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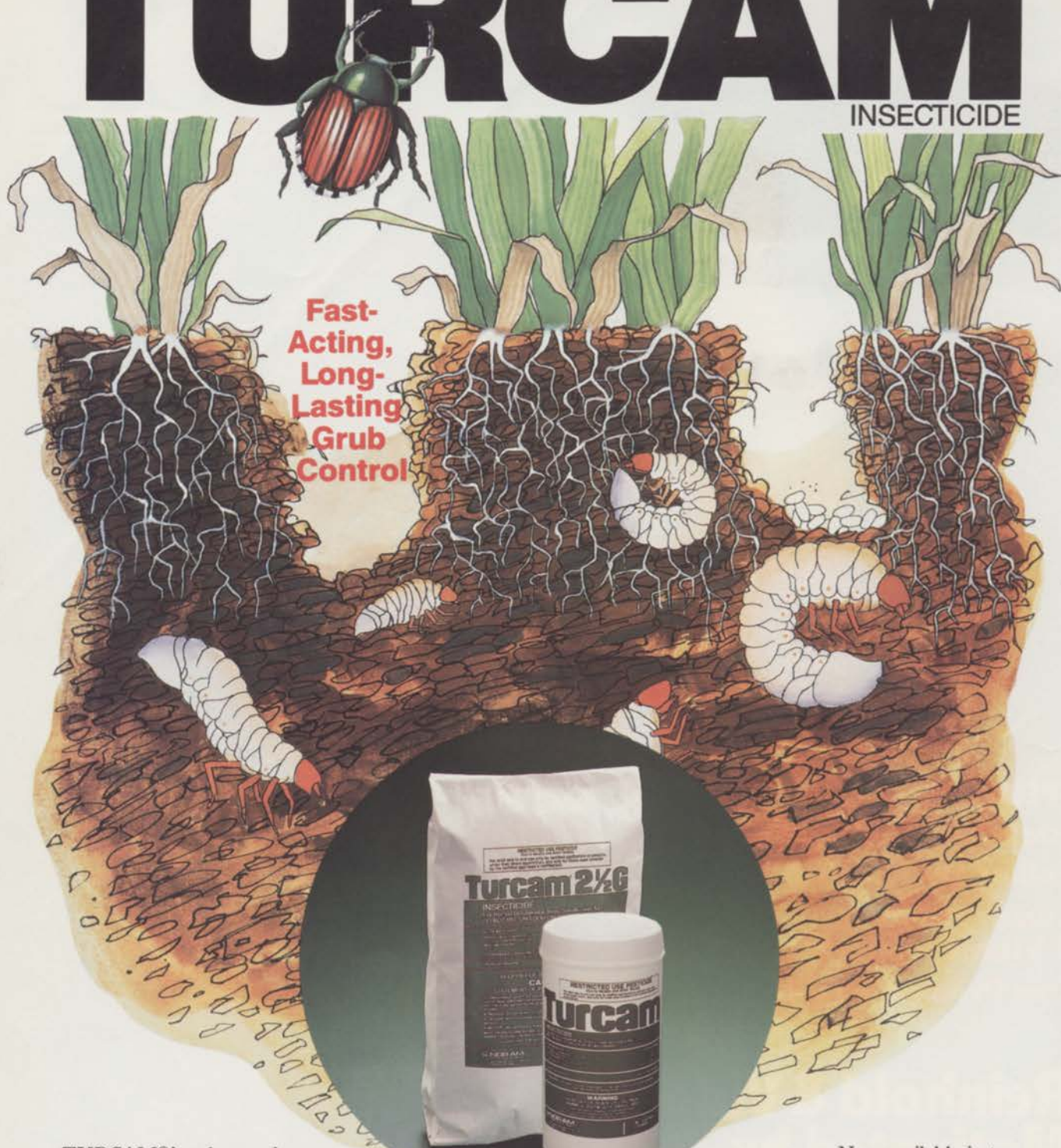
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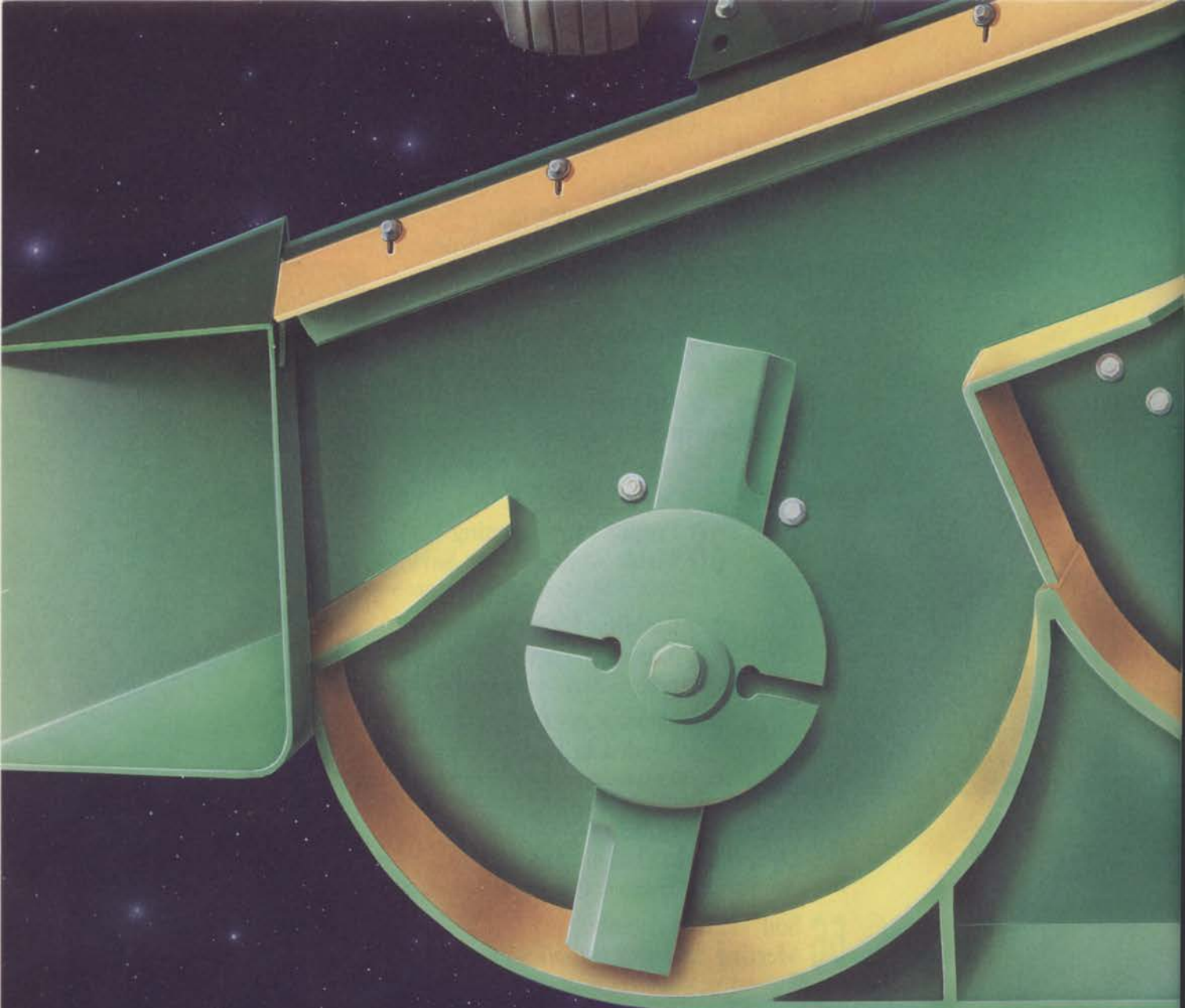
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EDITOR'S FOCUS

RESIDENTS OF MONTECITO, CALIF., are up in arms over the unbelievable amounts of water a prominent resident uses (or wastes as some would say) to water his 23-acre yard.

Harold Simmons, most often in the news for his corporate raiding, was recently reported to have used nearly 10 million gallons of drinking water on his "normal" sized yard. That's enough to satisfy a typical family of four for 30 years, according to experts.

In addition to the huge amounts of water being used on his lawn, residents were particularly distressed to hear that Simmons only spends about one week a month in Montecito.

Like many California cities, Montecito has rationed water for more than a decade. Nearby Santa Barbara, recently banned lawn watering altogether.

In addition, it took a court order for the Montecito Country Club to stop using such exorbitant amounts of drinking water on its golf courses and grounds.

Incidents like this aren't just prevalent in California. Similar stories can be found in Arizona, Florida and other arid states fighting dwindling water supplies.

And episodes like this only serve as reminders to the general public that the lawn and landscape maintenance industry wastes water rather than uses it wisely for the benefit of the environment.

When the lawn watering ban was passed in Santa Barbara, a series of reactive events followed: An outcry by landscape contractors resulted in the city's compromise to allow drip irrigation; many landscape designs were altered to include more trees, shrubs and hardscape areas rather than planned turf areas; and complaints that hotels, car washes, etc. weren't included in the ban were voiced to no avail.

Water conservation is now and will continue to be a serious problem, and it's one the green industry can't afford to ignore whether you live in California or Illinois.

Contractors must act now to promote proper and sensible irrigation methods. Proper calculation of a landscape's water requirements should be followed, rather than the all too common seat-of-the-pants approach. Water sensing devices can also eliminate over watering.

As visible as the use of water is in the green industry, it's imperative that contractors act responsibly and take needed steps to promote a positive image.

In this month's special irrigation sec-



tion, basic irrigation design, proper setting of controllers and continued maintenance tips are discussed. Use these recommendations to review the system you have in place or to help you start a new one.

...

In other news, controversial New York pesticide notification regulations thrown out by a judge last year will remain invalid after the state's highest court refused to hear an appeal.

The New York State Court of Appeals refused to hear an appeal from the Department of Environmental Conservation to reinstate stringent pesticide regulations, first rejected by the Supreme Court's Appellate Division.

The court ruled that the DEC overstepped its authority when imposing the regulations — a right belonging only to the legislature.

Cancellation of the regulations eliminates excessive signage, supplying customers with contracts 48 hours in advance of an application and retaining contracts for six years among other things.

Pesticide notification laws are still in effect requiring operators to post 4- by 5-inch signs after applications.

Tom West, an attorney representing the green industry in the two-and-a-half year battle, said this ruling marks the first time the court has decided not to hear an environmental case.

Congratulations to the New York State Turfgrass Association, the Professional Lawn Care Association of America, the Pesticide Public Policy Foundation and the National Arborist Association, among others, who contributed to this precedent setting victory. — Cindy Code ■

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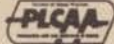
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FOCUS ON: BREAKING NEWS

WILKINSON RESIGNS, FUTURE OF 3PF UNKNOWN

WHEN JIM WILKINSON STEPS DOWN as executive director of the Pesticide Public Policy Foundation, he may be signaling the end to the association he has headed for the past three years.

Wilkinson announced last month that he will resign his position, effective May 4, to accept a job as chief operating officer of Lawnmark, Hudson, Ohio.

Lawnmark operates 13 branch offices from Ohio to Maine, reporting annual revenues in excess of \$10 million.

In one of his last official acts as executive director, Wilkinson and the foundation's board of directors will vote to keep 3PF running or close its doors.

"It was a situation where 3PF was not being supported financially to the degree that I felt it needed to be supported," Wilkinson said. "It certainly was not receiving the level of support that we had budgeted for. As I result, I couldn't afford to stay in the 3PF business."

The future of 3PF was to have been determined by its board of directors May 2 in Washington, D.C.

Mixed reaction greeted Wilkinson's decision to resign.

"Jim did an outstanding job as executive director of 3PF, but in the process found he had to devote more or as much time to fund raising as he did to fulfilling his charge," said Bob Felix, executive director of the National Arborist Association. "Industry priorities have changed and financial support (for 3PF) has changed. I hate to see it go, but 3PF can no longer sustain itself and should close."

