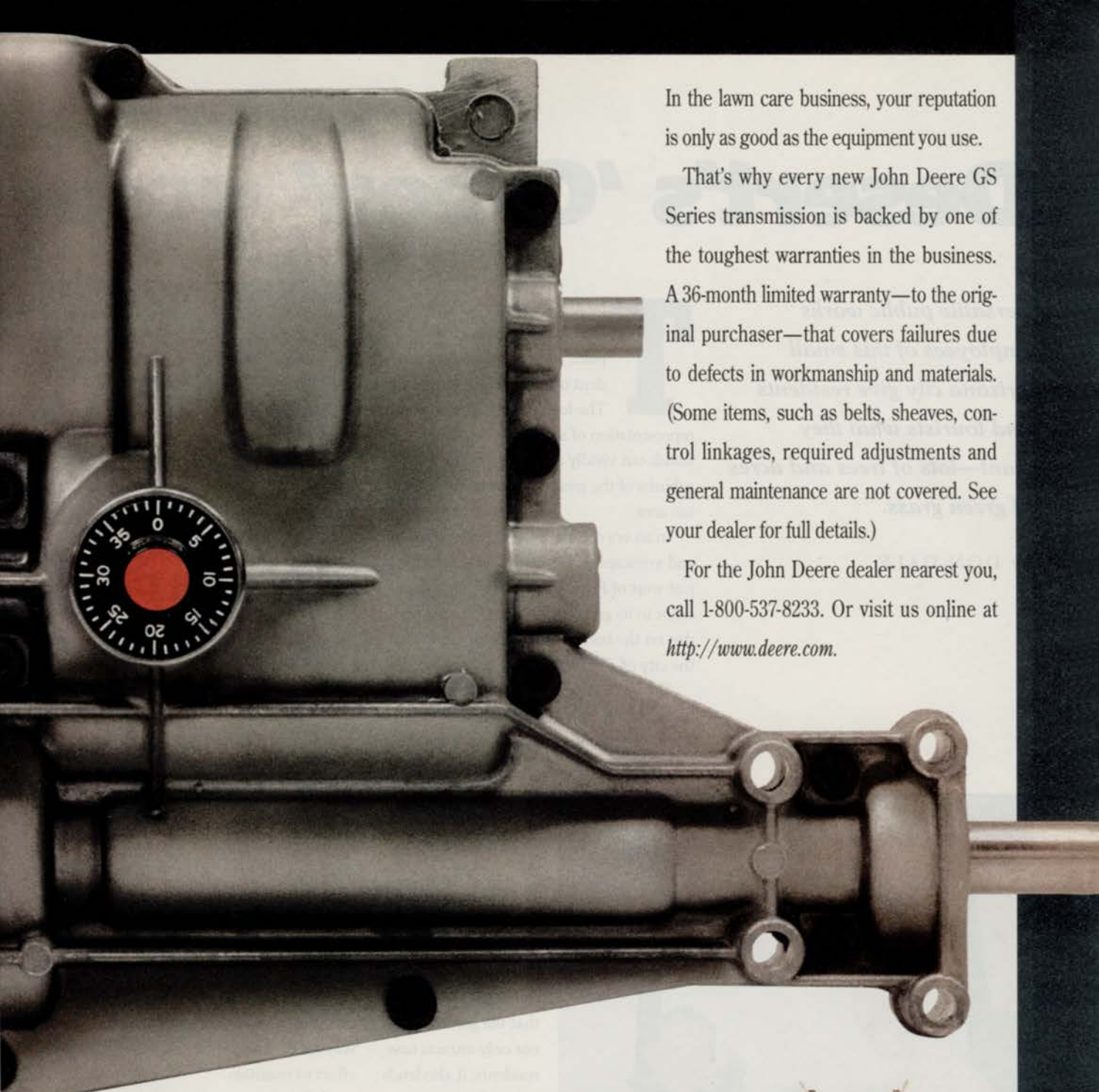
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Desert's 'Green' gem

Versatile public works employees of this small Arizona city give residents and tourists what they want—lots of trees and acres of green grass.

by DON DALE

The logo of the City of Litchfield Park, Ariz., is a line of palm and orange trees resplendent on a white background. The logo, in fact, is an accurate representation of a city so green that it stands out vividly among the other desert suburbs of the greater Phoenix metropolitan area.

In an era of strict water conservation and xeriscaping, Litchfield Park, located just west of Phoenix, is making a commitment to its green look. But it places a burden on the budget and landscaping staff of the city of 38,000.

"We've seen a value for it since way back," says City Manager Bob Musselwhite, who points out that ever since the

city was set up by the Goodyear Tire and Rubber Company in 1916 it has specialized in trees.

"We get criticized a lot for the amount of water we use," Musselwhite says, but the city feels strongly that the green look not only attracts new residents, it also lends a more homey atmosphere to the community.

"This type of element in our landscaping and design of our cities is critical in bringing us together," he maintains.

The man who bears the burden of the landscaping is Bob Gaunt, maybe



A green image is emphasized throughout Litchfield Park, Ariz.

the only public works director in the state who has a horticultural background rather than one relating to streets or buildings. He estimates that over 50 percent of the cost of public works salaries in Litchfield Park goes to landscape.

'Trademark look' high maintenance

The trademark look of the city is its alternating palm and orange trees along main downtown thoroughfares. It has been this way for decades, but it still requires a lot of effort to maintain.

"We lose quite a few to lightning," Gaunt says of the palm trees. "They're not a problem otherwise. We have about 1,400 palm trees. That's how many we trim a year."

Actually, because of safety concerns, the city contracts private trimmers to do the specialized job of trimming palms. Gaunt reserves his force of eight employees for other work.

One of the biggest jobs recently has been to replace some of the 60 or 70-year-old sour orange trees which line the boulevards.



Public Works Director Bob Gaunt, left, and City Manager Bob Musselwhite think the money spent on maintaining the city's trees and turf is well spent.



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wards. A recent two-year drought killed many of them.

"We've got a pretty extensive program to replace them," says Gaunt. "We replace 40 or 50 per year."

Pruning the trees is also a big job for public works. The city has an extensive pathway system, and the orange trees overhang the distinctive red concrete paths. The trees are trimmed so that people can

"We're trying to educate people who live along the right of ways to help us water those trees," says Gaunt, to avert heavy drought losses.

walk under them.

That presents another horticultural problem. When citrus tree trunks are exposed to the harsh Arizona sun, they sunburn. Trees can die. So white paint must be applied to the trunks every year.

Many of the street medians and fringe areas of Litchfield Park are planted with oranges and palms. But the city has gone to more drought-resistant vegetation such as Mondale pines, Chilean mesquite, heritage live oak and cactus in its new plantings away from city-center.

Most orange trees are either on drip or bubbler irrigation, says Gaunt. The adjacent palm trees can survive on natural rainfall plus the little water they pick up from the orange tree irrigation.

"We're trying to educate people who live along the right of ways to help us



water those trees," says Gaunt, who points out that this could avert heavy death losses in drought times.

Litchfield Park has no city ordinances addressing what trees residents can plant, other than pollen producers such as fruited olives and mulberries. Those are banned, and the city is actively removing them for the health benefits of residents and visitors. The city is a tourist area with the Wigwam Resort the city's biggest economic asset.

"We took out about 60 fruited olives last year and replaced them with other trees," Gaunt says.

Turf care is another heavy labor cost for the city. Half of the crew at times is busy mowing.

"Mowing takes basically two days—that's with four guys," Gaunt explains. Most of the rotary riding mowers are mulchers which improves aesthetics after mowing.