There are those, however, who think the organization should live on.

"I doubt 3PF will die, there are too many people who believe in it," said Jerry Faulring, president of HydroLawn, Gaithersburg, Md. "There's a strong consensus for its' need, but they don't want to pay for it."

3PF was formed in 1983 primarily through the combined efforts of the NAA and the Professional Lawn Care Association of America to respond to legislative and regulatory activity.

Felix admitted that the NAA hasn't been generous with financial contributions but, like others, he has devoted personal time and energy to 3PF.

Other trade associations including the National Pest Control Association, the Associated Landscape Contractors of

America, the International Society of Arboriculture and the Utility Arborists Association came to identify with 3PF, but offered nominal financial support.

It's undecided whether this lack of monetary support stemmed from the close alignment between 3PF and PLCAA, its primary financial supporter.

"The issues impacted all urban/suburban applicators. 'Lawn care' just became a catch-all word," Felix said.

PLCAA's board of directors had voted to contribute \$50,000 to 3PF in 1990, a significant share of 3PF's \$180,000 annual operating budget. But 3PF failed to generate sufficient funding from other trade associations, according to Wilkinson.

With PLCAA's contribution, 3PF expected to generate about \$130,000 to \$140,000 this year.

Martha Lindauer, ALCA director of

communications said financial commitments are needed before a decision is made to keep 3PF afloat. One option being considered — a skeleton staff — would not solve but create more financial problems, she said.

The NPCA annually donates about \$4,000 to 3PF, and would like to see it continue.

"The state affairs committee in 3PF has developed a good network and ability to share information," said Harvey Gold, NPCA executive director. "We just need to see how it can continue functioning at a minimal cost."

PLCAA is taking a "wait and see" approach regarding the future of 3PF.

"3PF filled a unique niche," said Rick Steinau, PLCAA president. "However, for a single association to support a group at the extent that we've been doing raises lots of questions for me." ■

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CONGRESSIONAL REPORT ATTACKS PESTICIDES, BROCHURES

Although no legislation is pending, one key U.S. senator has made it clear that the lawn maintenance industry faces federal action within the next year or two

if it fails to take more care with the pesticides it uses.

The lawn maintenance industry and its chemical industry supporters cried "foul" and accused the Senate of dredging up old scare stories to revive past controversies.

At the same time, the Professional Lawn

Care Association of America, holding the first of what promises to be an annual lobbying event, won a seat on a presidential advisory council that may enable a defense of some pesticides, including 2,4-D.

Earlier, however, Sen. Harry Reid, D-

GREEN INDUSTRY REPRESENTATIVES PARTICIPATE IN 'DAY ON THE HILL'

THE SECTOR OF U.S. SOCIETY that would seem to have the greatest claim to the phrase, "grass roots lobbying," has tried it, likes it and plans to do it again — probably every year.

About 40 members of the lawn maintenance industry and 20 chemical manufacturer's representatives fanned out across Capitol Hill last month to lobby their senators and promote good will.

The trip could not have been better timed. Unrelated to "Day on the Hill" events, sponsored by the Professional Lawn Care Association and Monsanto, a Senate subcommittee held a hearing on the regulation of lawn maintenance pesticides, featuring citizens who have complained of a general lack of protection for persons suffering adverse, sometimes fatal, reactions to the chemicals.

Despite the pall cast by the hearing, PLCAA and Monsanto were so taken by the enthusiasm of the 60 Day on the Hill participants and the success of their visit, that they committed themselves to a repeat next year.

In addition to immediate success, two key meetings attended by PLCAA President Rick Stein-

au could have some long lasting effects.

Steinau was invited to represent PLCAA on a presidential advisory council being established to deal with pesticides in agriculture and related industries such as lawn maintenance.

Steinau was also one of several people to meet with Anne Lindsay, director of the Pesticide Registration Division of the Environmental Protection Agency, and reported good results from that session.

Steinau said he thought the invitation to sit on the White House council came as a direct result of Day on the Hill. He said he hoped to use his new position to ease some of the restrictions on 2,4-D and other pesticides used in lawn maintenance.

Lindsay, he said, stressed in their meeting the importance of integrated pest management as one direction in which the EPA would like to see the lawn maintenance industry move.

The Day on the Hill contingent, which included one participant from as far as Kennewick, Wash., spent one morning visiting their senators, representatives or aides. At an afternoon follow-up brief-

ing, attendees universally described their visits as positive.

A handful of lawn maintenance operators began their visit to Washington by attending the Senate hearing, followed by a lunch and welcome by Steinau and Dave Duncan of Monsanto.

Paul Schuda, deputy director of the Environmental Fate and Effects Division of EPA's Office of Pesticides Programs, outlined his department's operations, augmented by a slide show. Paul Weller, president of Agri/Washington, a lobbying group, instructed the attendees on how to conduct their grass roots lobbying effort.

The attendees joined other business groups at a breakfast for about 200 people the next day at the U.S. Chamber of Commerce headquarters. There, Rep. Steve Bartlett, R-Tex., warned they had better organize to fight a renewed "agenda on the other side" to strengthen labor unions and civil rights.

The highlight of the visit for most of the lawn maintenance operators, however, came the previous day when they visited the Executive Offices Building, part of the White House complex, to listen to a talk from Cooper Evans, special assistant to the president for agricultural and food issues.

Evans spoke of agriculture issues and touched only lightly on the lawn maintenance industry. He did say, however, that the current process of re-registering pesticides and other chemicals is not efficient. He noted that some do not get re-registered because



Executive Offices Building.

the process isn't profitable to the chemical company. Other chemicals may have 20 uses, but get re-registered only for the five most profitable uses.

"You ought to get involved in a very major way," he advised the group. "I'm surprised how many so-called minor uses apply to very major crops, and I think certainly lawns are a major crop in this country."

Evans also advised them to keep in touch with their legislators. The process is important, Evans said. "You have to be a spokesman for your industry on a continuing basis."

At dinner later at a Capitol Hill restaurant, Reps. Charles Stenholm, D-Tex., and Pat Roberts, R-Kan., offered their support for the industry's position on pesticide regulation.

Roberts told operators that the congressional effort was centered around "trying to establish a reasonable risk." But the policy doesn't always work.

Steinau suggested the 60 who did come to Washington appeared to already have grass roots lobbying in their blood.

"They walked away after having met with their legislators on a federal level. Now they go back to their states and it's a piece of cake for them to go see their state legislators. We felt that was very, very beneficial."



"Day on the Hill" will be repeated next year.

Nev., opened a hearing by his Toxic Substances Subcommittee by reading from a government report of advertising brochures distributed by lawn maintenance companies:

- "Our products are practically non-toxic; no one gets sick."
- "All of our products are legal and registered at EPA as practically non-toxic."
- "The only way to be affected by 2,4-D would be to lie in it for a few days."
- "The safety issue has been blown out of proportion. Such a small amount of chemicals are put down directly on plants... (They do) not affect animals or people."
- "All chemicals are non-toxic."
- "Dogs may get a rash or feel irritated, but they will only feel a little itchy. This is the same reaction the applicator gets when a pesticide touches his skin."

Reid used the highly publicized hearing to warn the Environmental Protection Agency to control the use of lawn maintenance pesticides, and the Federal Trade Commission to deal with "misleading" advertising claims.

Although only a handful of the more than 60 maintenance operators and suppliers attended the hearing, the event dominated their conversation at "Day on the Hill."

Except for the testimony of PLCAA and chemical suppliers, the hearing cen-

tered on three case studies of harm said to be caused by pesticides and on a report by the General Accounting Office, the investigative arm of Congress, that accused the EPA of not doing enough to control the use of pesticides.

The GAO report concluded that not only was the EPA lax in controlling pesticides, "the general public receives misleading information on pesticide hazards" and EPA has "made limited use of its authority over unacceptable advertising safety claims."

Sen. Joseph Lieberman, D-Conn., noted a ChemLawn brochure that said its pesticides "have passed scientific review of their safety and effectiveness and are registered by their manufacturers with the U.S. Environmental Protection Agency."

Lieberman said, "As a former attorney general who prosecuted fraudulent and misleading advertising cases, I can tell you I have serious problems with the wording of this brochure. Yet the GAO reports that neither the EPA nor the FTC has taken effective action against any of these companies over their advertising."

Reid and Lieberman agreed the agencies had to be "more aggressive" in their oversight of the lawn maintenance industry and its promotional claims. Sen John Warner, R-Va., attempted to shield the in-

dustry from the onslaught, but was unsuccessful until the hearing was delayed.

But Rick Steinau, president of the PLCAA, said the damage had been done when the subcommittee replayed old horror stories before the public while the television cameras were present, but delayed the green industry's response until the afternoon when national news media was absent.


Thomas Delaney, PLCAA director of government affairs, told senators at the afternoon session that despite accusations that lives were endangered for the sake of what was essentially a cosmetic operation, the care of lawns benefits the populace.

Delaney said the industry is primarily "in the lawn service business, not the pesticide application business. We would prefer to avoid the use of pest control products, and therefore welcome alternative approaches."

But, he said, "Effectiveness of currently available biological control methods remains disappointing and unacceptable to our customers."

Instead of bashing an industry that serves 9 percent to 11 percent of U.S. homeowners, he suggested, there should be greater investments in "private and federal research funding."

He conceded that "customers and their

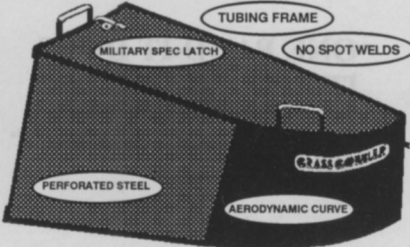


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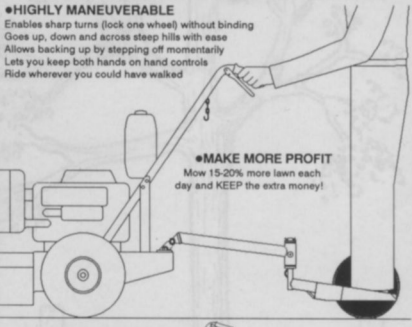
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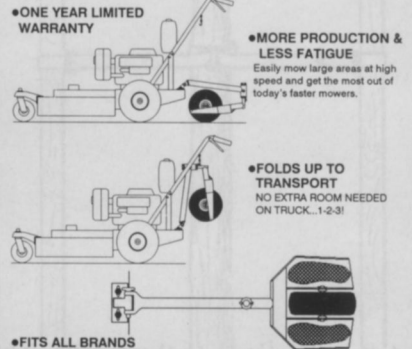
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adjacent neighbors have a right to know about the products maintenance companies use, and we realize we must do a better job in communicating with those who want to know."

Steinau summed up the industry's reaction to the hearing when he said, "This really was an opportunity for Sen. Reid and his committee to sound off on an issue which they obviously thought would gain some mileage with the press."

As for the substantive criticism voiced at the hearing, he said that speaking personally and not as PLCAA president, "pesticide applicators should be licensed" under a state process. The association itself has no formal position.

But, Steinau said, "licensing overall would help our industry. It would give more credence to the need for professional lawn care applicators."