Common bermuda/perennial rye

All city grass is common bermuda, and in order to keep the dormant turf looking good in the winter the city overseeds everything except its soccer fields. Gaunt uses perennial rye for overseeding instead of annual rye, because it requires less water

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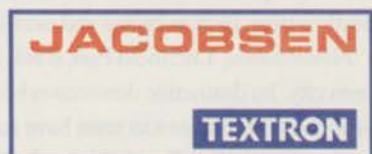
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Tree-lined boulevards give this desert city its character. Note the white paint used to protect the trunks of the citrus trees.

and mowing.

The city considers the rather large cost of the overseeding—10,000 pounds of seed—this winter alone was hefty. But it's necessary to keep up the city's image during the season when it gets most of its tourists.

'Tree City' image a boost

The city has four parks that, with other grassy areas, bring the mowed areas up to 23 acres. The heavily used soccer fields are not overseeded, because the rye would just be ruined, and it is a slippery playing surface.

"We have one desert park," says Gaunt. It has been planted with desert vegetation, mostly native, such as cactus and ocotillo.

Nevertheless, Litchfield Park is still a green city. Its distinctive downtown boulevards and commitment to trees have made it a designated Tree City, USA by the National Arbor Day Foundation three years in a row, and it obtains state funds to help maintain its green image.

Maricopa County found out how dedi-



When the county erected this wall, it created openings to save the beauty of trees like this Aleppo pine.

cated the city was to its trees when it widened a boundary street and erected a barrier wall between it and the city. Public works made sure the country saved every tree it could, and the engineers got in the spirit of things so thoroughly that they even erected masonry fences with holes in them for trees to lean through.

Many tasks done well

Gaunt points out that the secret to a small municipality such as Litchfield Park being successful with such a large landscaping commitment is the public works employees.

"The secret is that everyone has to be versatile," he says. His crew of eight may all be working on streets one day and tree plantings or irrigation maintenance the next.

Gaunt designates specialties within the work crew to facilitate landscape maintenance. For example, one man is the pri-

mary tree trimmer. But all employees work on turf or trees at some time, and hiring people with good attitudes and sending them to training seminars when possible enables Gaunt to keep the green areas looking good year-round.

The city tries to cultivate an "ownership" attitude in its public employees; they more the identify with the city as their own, the better they do in their work.

Musselwhite says there is a lot of hassle in keeping a city green in the low desert, but Litchfield Park has a distinctive image. And the city and residents are committed to keeping it. **LM**

—Don Dale is freelance writer living and working in Willcox, Ariz.

Bisset Nursery Corporation of Long Island, N.Y., reports it has acquired the **Design Imaging Group**, developer of landscape imaging software. DIG has developed site plan software for the pool and landscape industries, including three new programs. Bisset, the largest re-wholesaler in the Northeast, was one of DIG's first customers. Bisset says it brings a successful customer service record to the table, which will fit together nicely with DIG's qualified technical staff and sales representatives. The program's inventor, Garry Galpin, remains with the team.

Data Transmission Network Corporation (DTN), an infor-

mation and communication services company, has acquired all the subscribers of Golf Link. The former Golf Link subscribers have been assimilated into DTN Weather Center which helps turf-related industries plan their work activity by providing them detailed weather information in a timely fashion. Golf Link had more than 450 subscribers to its information system. DTN is headquartered in Omaha.

Century Rain Aid, one of the country's largest distributors of landscape irrigation equipment, has reached an agreement with **Shemin Nurseries, Inc.**, in which Century will establish product outlets in eight

of Shemin's 14 distribution centers. Shemin hq is in Danbury, Ct. The company is a wholly-owned subsidiary of Weyerhaeuser Co. Century President Wayne Miller says the agreement gives Century's customers added convenience, and Century benefits from Shemin's customer traffic.

Encore Manufacturing Co., Beatrice, Neb., was awarded an Outstanding Nebraska Industry Award. The award is presented by The Nebraska Diplomats, an organization of business people from throughout the state who help recruit new and expanding business for the state. Encore was picked for its "continual

growth and contributions to economic development."

Lofts Seed, Inc., has moved its corporate offices from Somerset, N.J. to Winson-Salem, N.C. According to company President, Ken Budd, the move gives the company easy access to banking, legal and accounting resources. "It also provides our customers with enhanced customer service, better product value and a more streamlined operation that will help grow their business," said Budd. Lofts' New Jersey research facilities and personnel remain in Somerset. Neil R. Myers has been named director of marketing for the seed supplier, which recently gave royalty checks for more than \$670,000 to Rutgers University and the University of Rhode Island research programs.

The Toro Company's two-year or 1500 hours warranty on its entire commercial product line is an industry first, says Toro. Mike Goodwin, manager of Worldwide Service for Toro, says the warranty includes equipment purchased in 1996. The "two-year" warranty will apply to those products not equipped with hour meters. Toro also reports it has completed its buy of the **James Hardie Irrigation Group** for \$119 million. **Maruyama** and Toro will jointly produce and market hand-held commercial equipment to landscape contractors. Toro CEO Kendrick Melrose called the move, "a significant boost to the company's growing landscape contractor business." **LM**

Info center

VIDEOS AND LITERATURE FOR THE GREEN INDUSTRY

ALL YOU NEED TO KNOW...*The Landscape Management Handbook*, edited by Dr. Bill Knoop, presents the most current and comprehensive information on the basics of turfgrass and landscape care and management. Knoop, a nationally-known expert on turfgrass science, combines a wealth of practical information with the tried and true basics of management, for a single, practical, affordable and up-to-date text. Both golf course superintendents and students of turfgrass and landscape management alike will find this book to be the only source of its kind, as it features comprehensive information on pertinent topics: soil; plant growth; turfgrass selection; plant nutrition; landscape irrigation; organic lawn care; pesticides; weed/insect/disease management. Knoop served as an extension specialist for 25 years, and has worked in the field with a variety of green industry professionals, from golf course superintendents to parks directors to home owners. This is the ideal reference for both students and green industry professionals. *The Landscape Management Handbook* is priced at \$34.95, and can be ordered by calling (800) 596-6008.

COMPREHENSIVE ESTIMATING GUIDE...*Estimating for Landscape & Irrigation Contractors*, by landscape industry consultant James Huston, MBA, contains more than 100 diagrams and illustrations, as it covers the process of pricing maintenance, construction and services projects. Included are five common methods used to price jobs; budgeting, and how to prepare an estimating budget; how to calculate labor burden and average wages; and how to measure, allocate and control overhead costs. The book costs \$75, plus UPS 5-day shipping charges. Discount pricing for multiple orders is available. For more information or to order, call (303) 794-9597; fax orders to (800) 451-5494.

Events

JANUARY

11-12: "Capturing Nature's Visual Patterns in Landscape Design: Observation, Analysis and Design," Connecticut College in New London, CT. Phone (215) 247-5777.

13-15: Massachusetts Turf Conference and Trade Show, Hynes Convention Center, Boston. Phone (413) 592-0120.

13-16: Advanced Turfgrass IPM Short Course, University of Maryland, College Park, MD. Phone (301) 405-3913.

13-17: Golf Course Maintenance Short Course, Holiday Inn on the Lane, Columbus, Ohio. Phone Barbara Bloetscher at (614) 292-7457.

14: Perennial Plant Program, Avon, Ohio. Conducted by Charles Behnke, OSU Extension. Call (216) 322-0127.

15: Landscape & Nursery Expo/97, Sacramento Community Convention Center, Sacramento, CA. (916) 442-4470.

15-19: STMA Conference and Exhibition, Red Lion Hotel, Colorado Springs, CO. Contact Steve Trusty (800) 323-3875.

17-18: WinterGreen Show, hosted by Georgia Green Industry Association. Cobb Galleria Center, North Atlanta. Phone GGIA at (706) 492-4664.

17-19: PLCAA Annual Management Conference & Golf Classic, Tempe,

Ariz. Includes sessions on public policy and the 105th Congress, the outlook for business and the economy and recruitment in a tight labor market and compensation to keep good employees. Call PLCAA at (800) 458-3466.

20-23: Michigan Turfgrass Conference, Holiday Inn South Convention Center, Lansing. Phone (517) 321-1660.

20-24: Professional Horticulture Conference of Virginia, Virginia Beach. Phone Polly Carden (804) 523-4734.

20-24: Second Annual Turfgrass Short Course, sponsored by the Turfgrass Council of North Carolina in cooperation with the faculty and staff at North Carolina State University. Course will be taught at the Brownstone Hotel in Raleigh. Call the Council at (910) 695-1333.

20-Feb. 7: Rutgers Professional Golf Turf Management School, Cook College, New Brunswick, NJ. Call Missy Marciante (908) 932-9271.

21, also 28: Everyday Spanish for Landscape Contractors, Cook College Short Course, New Brunswick, NJ, call Lori Albrizio (908) 932-8451.

21-23: Mid-American Green Industry Convention, hosted by PLCAMA. BTA Conference Center, Kansas City, MO. Phone (816) 561-5323.

21-23: Midwest Turf

Expo, Indiana Convention Center, Indianapolis. Call Beverly Bratton (317) 494-8039.

22-23: Effective Contract Writing for Landscapers, Cook College Short Course, New Brunswick, NJ. Call Lori Albrizio (908) 932-8451.

24: Michigan GCSSA Seminar, one-day seminar following Michigan Turf Conf. Phone (517) 321-1660.

24-25: ALCA Masters in Management, Atlanta. Call ALCA at (800) 395-2522.

24-25: Commercial Lawn Care Equipment Exhibition and Trade Show, Jacksonville Agricultural Fairgrounds, Jacksonville, FL. Contact Kirk Rust (904) 778-9632.

27-28: Arkansas Turfgrass Association Trade Show, Excelsior Hotel, Statehouse Convention Center. Contact: Angie McSwain, (501) 664-8048.

27-29: Iowa Turfgrass Conference and Show, Des Moines Convention Center. Contact The Turf Office at (515) 232-8222.

28-29: Rutgers Advanced Turfgrass Management Symposium, New Brunswick, NJ. Phone (908) 932-9271.

29: Charles VanderKooi Seminar, in conjunction with Century Rain Aid trade show (1/28). Phone Alicia Wright (770) 446-0613.

29-31: Utah Green Industry Conference and Trade Show, Utah State Fairpark, Salt Lake City. Conference information, Dr. Larry Rupp (801) 797-2255.

30: Introduction to the Internet for Golf Turf Pros, Rutgers University, New Brunswick, NJ. Call (908) 932-9271.

30: Northeastern PA Turfgrass and Grounds Maintenance School, Mountain Laurel Resort, White Haven, PA. Phone Andrew McNutt (814) 863-1368, or the PTC at (814) 863-3475.

31: Superbowl of Lighting III, sponsored by California Landscape Lighting at its Westlake Village, CA, office. Phone (800) 457-0710.

FEBRUARY

4-8: NAA Winter Management Conference, Nassau (Bahamas) Marriott Crystal Palace Resort. Contact the NAA (800) 733-2622.

5-7: Midwinter Conference Turfgrass Producers International, Savannah, GA. TPI at (800) 405-8873.

6-7: Northern California Turf & Landscape Exposition, Santa Clara Convention Center. Phone (515) 505-9600.

6-7: Inland Northwest Turf, Tree & Landscape Conference, Spokane, WA. Call WSU Conferences & Institutes (800) 942-4978.

6-7: Weed Management Workshop, Clarion Plaza Hotel, Orlando, FL. Sponsored by the Weed Science Society of America and The American Society for Horticultural Science. Call (703) 836-4606.

12-14: '97 Winter Workshop, Bethesda Marriott, Bethesda, MD. Call Landscape Contractors Associa-

tion MD-DC-VA (301) 948-0810.

12-13: ALCA University workshop, managing front-line employee performance, Hinds Community College, Raymond, MS, sponsored by Hinds Community College, Mississippi Nurserymen's Association and ALCA. Call ALCA at (800) 395-2522.

13: PLCAA Workshop, "Heads-Up Training—How to Teach in the Workplace," featuring practical teaching tips and techniques that you can implement on the job immediately; New Brunswick, NJ. For a brochure, contact PLCAA at 1000 Johnson Ferry Rd. NE, Suite C-1135, Marietta, GA 30068; (800) 445-3466.

16-18: Ohio Tree Care Conference & Trade Show, Worthington, Ohio. Sponsored by the Ohio chapter of the ISA. Call (614) 433-0045.

16-19: ALCA Executive Forum, Acapulco, Mexico. Call ALCA at (800) 395-2522.

17: ALCA University workshop, managing front-line employee performance, The Holiday Inn West, Hilliard, Ohio, sponsored by Ohio Nursery and Landscape Association, Ohio Landscapers Association and ALCA. Call ALCA at (800) 395-2522.

18-19: OSU Professional Lawn Care Short Course, Holiday Inn on the Lane,

Columbus, Ohio. Phone Barbara Bloetscher (614) 292-4230.

18-20: Mid-Pacific Horticultural Trade Show & Conference, Hilo on the Big Island of Hawaii. Phone Jo Ann Johnston (808) 969-2088.

19-22: Outdoor Power Equipment Distributors Assn. Meeting, Sheraton El Conquistado Resort, Tucson, AZ. For reservations (800) 325-7832.

19-23: Southeastern Flower Show, City Hall East Exhibition Center, Atlanta. Call Ryan March (404) 252-7577.

21-22: ALCA Masters in Management, San Francisco. Call ALCA at (800)

395-2522.

22-March 2: Southern Spring Show, Charlotte Merchandise Mart, Charlotte, NC. Call (704) 376-6594.

24: Water Conservation Practices on the Golf Course, Rutgers University, New Brunswick, NJ. Phone (908) 932-9271.

24-25: Turf and Grounds Exposition, Holiday Inn Suffern, Suffern, NY. Contact New York State Turfgrass Association (518) 783-1229.

25-26: Southern Illinois Grounds Maintenance School, Gateway Convention Center, Collinsville, IL. Contact Ron Cornwell (618) 692-9434.



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The Sports Turf Managers Association (STMA) is an organization of professionals representing all segments of the sports turf industry. Our members work to combine the science of growing grass and the art of maintaining sports turf to produce playing fields that are both safe and aesthetically pleasing.

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Zero-Turn mower is one maneuverable machine

Great Dane Power Equipment says its Zero-Turn Surfer is the most compact commercial mower in the industry and is more maneuverable than a zero-turn hydro walk-behind. Its stand-on platform is nearly at the center of zero-turn radius and provides the operator with excellent visibility for trimming. Because of its wide wheel stance, the Surfer has excellent sidehill stability, says Great Dane. Cutter decks from 36, 48, 52 and 61 inch. Engines include Kawasaki, Vanguard, and Kohler. Contact Great Dane at (414) 544-4090 and tell them you saw the Surfer in LM, or

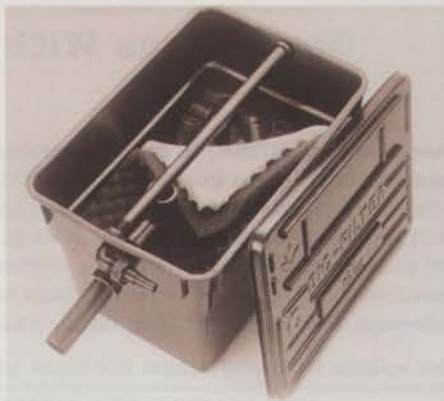
Circle No. 280

This bio-filter is easy to clean and maintain

An improved Bio-Filter from Rena Corporation is adequate for most ponds up to 500 gallons of capacity, and is easier to clean and maintain. The EBF-External Bio-Filter is a true wet/dry biological filter that uses natural processes to remove ammonia from the water.