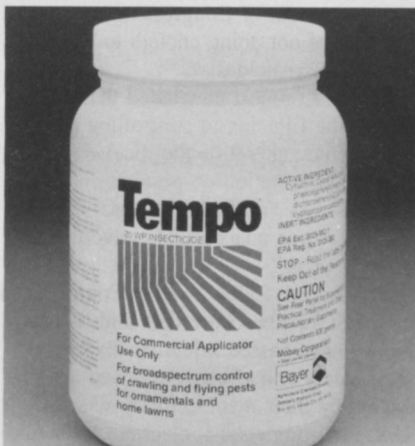
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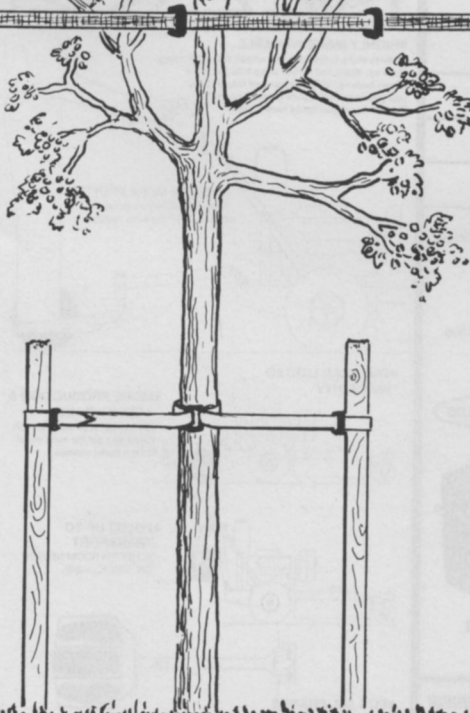
Shortstop also performed well in other trials, including a first ranking among commercially available varieties for its dark green genetic color characteristics. ■

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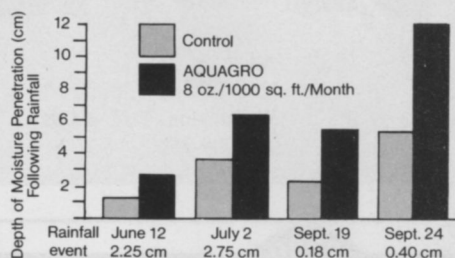


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ASSOCIATION NEWS

ROBERT MARONDE, PRESIDENT AND CEO of Exotic Plant Rentals Inc., an interiorscape company headquartered in South Elgin, Ill., has been elected to a one-year term as president of the **Associated Landscape Contractors of America**.

Maronde has been an active member of the association since joining ALCA in 1978. He has served on the organization's

executive board as secretary, second vice president, first vice president, vice president of finance and president-elect.

He also served as chairman of the Interior Plantscape Division of ALCA.

Other ALCA officers for 1990 are: Eldon Dyk of Allen Keesen Landscaping, Denver, Colo., president-elect; Tom Garber of Colorado Landscape Enterprises,

Arvada, Colo., vice president of finance; and Gary Thornton of Thornton Landscape Co. and Thornton Computer Management Systems, Maineville, Ohio, secretary.

Dyk served on the board of the Landscape Management Division of the association from 1984-88 and was chairman of the Student Field Days the same four years. Garber has served as chairman of

the Landscape Management Division and as a member of the education, crystal ball and safety committees. Thornton has served on the marketing, safety and crystal ball committees.

1990 board of directors are Lydia Paneri, chairwoman of the IPD; Terry Anderson, chairman-elect of IPD; Arnie Sieg, chairman of the Exterior Landscape Division; David Minor, chairman-elect of ELD; Bill Wilder, state association

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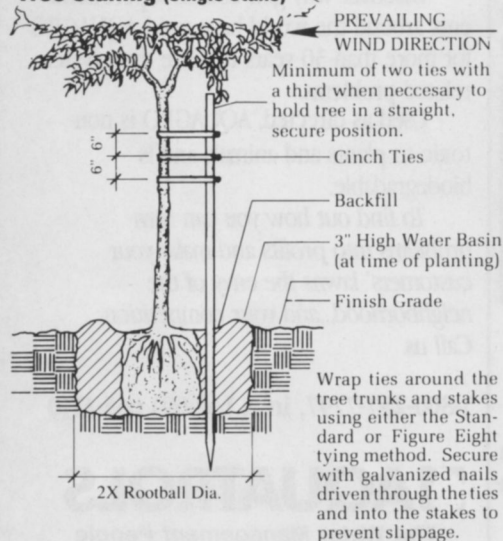
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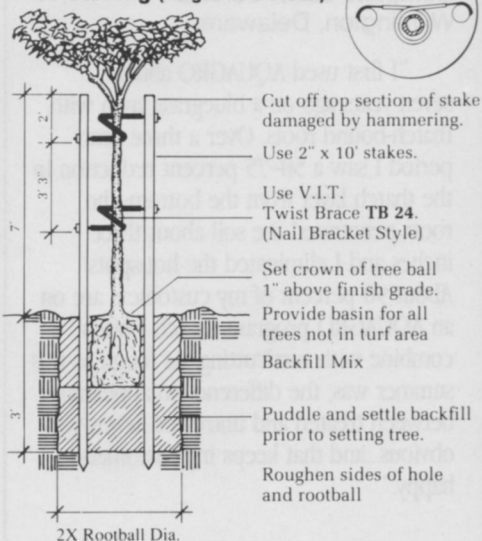
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council representative and Jack Dirksing, associate member director.

Directors at large for 1990 include Bruce Hunt, Joe Carpenter, Rich Chiancone, Richard Ott and Sally Reynolds. Division directors are Judson Griggs, Gary Magnum, Joseph Skelton and Barbara Helfman.

The 1990 joint **American Association of Nurserymen/Tennessee Nurserymen's Association Annual Convention and Nursery Industry Exposition** set for July 12-16 in Nashville, Tenn., will start with a keynote address by Charles Hess, assistant secretary of agriculture for the U.S. Department of Agriculture.

Hess is co-chairman of the Joint Council on Food and Agricultural Sciences, and supervises several branches of the USDA.

The combined expo/convention offers attendees an opportunity to view more than 500 exhibits featuring a wide variety of nursery stock and related supplies. An expanded educational seminar program is also available.

Two grower tours will be held during the five-day conference.

Cost for a member of either of the sponsoring groups is \$265 before June 22 and \$315 after that date. For non-members,

the prices are \$385 and \$435, respectively.

For more information on optional tours and events call one of the organizations directly.

The 1991 **Mid-America Horticultural Trade Show** is sure to have an abundance of the latest equipment and supplies for landscape contractors. Exhibit space for the 1991 show is being requested at a record pace.

Of the 377 firms that exhibited at the 1990 show, 219 — close to 60 percent — have already committed for space at the 1991 show. In addition, more than 25 percent are requesting an increased size for their exhibit space. Nineteen new firms have applied for booth space.

Mid-Am '91 will be held Jan. 17-19 at the Hyatt Regency Chicago.

The show is sponsored by the Illinois Nurserymen's Association, the Illinois Landscape Contractors Association and the Wisconsin Landscape Federation and endorsed by the Indiana Association of Nurserymen and the Iowa Nurserymen's Association.

Another state chapter has been added to the ranks of the Professional Lawn Care Association of America — **The Grounds Management Association of Wisconsin**.

The already existing group expanded its board of directors from seven to 12 members and selected new directors from different parts of the state for a complete representation of the state's lawn maintenance industry.

The changes were made to strengthen the association's position in the state.

The group also revised its goals. Among other things, they will now include: promoting professional development for the green industry in Wisconsin and advancing ethical practices within the industry, monitoring and reporting on legislative affairs.

Alan Cimberg, a skilled teacher of instructors for the Dale Carnegie courses, will be the keynote speaker for the joint **Associated Landscape Contractors of America/Professional Grounds Management Society Conference** Nov. 11-14 at the Hyatt Regency, Nashville, Tenn.

Cimberg is a top salesman with an enviable record for closing difficult sales. He is a sales trainer and convention speaker for many of the Fortune 500 companies.

The conference is being held in conjunction with the Green Industry Expo. The two groups are joining forces with the Professional Lawn Care Association of America in sponsoring the Expo. ■



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ALL COMPANIES ARE LOOKING for ways to reduce their energy bills. Many have invested in space-age, energy efficient construction material. Others have purchased sophisticated energy saving devices.

The changes in the seasons can play havoc with a company's energy expenses. In the summer, the sun beats through the windows of most structures. In the winter, the sun sets low on the horizon and doesn't do much to increase the temperature.

But there is a place where the temperature is the same year-round. It's underground where the climate is always between 50 and 55 degrees.

Many companies are making use of this constant temperature by building berms around their buildings. A berm is a man-made hill of earth topped with growing plants. They are an interesting way to insulate the foundation of a building from

the harsh weather elements.

Berms are best used with properties that have their foundations partially above ground. Just place rigid board insulation against the outside of the building where the foundation is exposed. Then place soil against it to produce a slope away from the property.

Be certain that the angle of the slope is not more than 45 degrees. Plants or shrubs will have a hard time growing on a berm that is too steep.

THE POWER PLANT. What kind of foliation should you plant? One of the best choices for planting on a berm is a vine.

Vines can do more than just cling. If you plant deciduous vines on the outside wall, they will protect the property from wind and sun. If you plant the vines on the south side of the structure, they will absorb and reflect the sun's rays in the

summer months. And during the winter, they will shed their leaves and allow sunlight to warm the walls.

Good choices for vine include wisteria, bittersweet and Boston ivy. Stay away from English ivy, however, because it doesn't lose its leaves. As a result, it will block the winter sun.

But evergreen vines can help to insulate walls. This plant can curb winter winds from the North and provide shade on a summer afternoon if they are planted on the northern and western sides of the structure.

For limited space, consider using a trellis. Vines planted in such a way help control climate without using much space.

Finally, different types of trees and vines grow best in different types of soil. Have the soil tested for its pH value and then decide what will grow best. —*Bureau of Business Practice.*



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INSECTS

EARLY INSECT ACTIVITY MAY SIGNAL HEAVY SUMMER POPULATIONS



White grub.

IT'S GOING TO be an interesting year for insects. Depending on where you live and the kind of winter weather you had, you may have noticed early

sightings of tent caterpillars, grubs and mole crickets among others.

Various areas of the East and Midwest saw early, but limited signs of insect activity. The South was said to be anywhere from four to eight weeks ahead of schedule and forest tent caterpillars appeared three weeks early in the Southwest.

Insect activity generally follows plant phenology patterns. And since the dogwoods bloomed early in Kentucky, Dan Potter, an entomologist at the University of Kentucky, said insects followed.

"Flowering is generally a good indicator of bug phenology," he said.

The cold December blast isn't the only factor contributing to pest populations. Last year's mild and moist summer favored the survival of grubs and other insects.

Grubs were up early in Lexington, but not necessarily active, Potter said. Masked chafers appeared close to the surface, but were said to be groggy.

Many areas across the country had large insect populations going into the winter. With low winter mortality and good spring conditions, it was expected that populations would be in good shape.

A mild spring with favorable turfgrass growth will help mask bug injury, Potter said.

The South may have been the hardest hit. Although it's not unusual to see mole activity all winter, it's uncommon to see pre-flight tunneling before spring.

"Pre-flight tunneling started back in February, however, mole cricket flights are on time," said Patricia Cobb, an entomologist with Auburn University.

The most important thing to consider now is the monitoring of the population on a regular basis. Know what life stages insects are in and when they occur. Monitoring is necessary to observe the first hatch and determine subsequent treatments.

Some products are best used within six weeks of first hatch, while others are more effective eight to 12 weeks later.

"We try to look at it from the standpoint, that if you're going to use a particular insecticide, key it into the life stage of the insect," Cobb said.

Spring mole cricket spraying is optional, but doesn't substitute for later treatment. Early treatments can reduce tunneling, according to Cobb. ■

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Landscape Merger Unfolds Challenges at Reinhold & Vidosh

SHE GAVE HERSELF A year in the landscape industry. Melanie Reinhold Sawka graduated with a degree in ornamental horticulture from Michigan State University, but still only gave herself a year with Reinhold Landscape, the family business.

"The first year I had reservations, but I decided to keep an open mind because I committed myself to one year," Sawka said.

The attraction was instant. Her one-year deadline flew out the window just as quickly as her success in the business grew. Sawka knew what she found and hasn't looked back since.

Her love for the industry generates infectious enthusiasm throughout the company. Apparently it's paid off, as she attributes her success to the people with which she has surrounded herself.

Add a vital economy, three branch offices, a company rich in tradition and more recently, the landscape industry's largest merger and the result has been practically non-stop prosperity.

"What's contributed to my success is building a team of aggressive, bright individuals with a mutual sharing of ambitions," Sawka said. "The entrepreneurial spirit and the people have definitely been a big part of it."

"We've grown by evolution, not really by a written mission statement," Sawka said. "I've surrounded myself with a bright, dynamic young management team."

The 65-year-old company was already larger than Sawka ever imagined when it took its biggest leap to date: A merger with Vidosh Inc., a 40-year-old firm with the internal services to take a project from start to finish.

The merger results in Reinhold & Vidosh Landscape Services, the largest full-scale professional landscape service and supplier in Michigan. The new firm, a union of Reinhold Landscape, Flat Rock, Mich., and Vidosh Inc., Pontiac, Mich., will employ 550 seasonal employees — 450 in Michigan.

The business will be headquartered in Pontiac, but retain Flat Rock as a field office. Regional offices are located in Memphis and Nashville, Tenn., and Orlando, Fla.

If not the largest, Reinhold & Vidosh is said to be among the top 10 landscape companies in the country. Before the merger, Reinhold's sales totaled more than \$10 million, with Vidosh reporting at least twice as much in sales.

Sawka is president of the new landscape giant, while Donn Vidosh is chairman of the board. Both share equal ownership in the new business which combines a century of experience.

FAVORABLE MERGER. Reinhold was actually a customer of Vidosh — a prominent rewholesale supplier of nursery materials, bulk mulch and topsoil, as well as a company specializing in the construction of recreational complexes. Together, Reinhold & Vidosh can now buy materials at more competitive prices.

"That's how our conversation started," she said. "We saw a lot of synergies that would result from the merger. We competed head to head in the commercial landscape construction business, but we complemented one another in other areas."

A plus for Vidosh was the desire to grow in the South; Reinhold is already there with offices in Tennessee and Florida.

Vidosh was heavily involved in the landscape supply business, while Reinhold was well known for its commercial landscape maintenance services. Vidosh brought to the merger more site work capabilities and a specialization in sports complexes.

Four business entities exist within Vidosh: construction operations, Green Acres Turf Farms, three rewholesale outlet locations, and landscape management. Vidosh is its own primary source of landscape materials.

Landscape, sod and nursery supplies are partially grown by Reinhold & Vidosh and partly shipped from all over the country. Materials not supplying company projects are sold to customers within the industry.

Reinhold & Vidosh hand selects all plant materials for its properties and projects.

Because both companies supply plant materials to contractors maintaining residential properties, they haven't approached that market.

"We don't want to compete head

REINHOLD & VIDOSH LANDSCAPE SERVICES

Headquarters: Pontiac, Mich.

Branch Offices: Memphis and Nashville, Tenn.; Orlando, Fla.; and several satellite offices in Michigan.

Founded: 1989 with merger between Reinhold Landscape and Vidosh Inc.

Owners: Melanie Reinhold Sawka and Donn Vidosh.

Primary Services: Full-scale professional landscape installation and maintenance and rewholesale supplier, targeting commercial properties and sports complex development.

Employees: 550 seasonal employees.

1989 Sales: Combined sales not released.



Evaluating site plans at the Swan & Dolphin Hotel, Walt Disney World.



Ralston Purina, St. Louis, Mo.

to head with them," Sawka said. "It's not our intention to capture the entire landscape market in Detroit."

Both companies enjoy substantial success having completed well-known projects: Reinhold with Federal Express, Memphis, Tenn.; Ralston Purina, St. Louis, Mo., and more recently with the Swan and Dolphin Hotel at Walt Disney World, Orlando, Fla. Vidosh completing an Honor's Golf Course at Oak Pointe, Brighton, Mich., Liberty Park Softball Complex, Sterling Heights, Mich., and the Standard Federal Financial Center, Troy, Mich.

Recent project awards include a regional office headquarters and a local office building.

With the merger just shy of six months old, the winter months have been spent unraveling the trials of bringing two corporate cultures together. "We're going to have more resources to draw on," Sawka said. "We'll take our assets and move them as they are needed."

Although the mix may change, she doesn't expect the company's service ratio — construction 55 percent, maintenance 30 percent and wholesale 15 percent — to change significantly.

Employees were generally enthused with the merger, and little attrition and relocation resulted, she said.

ORIGINS. Reinhold Landscape was started in 1924 by William Reinhold, a German immigrant who came to the United States following an apprenticeship in landscape gardening.

Reinhold took on a minority stockholder in 1954 — C. William Hardesty — and incorporated the business in 1968. After Reinhold's death in 1970, Hardesty assumed the role of president until 1983, when Sawka was promoted to president and CEO.

Sawka came to Reinhold in 1977. She found a niche in the company's maintenance division, which then consisted of only five people. With virtually limitless growth possibilities, Sawka spent the next five years developing the division which she felt was necessary to offset the economy controlled construction division.

In 1977, sales were generated almost exclusively through the firm's construction business. Reinhold reported less than \$1 million in sales that year, employing fewer than 25. Twelve years later, the firm reported more than \$10 million in sales and employed more than several hundred during peak season.

In 1982, after cultivating the maintenance division, Sawka decided to refocus and promote the company's national image for large, prestige landscape projects — similar to the direction her



father had led the company in the 1960s.

"We decided the company needed to take a different position because of the recession," she said. "We originally focused East of the Mississippi and North of the Mason Dixon. As you can see, we only hit one of those goals."

The following year, 1983, was a banner year for Reinhold. Sawka became president and through an invitation bid process, the company was awarded the contract for the 230-acre Federal Express Campus in Memphis, Tenn. On a sad note, Sawka's mother — the company's majority stockholder — died that year.

After finishing the Federal Express project, Reinhold decided it was time to open a permanent branch office in Memphis. Drew St. John was recruited to run the office and the branch quickly

Reinhold's maintenance division grew rapidly between 1977 and 1983. Today, the company takes pride in its ability to provide long-term maintenance.

grew from a job site trailer into a large part of the company's business.

St. John is now vice president of all Southern operations for the company.

From 1985-90, the Memphis division grew rapidly. "It's been profitable since the day it opened its doors," Sawka said. "I'm very proud of it."

Movement into Nashville originated with one project — the Whitworth Development — but the company decided early on to give Reinhold a permanent presence in the city.

"We never target the city, but the project," Sawka said. "It allows us to get our feet wet, test market the area and then see if we want to stay."

1989 was another auspicious year for Reinhold. The Nashville office opened and the company

was awarded the landscape contract for the Swan and Dolphin Hotel in Walt Disney World, both coming just before Reinhold merged with Vidosh.

Gary Outlaw, a four-year veteran of Reinhold, is operations manager in Orlando.

Coinciding with the company's growth in Tennessee, the metropolitan Detroit area experienced its own growth phase.

"The last three to four years has been good for commercial/industrial construction," Sawka said. "Although it's starting to soften, we haven't seen a significant drop yet."

A second office in the metro Detroit area was established in 1988 to more effectively serve the northern suburbs.

With out-of-state expansion leading the way, the 1980s was an accelerated growth period for Reinhold with sales expanding by more than 100 percent in three consecutive years. Conservatively speaking, Reinhold maintained at least 20 percent growth in the late 1980s.

Sawka downplays the fact that she's leading a major landscape company in a male-dominated field.

"Being a woman may have opened a few doors, but I'm able to negotiate with banks and developers based on financial capabilities and the merits of our organization," she said.

LANDMARK QUALITY. The quality of Reinhold's plant materials, installation and maintenance is the foundation of the company's success and has become a theme in Reinhold's marketing efforts.

"The quality of our plant material and installation as well as the subsequent maintenance establishes a property as being one of signature above the rest," Sawka said. "You think of a landmark as something that you remember, and you remember it usually for a good reason. We want our properties and projects to be remembered for their quality."

In addition to plant quality, the use of seasoned, experienced and degreed employees contributes to the company's success.

Despite Reinhold's reputation, the company isn't willing to rest on its laurels.

Sawka said she has been focusing a lot of attention on the mar-



Lawn maintenance crews, a foreman and two seasonal workers, perform weekly services such as mowing, bed work, weed control and small pruning jobs.

keting of Reinhold's services; promoting the firm's capabilities and willingness to expand geographically. She takes a personal interest and involvement in the company's clients.

To stay on top of things, Sawka visits the Tennessee branches once a month and the Florida branch every three weeks.

"I never want to lose sight of my beginnings," she said.

The company prides itself on caring for a landscape long after the installation, having maintained some properties for more than 15 years. Exceptions occur only when it becomes unfeasible to manage a distant property.

The Ralston Purina site in St. Louis, Mo., was maintained for two years after installation, when the company decided it wasn't making a lot of economic sense to manage one project 100 miles away.

SUMMER MAINTENANCE. With the merger taking first priority, no major changes are in store this year. Still refining their system, maintenance and construction crews from Reinhold and Vidosh will mix and match routines—combining the best of both, according to Rick Hearn, vice president, administration and sales maintenance.

On the construction side, Bill Cannon from Reinhold will be vice president, sales administration and Bud Delamielleure from Vidosh will be vice president, operations.

Hearn's job is to handle estimating, policy, training and safe-

ty responsibilities. His Vidosh counterpart, Pete Scholz, vice president, operations, will mobilize resources to get the job done.

Reflecting on the merger, Hearn said, the companies will capitalize on each others' strengths: Reinhold through its administrative work including a strong computer software program for estimating and bidding; Vidosh through its strong operations and scheduling.

"We'll take the best of both or do something new. We're constantly re-evaluating," he said.

A budget for the division is typically set before the year starts. The previous year's budget and the amount of growth the company wants to acquire come into play, according to Hearn. In addition, equipment, labor, small tools and insurance needs must be considered.

If the company exceeds the sales budget, it then makes the decision to stop selling or to start buying more equipment.

"If we want to grow 20 percent, we attach a dollar value to that figure," Hearn said. "We usually know how much a three-person crew can do and what the equipment costs are."

Although it varies widely, Hearn said, one crew can handle two to three properties, averaging 10 to 15 acres a day. Six-man crews, handling larger acreage, do one job a day while smaller crews may do 25 bank properties a week.

The maintenance division handles crews through three departments: Lawn maintenance,

performing weekly services such as mowing, bed work and weed control; horticultural services including all chemical applications, pesticide/fertilization of turf and ornamentals; and specialized services, replacements or upgrades to existing landscapes and large pruning jobs.

A standard lawn maintenance crew includes three people, a foreman and two seasonal workers. As maintenance sites increase in scope, crews run as large as six men; more if it's required by the job.

Jobs large enough for full-time crews can continue working year-round performing snow removal and other tasks.

CREW EQUIPMENT. A typical mowing crew includes a one-ton stake truck or 3/4-ton pickup truck with an 18-foot trailer, one 70- to 80-inch mower, one to two 32- to 56-inch walk-behinds, one to two 21-inch push-type mowers, a backpack blower, edger, weed eater and miscellaneous tools.

There's nothing typical about the size of property maintained by Reinhold & Vidosh. On the small side, the company maintains properties about 20,000 square feet like a bank branch, but generally only takes on such projects if the contract includes a string of branches. On a larger scale, crews tackle 120 to 150-acre properties like General Motors and Mazda.

Midsized properties, like apartments and condominiums are also maintained by Reinhold & Vidosh. These generally range from 10 to 15 acres.

Reinhold & Vidosh owns the majority of its equipment and leases only to meet high seasonal demands. The company buys only American made equipment.

"We only shy away from unirrigated properties and contracts which aren't all inclusive," Hearn said. "If we can't control all areas, we can't control the project's quality."

Average pay for Reinhold & Vidosh crew members starts at \$5 an hour. With advancement, it can increase to \$6.50. When an employee reaches the \$6.50 range, however, he's generally considered a candidate for a foreman trainee position, second in line to the foreman. The pay range here is \$6.50 to \$8 an hour.

(continued on page 82)



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Composting: A Viable Option for Swelling Landfills?

MOST PEOPLE PROBABLY remember seeing evening news reports several years ago about the "garbage barge" that couldn't find a place to dump its unwanted cargo.

As existing landfills reach their saturation point and governments are mandating waste cutbacks, grass clippings and other yard wastes are beginning to receive the same cold shoulder from traditional dumping sites in many states.