Water from the pond is pumped through the Bio-Filter where it is aerated and then filtered through two layers of foam. The water then flows through plastic filter media which is colonized with millions of bacteria. The bacteria breaks down organic compounds such as ammonia into harmless nitrates. A universal adaptor allows use of all sizes of tubing from 1/2 inch to 3/4 inch. Call Rena at (704) 587-7110 and say you saw it in LANDSCAPE MANAGEMENT, or

Circle No. 281



Alamo boom mowers sport new features, better efficiency

The Alamo Industrial Machete boom mowers use a closed-loop hydraulic system. The piston pump and motor will achieve 96 percent efficiency because more energy is transmitted to the mechanical elements and less oil is lost to slippage than with a standard gear system.

The Machete's blade bar is reinforced with three 3/4-inch thick leaves, and the spindle housing is attached to the deck with eight 3/4-inch bolts. The operator can control all boom movements with a single joystick including the electro-hydraulic proportional lift, swing, and dipper arm which permits greater precision in positioning. Other features: Teflon impregnated bearings, heavier hydraulic hoses, and 1 1/2-inch chrome-plated pins at all pivot points on the boom. Contact Alamo Industrial at (210) 379-0864 and say you read about the booms in LANDSCAPE MANAGEMENT, or

Circle No 282



Buckner's controllers offer 3 configurations

Buckner unveils its MTBi and MTC model controllers. Available in 4, 8 and 12-station configurations, the MTBi is designed for indoor mounting applications. The MTC is intended for outdoor use.

Both the MTBi and the MTC feature an electro-mechanical clock design for simple, straightforward water program setting. It does not depend on electronic memory and is well suited for areas prone to lightning strikes, power outages or power surges. Both models also feature a "Day Wheel" allowing up to 23 starts per day. Contact Buckner at (209) 275-0500 and tell them you read about the controllers in LANDSCAPE MANAGEMENT, or

Circle No 283

LANDSCAPE Bookstore



Containment System Design Chemical Storage, Mixing and Handling

by Fredric R. Haskett

100 pages, hardcover Item #LSMB809 ~~\$74.95~~ \$49.95

This comprehensive guide to compliance covers everything you need to know about storing, mixing and recycling chemicals. Areas covered include Planning, the Containment Facility, Equipment Standards, Site Standards, Emergency Response Procedures



Turf Managers' Handbook

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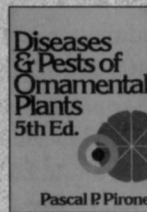


A Color Atlas of Pests of Ornamental Trees, Shrubs and Flowers

by David V. Alford

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Diseases and Pests of Ornamental Plants

by Pascal Pirone

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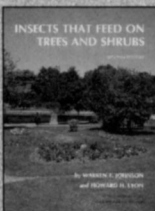
Diseases of Trees and Shrubs

by Wayne Sinclair, Howard Lyon & Warren Johnson

575 pages, softcover

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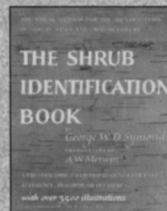
Insects that Feed on Trees and Shrubs

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The Shrub Identification Book

by George Symonds

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Tree Maintenance

by P.P. Pirone

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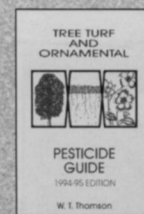
Urban Trees

A Guide for Selection, Maintenance, and Master Planning

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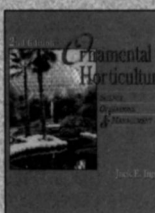
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170 pages, softcover

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Science, Operations & Management 2nd edition

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Landscape Design A Practical Approach 3rd Edition

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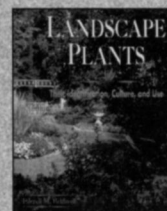
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by Janet Lennox Moyer

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Landscape Plants Their Identification, Culture, and Use

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LANDSCAPE MANAGEMENT

Toro mower maintenance can save you \$\$

Maintenance kits for The Toro Company's Groundsmaster 200 and 300 series rotary mowers can now be purchased from Toro distributors nationwide. These kits provide filters; blade and belts; spindle assemblies; and caster wheels. The cost savings of the kits are estimated at 10 to 25 percent compared to suggested retail of parts when purchased separately.

The kits are packaged in an innovative carton that provides graphic images of the parts and an inventory check-off. The design is intended to prevent confusion between kits and let customers

know which parts have been used, which remain, and when to order a new kit. Ask for maintenance kits for other Toro commercial products too, specifically the Groundsmaster 3000; Greensmaster 3000, 3100 and 3200; and the Reelmaster 5100 and 5300. Contact Toro at (612) 887-8335 and tell them you read about the kits in LM, or

Circle No. 284



Structron ropeless pruner uses a cable

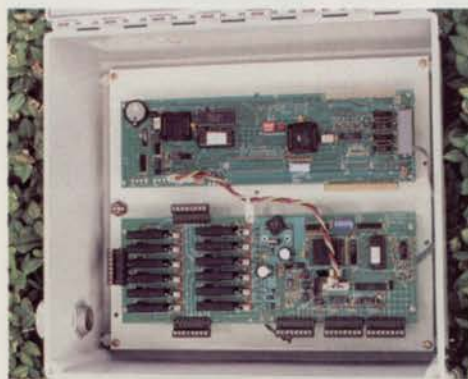
Structron Corporation says its Pull and Prune is the first ropeless pruner on the market. It's made with an internal steel cable eliminating the need for the standard rope-pulley system. For easier cutting, it features a Power Slide handle and a steel head with a compound action cutting blade. The Pull & Prune comes with a 72-inch light-weight fiberglass handle for greater comfort and control. Call (619) 744-6371 and mention you learned about the Pull & Prune in LANDSCAPE MANAGEMENT, or

Circle No 286

Computerized environmental control system is point and click

Gro-MACS is a computerized environmental control system for landscape and turf maintenance such as golf course and stadium irrigation and fertilization systems. It features a Microsoft Windows point-and-click user interface on a

standard IBM-compatible PC which displays the status of environmental conditions, control operations and alarms.



From one location you can enter your environmental schedules for the entire system. The Gro-MACS will monitor sensors for temperature, precipitation, sunlight, water pressure and flow, soil moisture, and use the data to control devices such as watering or irrigation pumps and valves, fertilizing systems and more.

Versions of the Gro-MACS are available in Microsoft Windows 3.1 and Windows 95 format. The system will keep track of all data, such as water usage, and even track how long pumps have been on for maintenance purposes. Call ASOMA-WTC Engineering, Inc. at (512) 258-6608 for more details, or

Circle No. 285

Multi-purpose hand tool aids in cleanups

The Shrake sifter/rake is an excellent tool for gardening, composting and landscaping purposes. Irrigation maintenance and pond cleanups are also made easier thanks to the Shrake's ability to sift debris.

Available in a 48- or 24-inch ash or hickory handles, the Shrake will do anything a square-nose shovel will do, except pick up water or dust!

Landscapers can use the Shrake as a time saver, and it saves soil by breaking up clods of dirt. Snow will not freeze to the tool, and slides off instantly. The perforated Shrake is perfect for cleaning up ponds and lakes.