According to a recent study conducted by Lawn Boy, all but two states — Alaska and New Mexico — have set in motion major attempts to reduce the amount of yard wastes entering landfills.

Thirteen states have passed specific recycling laws all of which somehow address yard wastes. Others, while not passing legislation, have set specific goals on reducing the amount of yard waste entering their waste streams, said Carla Minsky, who headed the Lawn Boy study.

While the predominant issue of the 1990s will be recycling in general, Minsky said, she has been surprised at what she termed a slow acceptance rate among professional lawn maintenance operators.

"I was surprised when I met several operators and they weren't aware of the laws that have been passed in their own states," she said.

"There's usually a period of a year or two before the law goes into effect, but I thought they'd be aware of it, and preparing to find alternatives to dumping."

Most obvious among those alternatives is composting. Composting isn't a new state of

the art process. It's one that has been around as long as plant life. But incorporating it into our normal thought processes as an alternative to dumping horticultural wastes is an idea not readily accepted.

SLOW TO CATCH ON. While grass clippings will be completely banned in many landfills within the next several years, it seems most operators are putting off the search for alternatives until they are absolutely mandated to do so by law.

"This issue is only a problem right now, and we as Americans don't deal with problems until they become crises," said Robert Gillespie, DK Recycling Systems Inc., Lake Bluff, Ill.

While working for a landscape architecture and construction firm, Gillespie began searching several years ago for an alternative to dumping horticultural wastes. The costs for dumping had become exorbitant, and he thought there must be both a better and cheaper method of disposal.

His solution was to visit several European countries that have been dealing with the issue for at least 10 years.

After a handful of visits to all the major West German and Swiss composting sites, Gillespie decided on an equipment system that best fit the needs of the company.

Original intentions called for the composting of only the firm's wastes. But that soon changed as he took on a contract with the city of Lake Forest to compost all of its curb side collected yard waste.

DK's advanced system is the only one of its kind in use in the United States. The custom-manufactured equipment consists of a shredding machine and a 48-cubic-yard-capacity revolving drum.

The prerotting process occurs



inside the drum. Decomposition is accelerated by re-oxygenation, which is achieved by periodic drum revolutions similar to, but much faster than, windrow turning.

But a composting plan need not be so elaborate. Bert Brace, a former composting equipment sales representative, said all a small-to-medium-sized landscape maintenance firm needs are the proper permits and enough land to begin composting.

Once that's been achieved, he said, you start a pile and occasionally introduce air by turning the pile. While there are elaborate windrow turning machines and other composting equipment, the pile turning can easily be accom-

"I was surprised when I met several operators and they weren't aware of the laws that have been passed in their own state."



In-vessel systems offer protection from weather and odor containment (left). Biodegradable cornstarch plastics are designed to decompose mainly through microbial action (below).



An in-vessel composting machine used by large firms to produce quality compost at a fast rate (center). The "squeeze" test is an easy way to gauge the moisture content of the compost (above).

plished with a front-end loader, Brace said.

The basic process of composting, whether done by the traditional static process or sped up by the equipment-heavy, in-vessel systems, is the same.

The in-vessel systems are used by large compost operations such as DK's and some municipal composting programs. These systems produce a high quality composte at a markedly faster rate. But they also require a large capital investment.

Gillespie said the large composting machinery is really best for landlocked communities that want to handle their disposal internally. Several operators splitting the cost can also benefit.

But for most landscaping firms, the machinery would not be cost effective. Traditional static composting is best for those firms.

THE BASICS. The microorganisms that decompose organic matter have several requirements: balanced nutrients, proper moisture, adequate oxygen and proper temperatures.

These microorganisms need carbon and nitrogen for energy and growth. Woody materials such as leaves and brush have high carbon content and grass clippings have high nitrogen levels. A combination of the two is best.

Excess carbon can slow down the decomposition process, and too much nitrogen will lead to foul

odors. For this reason, grass clippings should never be composted alone.

Next, microorganisms need water to flourish. Moisture content of a compost pile should be about 45 percent to 50 percent by weight. Inadequate levels of water will cause the organisms to stop working. Too much water will cause the pile to become waterlogged. When that happens, air no longer can enter and many beneficial organisms die.

Turning the piles regularly accomplishes two things: proper oxygen levels and proper temperature in the pile's core. Piles that are too dense usually have oxygen shortages in the center.

A compost pile will generate

PLAN NOW FOR FUTURE REGULATION OF CLIPPINGS DISPOSAL

THERE'S NO AVOIDING THE INEVITABLE BAN OF grass clippings in landfills. If you're in a state that hasn't already passed a law, that doesn't mean you and your crew can relax and breathe a sigh of relief.

The simple fact is this: If you cut grass for a living, within the next several years you will be forced by law to change your system of clippings disposal.

Not bagging clippings at all and leaving them on the lawns is one viable alternative. It, however, depends on the customers' willingness to try something new.

Several manufacturers are now selling shredder mowers that cut finer clippings which are not as noticeable on lawns. One thing to be aware of before starting this practice is the likely need to be out cutting properties more often. Most of the shredder mowers on the market cut at about a 1/2-inch height. An increased mowing frequency may mean you'll need to

raise prices.

While most of the recycling efforts have targeted homeowners — it's estimated that as much as 50 percent of summertime curb side trash pickups are grass clippings and leaves — those cutting grass professionally create infinitely more clippings to dispose of than the average homeowner.

They need to be aware of the alternatives to dumping grass at landfills.

Currently 13 states have passed legislation that is either already in effect or will become effective in the next year or so. They are: Connecticut, Florida, Illinois, Iowa, Massachusetts, Michigan, Minnesota, New Jersey, North Carolina, Ohio, Pennsylvania, Washington and Wisconsin.

If you operate in one of these states and are not aware of the laws concerning grass clipping disposal at landfills, contact your local county extension agent.

heat on its own, but it needs to be checked periodically. The ideal temperature is 90 to 140 degrees Fahrenheit. If the temperature goes higher, decomposition will cease and many of the organisms will die.

MAKING THE TIME. While starting a composting operation can range from quite costly to rather inexpensive, one aspect that is definitely needed — and may be on short supply for smaller operators — is time. While managing a pile is not a full-time job, it does require some attention.

If you decide you don't have the time, money or space to start a composting effort, some composting operations are starting up and, likewise, landfills are beginning to set aside land for composting operations.

One such compost operator is Green Glen Ltd., Pittsboro, N.C., owned by Tom Glendinning. His background is in landscape maintenance and he decided to start a composting operation 16 years ago.

It's plausible for an operator to start composting, but he questions how many really have the time or manpower to take on the additional tasks.

"Most maintenance crews are so busy and overworked continually running day, night and weekend," he said. "If they were to add one more thing it would be too much."

The alternative is finding someone else who'll do the composting for you.

"One reason I think guys balk at composting is because they

don't know how to start or say they don't have the time, which I think are acceptable reasons," Glendinning said. "But it's not all that difficult to find someone who does compost and take your waste there."

About the only problem you may encounter in taking wastes to a composting site rather than a dump is additional travel time, he said.

BENEFITS. Before composting catches on with the landscape maintenance industry, Glendinning said, operators have to become convinced of the benefits and use of the end product.

"Right now, I don't think people are seeing the whole picture," he said. "It seems they're looking at composting as only a waste management solution. Once operators realize they can use the composted materials in their business, I think there will be an increased interest in wanting to compost their waste."

The benefits of using com-

posted material on landscapes can be placed in three categories:

- Economical.** A one-time application can replace the need to fertilize two to four times per year. It reduces the need for irrigation because compost can hold six times its weight in water. These, of course, reduce maintenance and labor costs.

- Improved plant/turf quality.** The use of compost reduces transplant shock and decreases plant stress response to drought, disease and insects. It also reduces salt damage and provides nutritional balance.

- Improved soil structure.** It reduces the compaction of soil and increases both the topsoil depth and soil fertility while rebuilding worn out soil.

IDEAL USES. Composted material can be used in several landscape applications.

- For a one-time upgrade of turf, a 30- to 40-cubic-yard per acre application can be made in the fall and winter for wintertype

grasses and in the spring for summer grasses.

- For continuing maintenance of turf, a 15- to 20-cubic-yard per acre application can be made on the same schedule as above.

- For soil preparation in planting beds, 1 to 3 cubic yards per 1,000 square feet is recommended. Difficult soils will require the higher amount.

- For tree and large shrub backfill, about 20 percent to 30 percent compost by volume of soil is best.

Once operators begin using compost regularly in their landscapes, they'll see the possibility for saving money. Glendinning still does some maintenance work and he uses compost regularly.

His typical fall treatment of a lawn is an application of compost, overseeding and an aeration. He then only needs to spray one or two times the following year rather than the typical six times.

Another key factor in the acceptance of compost in both design/build and maintenance work, according to Glendinning, will be how composting fares in university research. He is confident such research will verify its value, and significantly raise interest and acceptance for the material.

Following the laws of supply and demand, once more compost is being produced, prices will fall, Glendinning said. That's when compost will begin competing with lower rated fertilizers such as 8-8-8 and 10-10-10.

"I think there's the possibility for compost prices to fall dras-

(continued on page 29)



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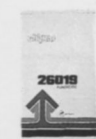
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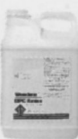
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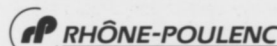
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Composting

(continued from page 24)

tically," he said. "Once that happens, then we'll see some real significant changes. I think there's a chance that compost will be displacing fertilizers in horticultural uses."

He conceded that is probably years away, but is still convinced it will happen eventually.

Whether you have to pay a compost operator to take your waste really depends on the operator. Some compost sites charge for the privilege of dumping there and others don't, according to Tom Richard, an agricultural engineer in the agricultural and biological engineering department at Cornell University, Ithaca, N.Y.

But those that charge are significantly lower than the tipping charges at landfills.

HOW TO START. If you want to forego the landfills and compost operators to start your own composting site, you need to obtain the proper permits from your local government. The requirements



Composting is sure to become a major aspect of lawn maintenance.

for getting such a permit vary quite a bit.

Most basic to receiving one is having enough land, which usually is about an acre for the composting site and whether you plan to use the finished compost for your own use or if you plan to sell it to others.

For small- to medium-sized operators, selling to others would most likely be out of the question because they simply do not create enough volume of waste, Glendinning said. An operator who covers 100 acres three times a month will only be able to produce enough compost to cover 10

acres.

One small operator who has turned to composting has made it a second business. Alan Hughes, owner, Hughes Organic Products Inc., Binghamton, N.Y., owns an in-vessel system and composts yard wastes from municipal garbage pick ups.

He advocates the machine system over static composting because it creates a better end product that is finer and more nutrient-rich.

While he said starting a composting operation is impractical for nearly all operators, getting their waste to a composting site

isn't that much different than taking it to a landfill.

"Composting is a major undertaking that not everyone has to get involved in," he said. "It's actually a lot like landscaping: Sure everyone is capable of taking care of their own yard, but many choose not to because it's time-consuming. The same can be said of landscapers and composting. But just because they don't want to do it, doesn't mean they shouldn't find an operation like ours. It doesn't take that much more of an effort than dumping at a landfill."

Composting is sure to become a major aspect of lawn and landscape maintenance in the coming decade. Learning about it now will make the transition easier when you are eventually required by law to quit dumping grass clippings. Also, using compost in applications can save you money. Could there be a better incentive than that? — David Westrick ■

The author is Assistant Editor of Lawn and Landscape Maintenance magazine.



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Follow Up Training Increases Task Retention

Editor's Note: This article is the third of a three-part series on training. This month, the importance of follow up training using feedback, performance incentives and reinforcement, is emphasized.

A TRAP MANY PEOPLE get caught in, including trainer, trainee and management, is the one believing "He's been to training class, now he knows what he's doing." This may or may not be the case.

Training class, in most cases, provides the basics for performing a task. There's generally a time frame built into the program for practice, however, there's not always enough opportunity to ensure the task is mastered completely. Follow up and practice add to a successful training process.

.....

It's said that 50 percent of new information is lost immediately and 70 percent the first day.

Training follow up can provide many things:

- Program evaluation.
- Problem recognition.
- Retraining/reinforcement.
- Performance measurement.

Program evaluation is essential to ensure that the appropriate information is presented. Does the information presented solve the problem or fill the need? Is it current?

In many businesses, information, technology and vocabulary relating to that industry change frequently, and it is imperative to change the training program accordingly. Keep it current.

Individual businesses within the same industry have differing terms for the same function or procedure. Recognize that and relate it your business if employees are exposed to competition and/or taking advantage of outside training.

A part of the program evaluation must contain an evaluation of the trainer. Was he/she effective?

If all the information seems current and well organized, but the message was incorrectly interpreted or not received, look to the presenter or the environment in which the training session was conducted.

Find the source of the problem and correct it before offering another training session.

EVALUATION. Feedback is very important in evaluating any course. It can be done in a number of ways. Each trainee can be polled verbally or in written form using a predetermined set of questions. These questions must be developed so as to provide constructive information for improving the training program.

Constructive questions could be as follows:

- If there was one section of the course that could be changed, what would it be and how would you change it?
- What was the most important part of the course to you and why?
- Do you feel as though you need further information? Which topic?

Do not ask questions like:

- Did you enjoy the class?
- Would you come back and/or bring others?
- What do you think about the class?

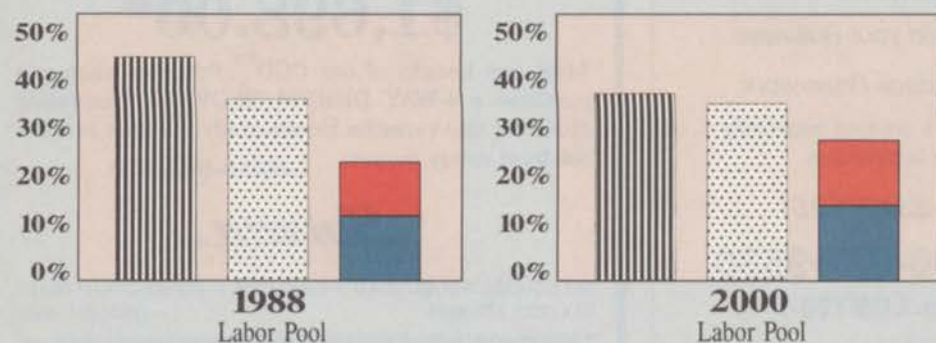
All questions of this type generate either "yes" or "no" answers or are too vague to get useful information. Feedback can also be provided in a more formal way through testing.

Testing can take the form of either a written exam or a practicum where the individual performs the task. Whatever form is used, relate the findings back to the training program and make adjustments as necessary.

Training follow up can help

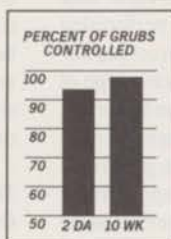
(continued on page 32)

From now until the end of the century, 88% of work-force growth will come from women, blacks and people of Hispanic or Asian origin, including immigrants. White men, meanwhile, account for most retirees and are leaving the work force in record numbers.



Source: Bureau of Labor Statistics, Office of Employment Projections.

When it comes to grubs, it's not enough just to suppress them.



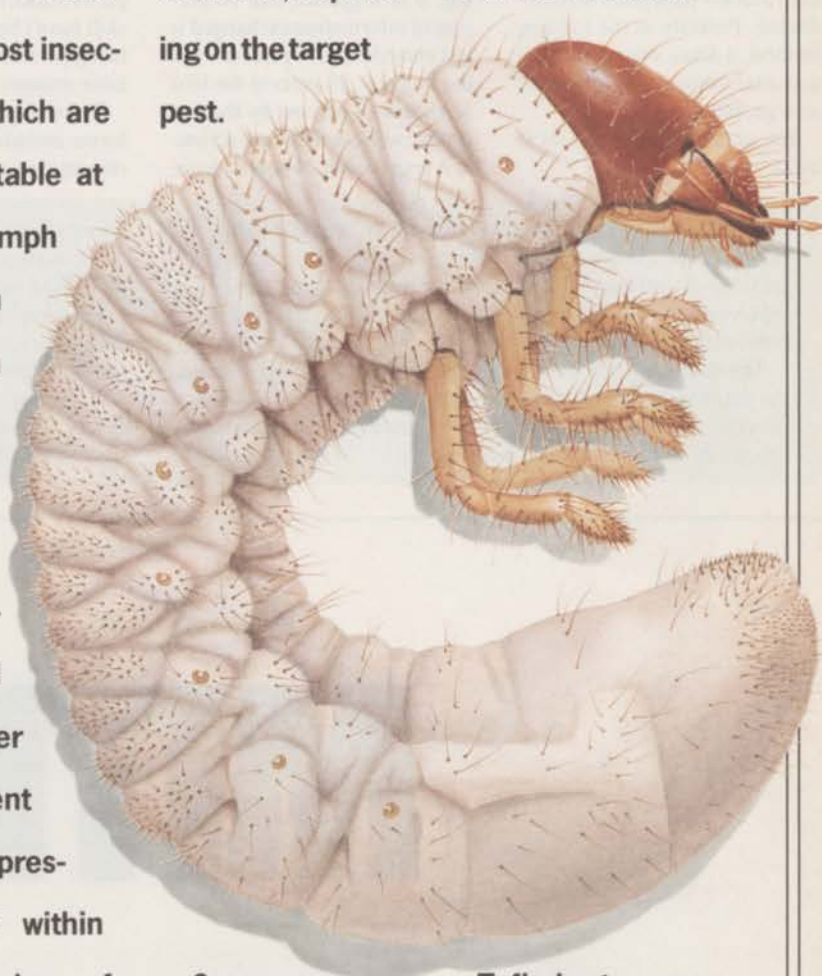
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Training

(continued from page 30)

improve performance through problem recognition. Often, a problem goes unnoticed until it is discovered through training follow up; whether or not it's related to the recent training.

It may have come about through increased knowledge provided at the training session. The problem may have existed even with formal training, but didn't surface until a follow up session was conducted. Possibly in the training process, a detail was overlooked and after training presents itself as a problem.

The scenario below can serve as an example.

The point is that problem recognition through training follow up is essential to any business interested in continued growth and success.

REINFORCEMENT. Training follow up can provide another important benefit, particularly following a problem recognition situation — reinforcement and retraining of a previously learned task.

Reinforcement is always necessary even after the best of training. It is suggested that 50 percent of information exchanged is lost immediately, 70 percent is lost the first day, 90 percent the first week and 97 percent by the end of three weeks without any review. A review after 24 hours can in-

crease retention rate from 55 percent to 85 percent. Retention rates after one week can be improved from 25 percent to 85 percent, and after one month, it can be improved from 15 percent to 85 percent.

All people need to know how they're doing when performing a task. Reinforce correct performance by showing some type of appreciation. This can be verbal, in most cases, or written. All reinforcement should be positive.

Retrain to encourage positive performance if it's determined the skill hasn't been mastered or it's being performed in an unacceptable manner.

Retraining can take several forms including formal classes, one-on-one or on-the-job.

A second formal training class may or may not solve the problem. If there is evidence that the first class was conducted poorly — i.e., poor communication process, poor instructor, not enough detail, poor examples or improper timing — then a second class may be in order. This being the case, an improvement in performance should be expected from an additional formal session.

SUPPLEMENTAL TRAINING. One-on-one training may be necessary in addition to formal training in certain cases. This can happen in a large class situation where time is limited, their learning process is slower, the class is geared toward a different level of trainee.

A DECISION HAS BEEN MADE BY MANAGEMENT

that in order to reduce the indiscriminate use of pesticides and increase the efficacy of summer weed control, hand can sprayers will be used. Everyone must be trained in the use of a hand can.

The hand cans are purchased, the materials are ordered and the training begins. A very comprehensive class is designed covering an array of topics including pesticide use, equipment operation, calibration and finally safety.

Everything is covered well by experienced staff members.

The evaluation performed indicates things went as planned, but a field follow up reveals a problem.

The technicians are carrying the hand cans in the cab of the trucks because no provision was made to secure them elsewhere. Is this a training mistake?

The answer can go either way depending on a number of factors. The solution, too, may or may not be easy depending on diversified situations.

MITE.

HOW TO
SQUASH A GRUB



they're intimidated and do not ask questions, or a number of other reasons.

In this case, a more personal type of training approach is necessary. This training may only need to address certain aspects of the formal session to accomplish the goal; however, it must be geared to the needs of the trainee. This may mean more hands-on training, a slower explanation or even a written step-by-step procedure.

Whatever procedure is deemed necessary, it's important for the trainer to be skilled at the task, be patient and be a good listener to be able to evaluate progress.

On-the-job training can be used as either a training process or a retraining process. It may or may not be used as a result of poor performance. It may be used as an evaluation tool in the training process. Nevertheless, on-the-job training correlates classroom instruction with the job site.

Many companies use on-the-job training as a portion of the employee's probationary period. It's a true measure of how well

the trainee performed in formal training assuming the instruction was correct. It also allows the trainee to practice — generally in the presence of an experienced employee — build his/her confidence and work out "rough spots."

The process can be as subtle as a suggestion or as formal as a procedural quiz. The time involved also varies depending on company policy, aptitude of the trainee, skill of the trainer and task involved. On-the-job training should be used as a bridge between training and individual performance.

Performance measurement begins during the final training phase and continues through the employee's tenure. It's a tool used to ensure acceptable performance and troubleshoot for problems in need of further attention.

Performance measurement can take the form of testing, meeting goals and/or quotas or providing a certain level of service. Measurement is essential to all involved.

Management needs to know what is going on to adjust budget, personnel procedures and

equipment needs among others. The staff needs to know in order to set realistic schedules, qualify for bonuses and ensure job security. Individuals need to know to attain a sense of accomplishment, pride and worth.

It's hard to know what you're doing if you don't know where you're going and how to get there.

Tests can be developed to ascertain that an essential amount of knowledge has been acquired to perform a certain task. The test can be written, oral or performance oriented.

Before a test is designed, know what is needed for accomplishing the task, put a value on it and decide on an average performance point. Then design the test for minimal accomplishment, average and above average accomplishment. Testing results should be used as a reflection of the training process and for any necessary adjustments.

INCENTIVES. Service goals or sales quotas are a commonly used measurement tool. These must be used in a gradual manner

through the initial performance stages, leading the trainee along a progressive path to a goal.

A new employee shouldn't be expected to accomplish the same tasks as one who has had more time on the job. If the goal is set too high, too early, performance and confidence will suffer and additional training may be required.

On the other hand, if designed properly, each achieved goal can add to the training process and give employees the confidence to become productive and valuable assets to the company.

All personnel can improve something as it relates to their performance and it is the trainer's responsibility to encourage it and recommend ways for improvement.

Training influences everything in both business and personal life. Done properly and taken seriously, it affects us positively. But done poorly, it affects us negatively. Make training a serious part of your business. — Dave Jones ■

The author is director of training for Lawn Doctor, Matawan, N.J.