For more information, call (800) 997-4373 and say you saw it in LANDSCAPE MANAGEMENT, or

Circle No. 287



These staples eliminate stooping and rework too

TurfTacs is a biodegradable sod and turf staple system to secure sod, turfgrass, erosion control netting and grass and flower mats. It eliminates rework caused by edges curling, lifting and drying out. The staples are driven into the earth by a sturdy, stainless steel TurfTacker that works like a giant standup stapler. It allows the applicator to apply the staples while standing. The TurfTacker holds a cartridge of 60 staples. TurfTacs biodegrade in 3-8 weeks, and comes in two forms: universal U-shaped for netting, ground cover and seams; L-shaped for sod pieces, divots, grass and flower mats. To find out more, call (888) 887-3822 and mention LANDSCAPE MANAGEMENT, OF

Circle No. 288

Tas Trimmers clean up around sprinkler heads

Tas Industries offers a family of trimmers specifically designed to clean out growth from donut protectors, pop-up sprinkler heads, rotary sprinkler heads, golf course rotary heads, and control valve covers.

The trimmers fit the following straight-shaft trimmers: Echo, John Deere, Lesco, Shindaiwa, Maruyama, Husqvarna, Stihl, Green Machine, Robin, Red Max, Tanaka, and Weed Eater. They will clean sprinkler head donuts with 2 1/2, 3 1/2 and 4-inch centers as well as control valve covers 6 inch and 10 inch in diameter. For more information contact Tas at (941) 485-0262, mentioning LANDSCAPE MANAGEMENT, OF

Circle No. 289

Tri-King Mower now with more muscle

Jacobsen's new Tri-King triplex reel mowers feature a choice of high-output, 18-hp Briggs & Stratton Vanguard engine or a 19-hp liquid-cooled, low-emissions Kubota diesel for greater power and performance.

"The new Tri-Kings are also easier to operate," says Steve Yolitz, vice president of strategic product planning at Jacobsen. "The new steering wheel, power steering and automatic, three-wheel drive really improve maneuverability and operator comfort."



New, heavy-duty Eaton 2000 Series traction motors, plus a larger fan and high-flow water pump are features that enhance Tri-King reliability.

Tri-King mowers feature 72-inch and 84-inch cutting widths, with five-, seven-, and ten-blade reels. If you'd like to learn more about the Tri-King, check out the Jacobsen/Texttron Web site at www.jacobsen.texttron.com; call (414) 637-4465 or,

Circle No. 290

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LANDSCAPE management

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FOR ADVERTISING INFORMATION AND AD PLACEMENT, CONTACT: DAN HOKE, 216-891-2762, 1-800-225-4569, (ext. 762), Fax 216-826-2865

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Senior Managers, Small Business Owners - Please apply. ENVIRONMENTAL CARE, INC., one of the largest, fastest growing national Green Industry companies is expanding in No. Calif. Bay Area market. Positions require 3-5 years proven track record in managing a business in the Green Industry. Experience in financial mgmt, people mgmt, customer service, sales needed. Person must be self motivated, energetic, creative with entrepreneurial qualities. Excellent benefits & compensation package. EOE. Send confidential resume to: Environmental Care, Inc., 825 Mabury Road, San Jose, CA 95132.

Environmental Care, Inc. the largest landscape maintenance company in the United States has positions available in Phoenix, Arizona. We are seeking career minded, experienced individuals to be Account Managers. Qualified individuals will be team oriented with excellent customer service skills. Benefits include medical, dental, life insurance, and 401K.

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- SUBCONTRACT MANAGEMENT
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- COORDINATION OF SUBMITTAL PACKAGES, MAINTENANCE MANUALS AND AS-BUILTS

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BOX NUMBER REPLIES: Mail box number replies to: LANDSCAPE MANAGEMENT, Classified Ad Department, LM Box #, 131 W. First St., Duluth, MN 55802. Please include box number in address.

HELP WANTED

Landscape Field Manager

Cedar Landscape, Inc., Oregon's fastest growing commercial landscape firm, is looking for a Field Manager with 5 - 7 years experience in commercial project installation. Responsible for oversight of multiple job sites for landscape & irrigation construction, supervision of forepersons in the field, meeting production schedules and budgetary goals. Must be a self motivated, team oriented professional with excellent communication skills. Cedar Landscape offers excellent advancement opportunities and an attractive benefits package. Salary commensurate with experience and ability. Send a resume detailing project experience and dollar value to:

Cedar Landscape, Inc.

14375 SW Patricia Avenue, Hillsboro, Oregon 97123
For further information, call (503) 628-3411, ext. 11.

Cedar Landscape, Inc. is
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**MANAGERS
SUPERVISORS
CREW FOREMEN**

Scian's Landscaping, Inc., one of Southern New Jersey's largest and fastest growing landscape contractors, is currently seeking take charge, self motivated landscape professionals to join our management team. These positions require a minimum of 1-3 years supervisory experience in either grounds maintenance, landscape construction, tree removal or irrigation systems. Horticultural degree is a plus. We offer an excellent compensation program and employee benefits package commensurate with experience.

For immediate, confidential consideration, please send or fax resume to Scian's Landscaping, Inc., 444 Commerce Lane, West Berlin, NJ 08091, Attention: Jo Anne Crouch. FAX (609) 768-5236. PHONE (609) 768-5915. EOE/MF

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Well established landscape design/build company seeks highly motivated, well organized self-starter to join our team effort. Individual should have a minimum 2 year degree in Ornamental Horticulture and 2 years experience in the landscape field. Must have ability to schedule and manage planting crews, design, estimate and sell projects. Competitive salary and benefit package. Send pay history and resume to:

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c/o Personnel Dept.
59 Dwight Street, Hatfield, MA 10038
Fax: 413-247-9401

**BRANCH MANAGER
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Lifescapes Inc., one of Atlanta's largest and fastest growing full service landscape companies is seeking a highly motivated individual to assume leadership of one of our metro area locations. Candidate must have proven management, sales and interpersonal skills. For immediate confidential consideration, please send or fax resume to:

**Human Resource Dir., Lifescapes Inc., 6644 Hickory
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*Other opportunities exist for
Maintenance Supervisors and Irrigation Service Tech.*

Landscape Design/Sales

We are a large full service landscape company seeking a well-rounded individual with at least 5 years experience in residential landscape design and construction to design, estimate, sell and supervise high quality landscaping projects. Excellent communication, sales and graphic skills are a must. Irrigation knowledge a plus.

**Please send resume and salary requirements to:
Morin's Landscaping, Inc., 301 Depot Road,
Holliis, NH 03049. Attention: Thomas Morin.**

AGRONOMIST

Large private lawn care co. in Buffalo N.Y. needs motivated turf expert. A 4 yr. degree and 5 years exper. is required. Training and safety background helpful. Benefit package includes mid 30's to start.

Send resume to: Funk Lawn Care.
330 Fillmore Ave., Tonawanda, N.Y. 14150
or contact Bill or Bob at 1-800-FUNK-LAWN

HELP WANTED

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Call 703-352-7555

Landscape Management Crew Leader and Crew Leader Trainee for high end residential. Two career positions open, excellent pay and benefits with stable, 35 year old, multiple award winning company doing residential Design/Build/Maintain projects in the **Washington DC metro market.** Crew Leader must have minimum of 2 years experience in plant and lawn care plus IPM. Call or send resume to:

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301-924-4131**

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Century Rain Aid, 31691 Dequindre Rd.,
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Well established landscape/build company seeks highly motivated, well organized, self starter to join our team effort. Must have a minimum of 3 years experience in landscape field and a knowledge of ornamental horticulture. Must have ability to communicate well, design, estimate and sell projects. Competitive salary and benefits package. Send resume to Gradco, Inc., 7341 Cahaba Valley Road, Birmingham, Alabama 35242. Attention Mike Summers.