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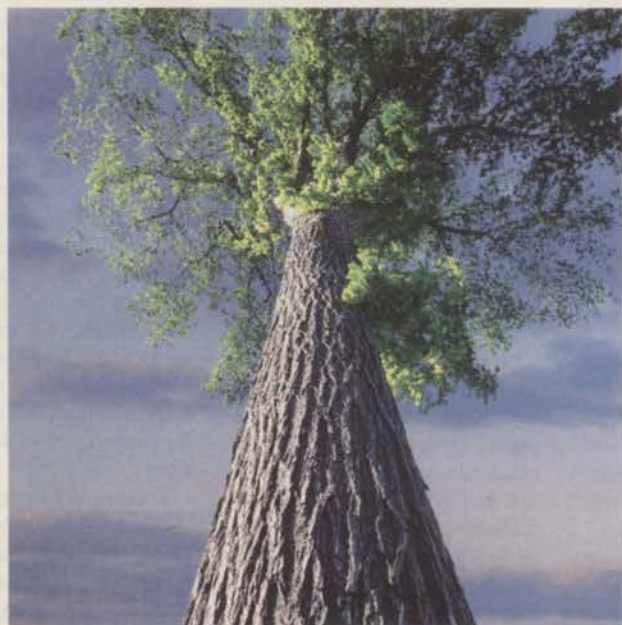
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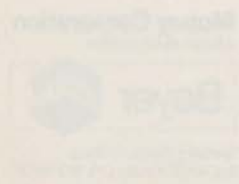


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In the battle for healthy lawns, there's only one strong enough to take on the weeds. And the weak fall to the weeds. Introducing the most powerful 2,4-D formula ever. It's a water-based liquid formula that can be applied to weeds in lawns, gardens, and other areas.



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All shapes and sizes qualify for our PAGEANT.

Nothing's worse than slimy worms crawling on your shrubs, ugly beetles munching on your pines and nasty borers blemishing your birches. That's why you need new PAGEANT® DF in your tank.

Any other insecticide has to settle for first runner-up. PAGEANT DF is the only tree and shrub insecticide that gives you the active ingredient chlorpyrifos in a dry, flowable formulation. Its long residual keeps protecting the beauty of trees and shrubs long after other insecticides have left the scene. And studies show that chlorpyrifos is gentle to both applicator and environment.

What's even more attractive is its broad spectrum of control. You can control everything from beetles to borers to worms—all with a single insecticide.

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clogged nozzles, or undissolved clumps. Your applicators can mix without dust. And without the splashing caused by liquid insecticides.

So much talent in such a beautiful package. Almost seems unfair. PAGEANT DF not only works better than the competition, it also looks better. But that cube-shaped container offers more than good looks—it's specially designed for easier handling and disposal.

Each container holds five full pounds of insecticide. At a mixing ratio of 1-2 pounds per 100 gallons of water, PAGEANT DF is ideally packaged for larger spray tanks.

Why not judge for yourself how well PAGEANT DF protects the beauty of trees and shrubs? Then send a clear message to the insecticide you're presently using: hand over the crown. To find out more, call 1-800-373-2DOW.



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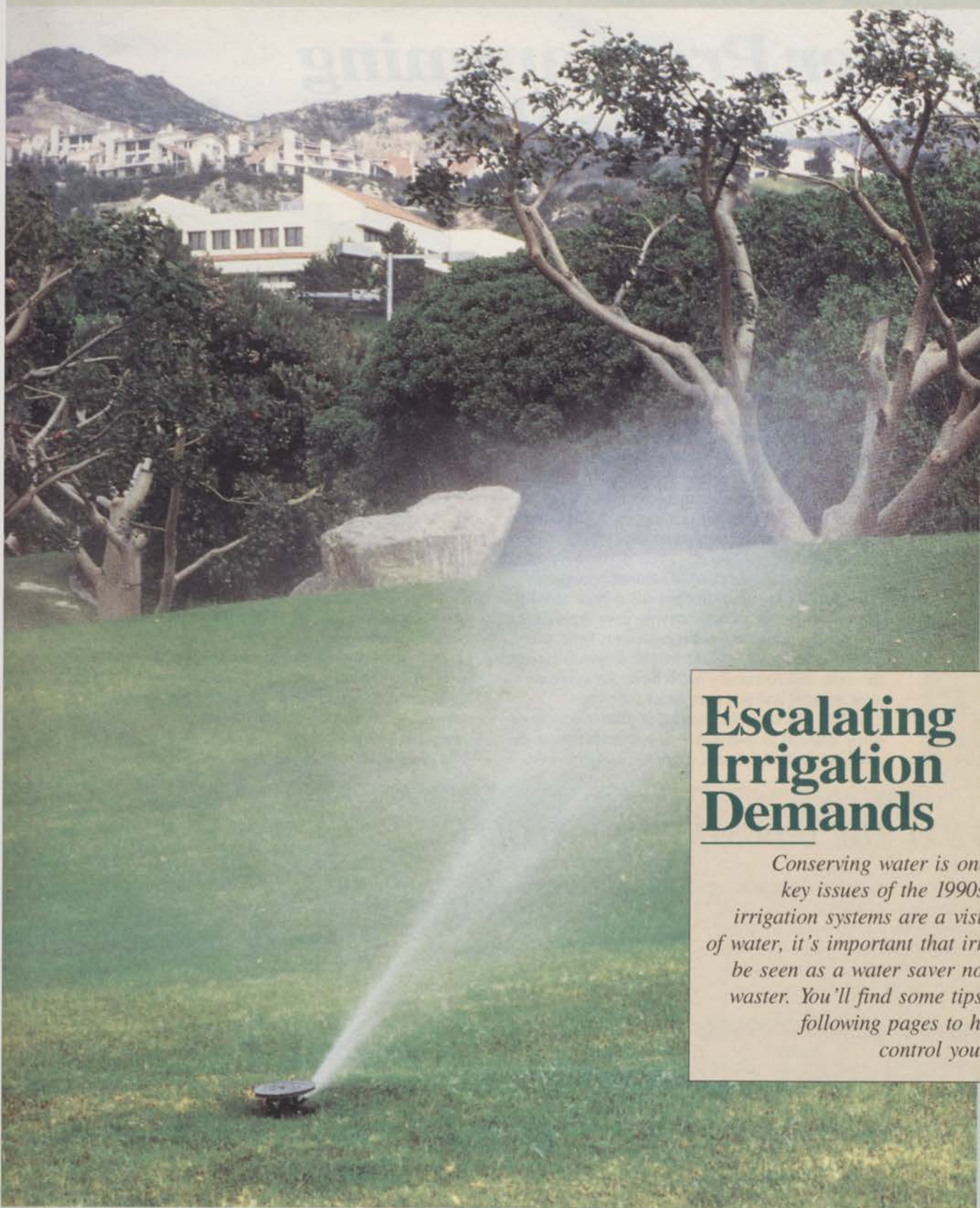
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Escalating Irrigation Demands

Conserving water is one of the key issues of the 1990s. Since irrigation systems are a visible use of water, it's important that irrigation be seen as a water saver not water waster. You'll find some tips on the following pages to help you control your costs.

**SATISFYING WATERING NEEDS
THROUGH DESIGN, CONTROLLED COSTS**

Proper Programming Yields Ample Water Savings

AS RESIDENTIAL LANDSCAPE IRRIGATION gains more and more popularity, the amount of water used by these systems is increasing dramatically.

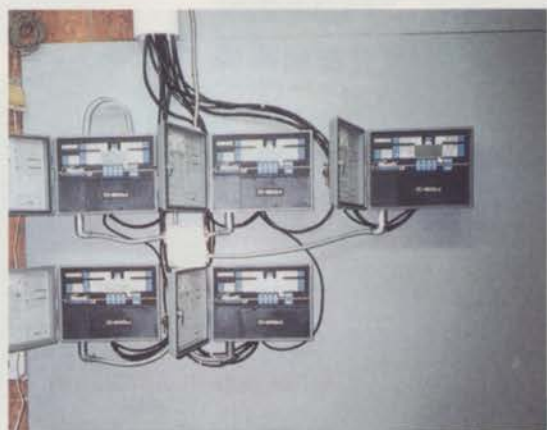
Unfortunately, landscape irrigation systems are an extremely visible use of water and therefore in times of water shortages, usually the first subject to bans. As a result, water conservation is certain to become one of the paramount issues of the 1990s.

It is therefore important that landscape irrigation be seen as conserving and not wasting water.

Most people, including those in the irrigation industry, have a tendency to over water. The time has come, however, for irrigation controllers to be programmed based on the requirements of the landscape and not by a "seat-of-the-pants" approach. Substantial water savings can be achieved through proper irrigation scheduling.

In the past, programming of automatic irrigation controllers for landscape irrigation has been accomplished in a number of ways varying from experience to however the neighbor sets his controller. Over watering of the landscape with an irrigation system is quite common, and potentially much more damaging to plant material and turf than under watering.

In tight soil conditions rotting of plant roots can be easily inflicted by over watering practices. One of the problems in the landscape irrigation industry is that



For proper irrigation scheduling controllers with dual programmability, multiple start times and water budgeting features are recommended.

installing contractors fail to give proper or detailed instructions regarding the the operation of the irrigation system, including the rate at which it applies water or how to operate the controller, to the end user.

This seems to be true whether it's a homeowner, owner's maintenance personnel or municipal maintenance crews. It is important that both the end user and the installer be well versed in the water requirements

Front photo:
Motorola

WHAT THE INDUSTRY HAS TO OFFER

The electronic Modular Controller Series from **Buckner** is designed for use in all applications including residential, commercial and industrial. These controllers incorporate the accuracy of crystal and solid state timing with a simple, func-

tional keyboard for programming.

Features and benefits include: station combinations from 4 to 51; audible programming tone for errors; variable schedule lengths from one to 32 days; four start times for each program; station run times in hours, minutes or seconds; semi-automatic starts independently by program and start time; full input and output lightning protection; dual manual functions for operating stations individually or with selectable run times sequentially; and sensing overload protection that retires, then skips stations rather than blowing fuses; and reports failure when program is completed.

Circle 136 on reader service card

Hunter Industries has introduced the new S-type Side Strip, a specially designed spray sprinkler for long, narrow landscape and turf areas. It's recommended for use on parcels that range from 4 by

28 feet up to 8 by 38 feet.

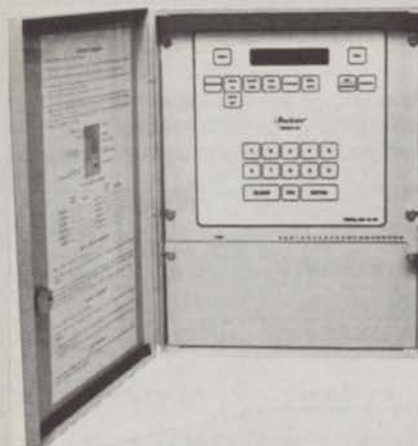
Like other S-type sprinklers, the side strip has a built-in nozzle that saves installation time. The discharge rate may be adjusted from 1.1 to 1.7 gpm. It's available as a 2- or 4-inch pop-up and has many vandal-resistant features.

Circle 137 on reader service card

The 1990 model of **King Irrigation Products'** pocket-sized valve activator adds two significant improvements: A vinyl carrying case with belt clip and an LED indicator light.

The case keeps the valve activator protected and out of the way when not in use. The LED indicator tells at a glance when the unit has full power. So, when testing solenoids, the LED will not light when the unit is attached to a bad solenoid.

The valve activator is used to test the electrical functions of valves without operating the system controller. This is beneficial when checking repairs, identi-



of the landscape, and in the precipitation rates inherent in each zone of the irrigation system.

Only when irrigation system operators know how much water is required by the landscape material and how much water is being applied by the irrigation system will they be able to intelligently program the controller so the system will be more efficient in its water use.

Determining the water requirements of the landscape can be accomplished in a number of ways. These include a thorough knowledge of plants and soil conditions, soil moisture sensors and potential evapotranspiration (PET) rates.

Soil moisture sensors, although available for many years, have only recently become cost-effective for the average landscape irrigation systems. Moisture sensors have now been perfected to the extent that they can easily, and without undue maintenance, be used in the freezing northern areas of the United States above plant hardiness zone number eight.

When programming an irrigation controller that incorporates moisture sensors, the zones should be programmed for frequent, short watering periods. The soil moisture sensors will then determine whether or not a specific irrigation zone should operate.

WATERING REQUIREMENTS. Perhaps the easiest way to determine landscape watering requirements is through an average weekly use formula. For example, a lawn area in a no rain situation in the northern United States may require 1 inch of water per week, but up to 1 1/4 inches per week in the central United States.