SALES ENVIRONMENTAL CARE, INC. is

expanding markets in No. Calif. Bay Area. Must have 3-5 years experience and strong track record in sales. Need to be articulate w/strong interpersonal and organizational skills. Knowledge of local markets and property management a plus. Excellent growth potential, full benefits. Send resume: 825 Mabury Road, San Jose, CA 95133 EOE

BRANCH SALES MANAGER National Lawn Equipment, Parts & Accessories Supplier expanding into the Northeast, Mid Atlantic and Southeast. Need articulate individual with retail management experience. Computer literate. Several markets available. Send resume with salary history & requirements to: **Landscapers Supply, P.O. Box 459, Spring Valley, NY 10977-0459.** 8/97

OREGON'S LARGEST COMMERCIAL LANDSCAPE COMPANY located in the Portland Metro area is looking for experienced Maintenance and Construction Supervisors, Forepersons and Irrigation Technicians. Must be self-motivated, team-oriented, industry professionals with excellent communication and organizational skills. Training and opportunities for those who want to grow with us. Join our ALCA Award Winning Team and enjoy the lifestyle of the beautiful Pacific Northwest as an extra bonus. Send resume to: **NORTHWEST LANDSCAPE INDUSTRIES, 16075 SW Upper Boones Ferry Road, Tigard, OR 97224 - OR fax to (503) 620-7592.** 1/97

HELP WANTED

MAINTENANCE SUPERVISORS The Brickman Group, Ltd., one of the nation's largest and fastest growing full service landscape companies, has an immediate need in principal cities east of the Mississippi for maintenance supervisors with 2-5 years experience. Brickman seeks energetic, team oriented college graduates with proven leadership, communication and interpersonal skills. Brickman offers full-time positions, excellent advancement opportunities and exceptional compensation and benefits with an industry leader building on a 56-year tradition of uncompromising customer service. For immediate confidential consideration, please send or fax your resume with an indication of your geographic preferences and willingness to relocate to: **The Brickman Group, Ltd., Corporate Office, 375 S. Flowers Mill Road, Langhorne, PA 19047, 215-757-9630, EOE.** 1/97

LANDSCAPE MAINTENANCE MANAGER \$63,096-\$76,716/Year The City of San Jose is accepting applications for the position that manages the Neighborhood Parks Maintenance Division. This division maintains 170 park sites, totaling 1,022 acres. The division also provides turf and irrigation management to an additional 26 regional parks, totaling 880 acres. The position supervises an operation of 129 positions through 8 first line supervisors. The division is currently involved in Total Quality Management and this position would be expected to provide leadership in this process. Requires: Bachelor's degree in parks management, landscape architecture, or related field and four (4) years in park management or professional public administration in planning and organizing of landscape parks maintenance programs. OR eight (8) years of responsible experience in the maintenance of parks infrastructure, including four (4) years of supervisory and management experience. A valid driver's license. **APPLY BY: FRIDAY, 1/31/97.** Call the City of San Jose Human Resources Department for application packet at (408) 277-4205. EOE. 1/97

JOIN A WINNING TEAM...CLEAN CUT, INC. is an extremely successful, award-winning, full-service landscape management company. We offer exceptional opportunities for growth, good salaries, benefits and a challenging work environment. We are looking for individuals with experience in the landscape industry (maintenance, construction, irrigation or tree care), who are hard workers with a strong desire to succeed. Must possess excellent management skills (able to manage people, resources and time); ability to negotiate with vendors and sub-contractors; and have an outstanding customer service attitude. Must have a clean driving record with valid D.L., and verifiable references. Bilingual a plus but not necessary. We demand long hours, hard work, and quality results, but we reward those who play a positive role in our growth. We have over 300 employees, are headquartered in Austin with offices in Houston, Dallas and San Antonio. We have openings in various departments and in various offices. Please **FAX** resume to **512-452-2378**; or **MAIL** to **P.O. Box 15391, Austin, TX 78761.** Send atten: Human Resources. 1/97

MANAGEMENT TRAINEES WANTED- Kapp's Green Lawn, an established, fast growing company, is seeking management & sales trainees for our Midwest locations (Indiana, Missouri, Ohio & Pennsylvania). Lawn care experience or college credits helpful. Must be able to relocate. Excellent benefits. Starting salary upper \$20's. Come work for a company that cares about it's employees! Send resume to **Michael Markovich, Kapp's Green Lawn, Inc., PO Box 9038, Ft. Wayne, IN 46899** or fax resume to **219/432-7892.** 1/97

FLORAPERSONNEL, INC. In our second decade of performing confidential key employee searches for the landscape/horticulture industry and allied trades worldwide. Retained basis only. Candidate contact welcome, confidential, and always free. 1740 Lake Markham Road, Sanford, FL 32771. **PHONE (407)320-8177. FAX (407)320-8083.** 12/97

SERVICE MANAGER Join a fast growing company in Southwestern Connecticut. Ambitious, highly motivated individual with good communications skills, management capabilities and mechanical/equipment talent to take charge of lawn care and mowing operations. Send your resume and salary requirements to: President, P.O. Box 214, Greens Farms, CT 06436. 2/97

Great Opportunity—Operations Manager. Showcase Landscape, a leader in Minneapolis, St. Paul has a great opportunity for the position of Operations Manager. The qualified applicant should have good organization skills, and a solid background in Grounds Maintenance and Landscape Management. Responsibilities include: Grounds Maintenance, Landscape, Irrigation, and Snowplowing. Solid support staff and sales staff already in place. We need a leader who is committed to customer satisfaction and is able to actively find ways to lower costs. Please send resume and salary requirements to **Showcase Landscape 7086 Quantico Lane, Maple Grove, MN 55311**, or call Steve st (612)425-5296. 2/97

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FOR SALE

1996 Ford F350-5 speed- 6,000 miles steel bed w/fert box, 600 gal FMC tank, 10/10 Bean pump, 5.5 Honda elec start, Hanney hose reel \$25,900.00. 1995 Chev 1 ton-5 speed- 10,500 miles, alum. bed w/fert box, 600 gal FMC tank, Hanney hose reel, 8 HP Honda eng, 10 gal/min hydro cell pump \$26,900.00. 1990 Chev 15 Series- 5 speed 200 gal FMC spray unit w/elec start and Hanney hose reel \$8,995.00. 1989 GMC 1 ton- 600 gal tank w/mech adj, Hanney hose reel, 10/10 Bean pump \$11,900.00. 1986 Chev 1 ton 6.2 diesel- new 6.2 eng from Good Wrench, 700 gal split FMC tank w/mech adj. 10/10 Bean pump, Hanney hose reel \$9,450.00. **CALL 502 684-4331** 1/97

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. 12/97

Protect yourself and your applicators from granular fertilizer and pesticide dust when operating Lesco and Scott's commercial spreaders with the Applicator's Friend shield. Now only \$35.95! Riverside Gardens, Inc. 1-800-595-2774. 3/97

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WHOLESALE DISTRIBUTOR

Needed to market environmentally friendly, liquid, slow-release fertilizer products direct from manufacturer. Ken Franke, P.O. Box 123, Plato, MN 55370; 800-832-9635. 12/97

MARKET SHOWCASE GOLF COURSE MARKETPLACE CLASSIFIED ADVERTISING

For all ads under \$250, payment must be received by the classified closing date. We accept VISA, MASTERCARD & AMERICAN EXPRESS. Credit card orders are accepted by phone.

ISSUES	CLOSING DATES
March 1997	2/6
April 1997	3/6
May 1997	4/8
June 1997	5/8
July 1997	6/6

(Please call Sales Rep to confirm dates.)

SEND AD COPY WITH PREPAYMENT TO: Dan Hoke, **LANDSCAPE MANAGEMENT**, 7500 Old Oak Blvd., Cleveland, OH 44310. For more information call: 1-800-225-4569 or 216-891-2762, Fax: 216-826-2865.

Grab Bag

Fill 'er up with fescue!

David Ramey of Columbus, Ohio, says grass clippings and other sources of organic matter can be used to produce butanol, an industrial solvent used in perfume, rubber, pharmaceuticals and many other products. Butanol is a clean-burning alcohol and it can be used as a substitute for gasoline. His name for the resulting product is Butyl-Fuel™.

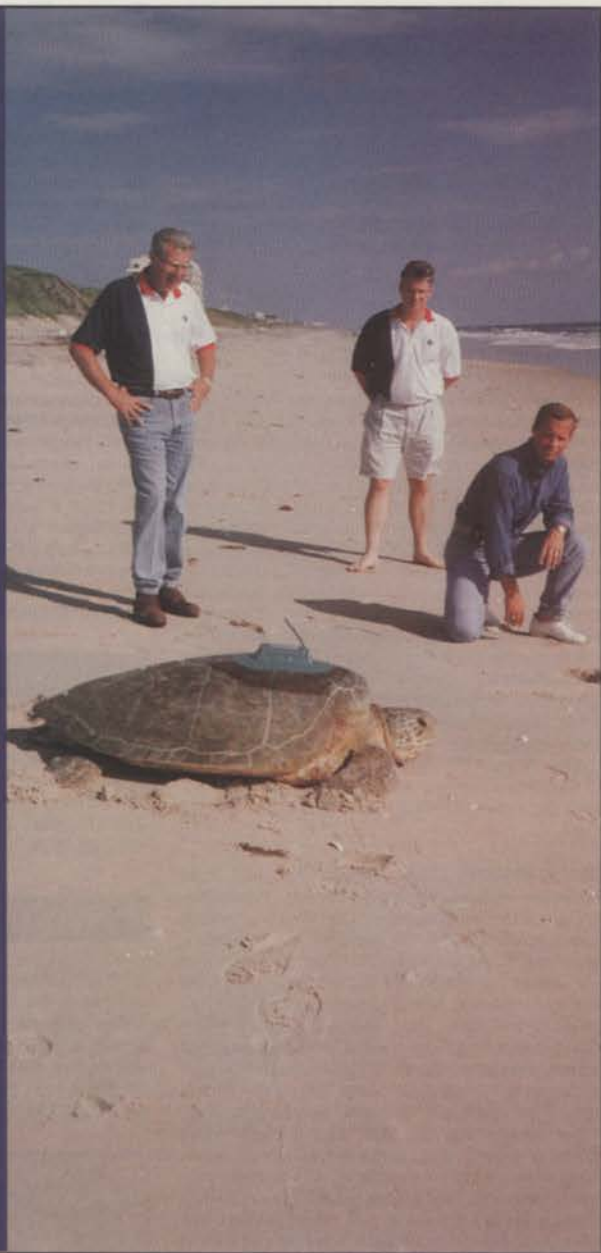
Armed with patent-pending and trade secrets, Ramey claims the product can double the yield of butanol from organic matter such as corn. Ramey is proceeding with plans to build a production facility in northwest Ohio. Depending on the level of investor interest, he believes the plant can become operational and producing 5 million gallons of butanol a year by 2000.

"We're not trying to reinvent anything," he tells LANDSCAPE MANAGEMENT. "The fermentation of organic matter into butanol and acetone, which are industrial solvents, started in 1912 and flourished up until the 1950s. But they used mostly corn and sugar cane syrup from Cuba. So when Cuba became nationalized they stopped that. Also, the petrochemical companies could make it (butanol) cheaper because oil was \$1.23 a barrel in those days."

Ramey is at Environmental Energy, Inc., Columbus, Ohio, at (614) 487-3629.

SLOW AND STEADY

Snapper Mower has helped launch a research project that uses state-of-the-art technology to rescue endangered marine turtles. The program is called the Sea Turtle Migration-Tracking Education Program. The Sea Turtle Survival League is Snapper's not-for-profit partner in the project. Four turtles have been put to sea wearing satellite transmitters, which will help scientists track the green turtles migration patterns. Researchers say it's still a mystery where these turtles spend 90 percent of their lives. Shown in the photo at Florida's Melbourne Beach are (behind turtle, from center to right) Snapper President and CEO Jerry Schweiner; Snapper area sales manager, Todd McMahon; and Florida Commissioner of Education, Frank Brogan. The four turtles are named Sam, Snapper, Amelia and Carmen. You can track the turtle trace yourself if you visit the Sea Turtle Survival Web Page, at www.ccturtle.org.



Words of wisdom, with green industry relevance

"Turfgrass is the Rodney Dangerfield of the plant world."

—TERRY KURTH, BAREFOOT GRASS, MADISON, WISC.

Grab Bag features brief observations and prognostications throughout the green industry. If you have an unusual photo or comment you'd like to share with us, please send it in...

LANDSCAPE
management

January 1997

This card is void after March 15, 1997

NAME (please print) _____
 TITLE _____
 FIRM _____
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 PHONE (____) _____ FAX (____) _____
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I would like to receive (continue receiving) **LANDSCAPE MANAGEMENT** free each month: Yes No

Signature: _____ Date: _____

1. My primary business at this location is: (check ONE only)

01 250 GOLF COURSES

CONTRACTORS/SERVICE COMPANIES

- 02 255 Landscape Contractors (installation and maintenance)
 03 260 Lawn Care Service Companies
 04 265 Custom Chemical Applicators (ground and air)
 05 270 Tree Service Companies/Arborists
 06 275 Landscape Architects
 07 280 Land Reclamation and Erosion Control
 08 285 Irrigation Contractors
 Other (please specify) _____

INSTITUTIONAL FACILITIES

- 09 290 Sports Complexes
 10 295 Parks
 11 300 Right-of-Way Maintenance for Highways, Railroads or Utilities
 12 305 Schools, Colleges, Universities
 13 310 Industrial or Office Parks/Plants
 14 315 Shopping Centers, Plazas or Malls
 15 320 Private/Public Estates or Museums
 16 325 Condos/Apartments/Housing Developments/Hotels/Resorts
 17 330 Cemeteries/Memorial Gardens
 18 335 Hospitals/Health Care Institutions
 19 340 Military Installations or Prisons
 20 345 Airports
 21 350 Multiple Government Municipal Facilities
 Other (please specify) _____

SUPPLIERS & CONSULTANTS

- 22 355 Extension Agents/Consultants for Horticulture
 23 360 Sod Growers/Turf Seed Growers/Nurseries
 24 365 Dealers/Distributors/Formulators/Brokers
 25 370 Manufacturers
 26 Other (please specify) _____

2. Which of the following best describes your title? (check ONE only)

- 27 10 **Executive/Administrator**- President, Owner, Partner, Director, General Manager, Chairman of the Board, Purchasing Agent, Director of Physical Plant
 28 20 **Manager/Superintendent**- Arborist, Architect, Landscape/Grounds Manager, Superintendent, Foreman, Supervisor
 29 30 **Government Official**- Government Commissioner, Agent, Other Government Official
 30 40 **Specialist**- Forester, Consultant, Agronomist, Pilot, Instructor, Researcher, Horticulturist, Certified Specialist
 31 Other Titled and Non-Titled personnel (please specify) _____

3. SERVICES PERFORMED (Check ALL that apply)

- 31 A Mowing
 32 B Turf Insect Control
 33 C Tree Care
 34 D Turf Aeration
 35 E Irrigation Services
 36 F Turf Fertilization
 37 G Turf Disease Control
 38 H Ornamental Care
 39 I Landscape/Golf Design
 40 J Turf Weed Control
 41 K Paving, Deck & Patio Installation
 42 L Pond/Lake Care
 43 M Landscape Installation
 44 N Snow Removal
 45 O Other (please specify) _____

4a. Do you specify, purchase or influence the selection of landscape products? Yes No

4b. If yes, check which products you buy or specify: (check ALL that apply)

- 46 1 Aerators
 47 2 Blowers
 48 3 Chain Saws
 49 4 Chipper-Shredders
 50 5 De-icers
 51 6 Fertilizers
 52 7 Fungicides
 53 8 Herbicides
 54 9 Insecticides
 55 10 Line Trimmers
 56 11 Mowers (reel/rotary)
 57 12 Snow Removal Equipment
 58 13 Sprayers
 59 14 Spreaders
 60 15 Sweepers
 61 16 Tractors
 62 17 Truck Trailers/Attachments
 63 18 Trucks
 64 19 Turfseed
 65 20 Utility Vehicles

5. Do you have a modem? Yes No

6. Do you subscribe to an on-line service? Yes No

7. Is CD-ROM available in your workplace? Yes No

101	119	137	155	173	191	209	227	245	263	281	299
102	120	138	156	174	192	210	228	246	264	282	300
103	121	139	157	175	193	211	229	247	265	283	301
104	122	140	158	176	194	212	230	248	266	284	302
105	123	141	159	177	195	213	231	249	267	285	303
106	124	142	160	178	196	214	232	250	268	286	304
107	125	143	161	179	197	215	233	251	269	287	305
108	126	144	162	180	198	216	234	252	270	288	306
109	127	145	163	181	199	217	235	253	271	289	307
110	128	146	164	182	200	218	236	254	272	290	308
111	129	147	165	183	201	219	237	255	273	291	309
112	130	148	166	184	202	220	238	256	274	292	310
113	131	149	167	185	203	221	239	257	275	293	311
114	132	150	168	186	204	222	240	258	276	294	312
115	133	151	169	187	205	223	241	259	277	295	313
116	134	152	170	188	206	224	242	260	278	296	314
117	135	153	171	189	207	225	243	261	279	297	315
118	136	154	172	190	208	226	244	262	280	298	316



NO POSTAGE
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IF MAILED
IN THE
UNITED STATES

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FIRST-CLASS MAIL PERMIT NO 950 PITTSFIELD MA

POSTAGE WILL BE PAID BY ADDRESSEE

LANDSCAPE
management

ADVANSTAR COMMUNICATIONS INC
 PO BOX 5054
 PITTSFIELD MA 01203-9697





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ADVANSTAR COMMUNICATIONS INC
PO BOX 5054
PITTSFIELD MA 01203-9697



January 1997

This card is void after March 15, 1997

NAME (please print) _____
 TITLE _____
 FIRM _____
 ADDRESS _____
 CITY _____ STATE _____ ZIP _____
 PHONE (____) _____ FAX (____) _____
 INTERNET/E-MAIL ADDRESS _____

I would like to receive (continue receiving) LANDSCAPE MANAGEMENT free each month: Yes No

Signature: _____ Date: _____

1. My primary business at this location is: (check ONE only)

- 01 250 GOLF COURSES
- CONTRACTORS/SERVICE COMPANIES**
- 02 255 Landscape Contractors (installation and maintenance)
 03 260 Lawn Care Service Companies
 04 265 Custom Chemical Applicators (ground and air)
 05 270 Tree Service Companies/Arborists
- 06 275 Landscape Architects
 07 280 Land Reclamation and Erosion Control
 08 285 Irrigation Contractors
 Other (please specify) _____
- INSTITUTIONAL FACILITIES**
- 09 290 Sports Complexes
 10 295 Parks
 11 300 Right-of-Way Maintenance for Highways, Railroads or Utilities
 12 305 Schools, Colleges, Universities
 13 310 Industrial or Office Parks/Plants
 14 315 Shopping Centers, Plazas or Malls
 15 320 Private/Public Estates or Museums
- 16 325 Condos/Apartments/Housing Developments/Hotels/Resorts
 17 330 Cemeteries/Memorial Gardens
 18 335 Hospitals/Health Care Institutions
 19 340 Military Installations or Prisons
 20 345 Airports
 21 350 Multiple Government Municipal Facilities
 Other (please specify) _____

- SUPPLIERS & CONSULTANTS**
- 22 355 Extension Agents/Consultants for Horticulture
 23 360 Sod Growers/Turf Seed Growers/Nurseries
 24 365 Dealers/Distributors/Formulators/Brokers
- 25 370 Manufacturers
 26 Other (please specify) _____

2. Which of the following best describes your title? (check ONE only)

- 27 10 Executive/Administrator- President, Owner, Partner, Director, General Manager, Chairman of the Board, Purchasing Agent, Director of Physical Plant
- 28 20 Manager/Superintendent- Arborist, Architect, Landscape/Grounds Manager, Superintendent, Foreman, Supervisor
- 29 30 Government Official- Government Commissioner, Agent, Other Government Official
- 30 40 Specialist- Forester, Consultant, Agronomist, Pilot, Instructor, Researcher, Horticulturist, Certified Specialist
- 31 Other Titled and Non-Titled personnel (please specify) _____

3. SERVICES PERFORMED (Check ALL that apply)

- 31 A Mowing
 32 B Turf Insect Control
 33 C Tree Care
 34 D Turf Aeration
 35 E Irrigation Services
- 36 F Turf Fertilization
 37 G Turf Disease Control
 38 H Ornamental Care
 39 I Landscape/Golf Design
 40 J Turf Weed Control
- 41 K Paving, Deck & Patio Installation
 42 L Pond/Lake Care
 43 M Landscape Installation
 44 N Snow Removal
 45 O Other (please specify) _____

4a. Do you specify, purchase or influence the selection of landscape products? Yes No

4b. If yes, check which products you buy or specify: (check ALL that apply)

- 46 1 Aerators
 47 2 Blowers
 48 3 Chain Saws
 49 4 Chipper-Shredders
 50 5 De-icers
 51 6 Fertilizers
 52 7 Fungicides
 53 8 Herbicides
 54 9 Insecticides
 55 10 Line Trimmers
- 56 11 Mowers (reel/rotary)
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INTRODUCING THE NEW HYDRO-POWER 1280



MOST POWERFUL IN ITS CLASS

Choose the 52 or 61 horsepower Yanmar diesel and tackle the toughest jobs. The deck system has a 62" full floating front deck that raises vertically for ease of service, and two 41" side decks supported by four caster wheels for full floatation. The side decks are swept forward for maximum trimability.

The 1280 operator console features a tilt steering column,

convenient implement controls, ease of entry/exit and many other standard features.

The 1280 has reduced noise levels by locating the muffler and air intake in the enclosed engine compartment.

An optional parallel cross flow hydrostatic four wheel drive system offers maximum traction.

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David Major, CGCS
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Del Mar CC,
Rancho Santa Fe, CA

New, salt tolerant
creeping bentgrass
specifically
developed for
fairways



Ninth hole, Del Mar CC; Joe Lee, architect

"Seaside II Has Success Written All Over It."

I resodded high stress areas in my PennLinks fairways with Seaside II nearly a year ago, and I am very pleased with its performance. I selected Seaside II with improved dollar spot disease resistance and salt tolerance to address our two major turf challenges; the coastal influence and potential sodium buildup from irrigation. I find Seaside II a strong ally to our PennLinks fairways, and

in the future, we will slit seed with Seaside II, where needed, to enhance turf quality.

Our bentgrass fairways make Del Mar Country Club unique to southern California, and spares us overseeding bermudagrass every winter season. Seaside II complements our PennLinks greens and tees, too.

Seaside II has success written all over it.
- David Major

Write or call today for your FREE copy of 'The New Penn Pals' booklet, or 15 minute video with Dr. Joe Duich speaking on new 'Penn Pals' maintenance.

The 'Penn Pals': Penncross, Penneagle, PennLinks, PennWay Blend, PennTrio Blend, NEW Penn A-1, A-2, A-4, G-1, G-6 and Seaside II

Circle No. 120 on Reader Inquiry Card

Tee-2-Green Corp.

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800-547-0255
503-651-2130
FAX 503-651-2351