Planted areas for the most part require approximately 50 percent to 75 percent of the estimated turf requirements.



Over watering of the landscape wastes water and can potentially damage landscape material.

Turfgrass research is a matter of continuing interest at many universities throughout the United States and the astute contractor will want to keep abreast of the latest developments. In addition, there are many good publications relating to plant material requirements available through the ASLA Library and the American Society of Horticultural Science.

For every system that is installed, it is necessary to determine the precipitation rate of *each zone*. Precipitation rates are calculated using the formula:

$$PR = 96.3 \times \text{GPM/Sprinkler Spacing.}$$

Where: PR = average water applied per square foot of covered area in inches per hour; 96.3 is a constant;



flying wires that need splicing, even flushing lines on new systems before controller hook-up. It also eliminates the need for manual bleeds, which often flood the valve boxes.

The activator also eliminates the need for servicemen to have access to the house when the homeowner is away. It allows many tests and repairs to be performed without having to reach the controller.

The valve activator's plastic body is water resistant and its 28-inch connector wire and shielded wire-piercing alligator

clips easily reach contact points. Three 9-volt batteries supply 24 volts of energy.

Circle 138 on reader service card

The Charles Machine Works has introduced the Jet Trac fluid-assisted boring system to its line of Ditch Witch horizontal boring products. This compact, directional boring system employs a fluid-assisted mechanical boring tool to dig distances of 400 feet.

The fluid-assisted boring system is an economical alternative to conventional excavation.

The system is compact, lightweight and maneuverable. It easily fits through a standard 36-inch yard gate and can be moved into position by two workers. The rear wheels can be extended from 30- to 40-inches wide for added stability on rough terrain and slopes. The system can be set up and ready to work in as little as 15 minutes.

Controls are grouped together on a drill frame console and allow precise control of the boring tool. Ditch Witch electronic locators and transmitters are included to

provide operators accurate location, direction and depth data.

The Jet Trac fluid-assisted boring sys-



tem makes bores 2.25 inches in diameter, and can back ream an 8-inch slurried hole. Operating depth range is 36 to 180 inches.

Circle 139 on reader service card

The "Program Saver" Spike Arrestor is available from Glen-Hilton Products.

The product is designed to absorb spikes of electricity from external switches; spikes which may affect sensitive electronic controllers. This will avoid the possible erasing of programming from

GPM = gallons per minute of water discharged by the sprinklers within the area in question; and spacing = sprinkler spacing in square feet (distance from head to head times the distance from row to row).

For example, if you had a group of small pop-up, spray-type sprinklers, spraying in a 360 degree circle, each using 3.7 gallons per minute on a square spacing of 15 feet, the precipitation rate would be:

$$96.3 \times 3.7/15 \text{ feet} \times 15 \text{ feet} = 1.58 \text{ inches per hour.}$$

Or, if you had a group of medium sized rotating lawn sprinklers covering 360 degrees, each using 4.2 gallons per minute on a square spacing of 30 feet, the precipitation rate would be:

$$96.3 \times 4.2/30 \text{ feet} \times 30 \text{ feet} = 0.45 \text{ inches per hour.}$$

Note that in both cases, the GPM used is the output from one full circle sprinkler.

The precipitation rate gives the rate of water applied by the sprinklers for a specific sprinkler with nozzles at a set spacing. Notice that the small spray sprinklers have a precipitation rate that is 3½ times greater than the larger rotary sprinklers. This is a result of the much greater area (square feet) being covered with the larger heads.

Consequently, you should never operate these different types of sprinklers for the same amount of time per cycle, or pipe them together on the same zone.

SYSTEM EFFICIENCY. As with any mechanical device, an irrigation system is not 100 percent efficient. In order to adequately apply the appropriate amount of water to the landscape, you must assume an efficiency rating for the system.

The efficiency will vary widely depending upon: relative humidity, sprinkler spacing, matched precipitation, wind and time of day for watering.

This primary method of improving the efficiency of an irrigation system is to design your system so that the controller can be adequately programmed by zoning the sprinkler system into areas with similar watering requirements and sprinkler characteristics.

Areas of like plant materials should be zoned together:

plants and shrubs, turf, flowers and sun and shade areas. Make certain all of your sprinkler zones are designed for matched precipitation or even watering.

Since it is almost impossible to always keep the precipitation rate of your system at or below the infiltration rate of the soil, to prevent runoff and puddling, the use of state of the art controllers with multiple starts and dual programs is strongly advised.

Regular repair and maintenance of the system is needed to keep it operating properly. Install either a rain shut-off device or moisture sensor. Each sprinkler must be adjusted and maintained to prevent water from being thrown onto areas such as streets, driveways, sidewalks, houses and buildings.

A well-designed landscape irrigation system is usually no more than 80 percent efficient. Unfortunately, many of the systems operating today have sprinklers that are poorly spaced and nozzles that are not matched within the various zones for even watering.

Such systems may have an efficiency as low as 40 percent to 60 percent. In order to adequately determine the watering program, this efficiency must be taken into consideration.

The efficiency of the system is usually applied to the average weekly water requirement. For example, if you have a zone of sprinklers that you wish to apply a net effective amount of 1 inch per week, whose precipitation rate is 1.58 inches per hour and is determined to be operating at an 80 percent efficiency rate:

$$1 \text{ inch/week}/0.80 = 1.25 \text{ inches per week.}$$

Now that the total amount of water required per week has been determined, you can take the average weekly water requirement and determine what days and for how long the zone should be programmed. This is a function of soil conditions and plant materials.

If we have a precipitation rate of 1.58 inches per hour, an application efficiency of 80 percent and a no rain net irrigation requirement of 1 inch per week, the gross amount of water needed is 1.25 inches per week.

Dividing 1.25 inches per week by the precipitation rate of 1.58 inches per hour gives you a weekly watering time for this zone of 0.79 hours per week; and multiplying times 60 minutes per hour, 47.5 minutes per week.

switching feedback.

The small, efficient piece of equipment can alleviate a service call by a contractor when added to a compatible system. The spike arrestor will absorb this feedback from devices such as external sensors, relays and solenoids.

Circle 140 on reader service card

A new "drip system in a head" is now available from **Olson Irrigation Systems**.

The Vibra-Clean™ EH-12 emitter head contains all necessary components to provide drip irrigation outlets for up to 12 locations.

Each emitter outlet is individually pressure compensated to assure the same amount of water delivery even if elevation changes occur between outlets.

Ease of installation is a key feature.



Simply screw the head onto any 1/2-inch riser, lay out the distribution tubing to the areas to be watered, install stakes and bug caps and turn on the water.

Each EH-12 head contains 12 pressure-compensated emitter outlets, eight on/off plugs, microtubing fittings, a

microfilter and fertilizer application capability. Accessories include bug caps, stakes, distribution tubing, fertilizer pellets and an emitter access box for buried installations.

Circle 141 on reader service card

Rain Bird's new EFB-CP Series of electric, remote controlled, heavy-duty brass valves offers the performance of the EFA-CP line with the added convenience of simplified manual valve operation and servicing.

The new valves offer internal manual bleed to keep the valve box dry. A one-piece solenoid with captured plunger eliminates the loss of small parts during field service, and the valve's slip-fit elbow makes it easy to snap the CP

(continued on page 45)

This tells you that in order to meet the watering requirements of that zone, you will need to operate that zone of sprinklers a total of 47.5 minutes per week. A normal irrigation program for this zone might be to run 12 minutes four times a week or 16 minutes three times a week, etc.

The sprinkler installer or maintenance personnel should calculate the precipitation rates and required watering times for *each zone* of their sprinkler system.

OTHER CONSIDERATIONS. Additional considerations in determining irrigation scheduling are the intake rate (infiltration rate) of the soil and the allowable time to water (water window). Make certain that your total

system watering time is consistent with good practices such as watering when wind and evaporation losses are at a minimum, and that it fits into your water window.

If all these factors are taken into consideration and the correct watering times are calculated, you will go a long way toward conserving water.

Operating an efficient water saving irrigation system that adequately provides for the landscape's moisture requirements will benefit the needs of your customer and the environment. — *Brian Vinchesi and Brendan Lynch* ■

The authors are irrigation consultants with Eastern Irrigation Consultants Inc., Beltsville, Md., and Pepperell, Mass.

IRRIGATION SOURCES

If you're interested in irrigation and looking for more information, the groups and organizations listed below can offer a good starting point. They should be able to provide literature, as well as information on irrigation educational seminars and irrigation consultants in your area.

American Society of Irrigation Consultants
4 Union Square Suite C
Union City, Calif. 94587
415/471-9244

Center for Irrigation Technology
California State University at Fresno
Fresno, Calif. 93740-0018
209/294-2066

Connecticut Irrigation Contractors Association
P.O. Box 278
Windsor, Conn. 06095-0278
203/721-8555

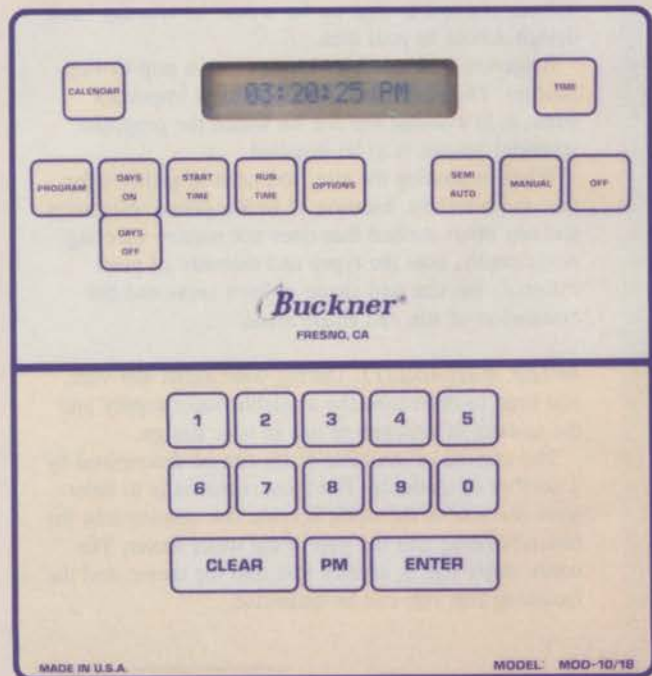
Florida Irrigation Society Inc.
808 N. John St.
Orlando, Fla. 32808
407/291-9074

Idaho Irrigation Equipment Association
P.O. Box 978
Idaho Falls, Idaho 83405
208/524-9980

Irrigation Association of New Jersey
285 Schoolhouse Rd.
Jamesburg, N.J. 08831
201/521-2333

Professional School of Irrigation
14120-H Sulleyville Circle
Chantilly, Va. 22021
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Circle 48 on reader service card

Building Maintenance Accounts Through Irrigation

I NTERESTED IN ADDING IRRIGATION TO your list of landscape services? Have a customer who wants you to add to their existing system? Tired of subcontracting irrigation work to a company who never shows up when you call or when they say they will?

Is adding irrigation looking better and better?

Although not difficult, there are important principles that must be understood before installing an irrigation system. Such considerations as water flow, pressure and how sprinklers apply water are just a few.

Following is a brief introduction to basic irrigation design. For a full understanding of the principles involved, it's best to sign up for a one- or two-day basic design school in your area.

Irrigation design can be broken into a step-by-step process. The first, and one of the most important steps, is to evaluate the site on which the proposed sprinkler system is to be installed.

When evaluating the site, you need to gather information on terrain, location of walks, patios, driveways and any other surface that does not require watering. Additionally, note the types and maturity of plant material, the size and shape of lawn areas and the orientation of sun and shade areas.

WATER AVAILABILITY. During your initial site visit, you need to determine the available water supply and the amount of pressure to use in your design.

The amount of available water can be determined by a number of methods. The most common is to determine the size of the water service line coming into the house/building and the size of the water meter. The water meter size is usually cast into the meter, and the incoming line size can be estimated.

When evaluating the site, gather information on terrain, location of walks, patios, driveways and other surfaces not requiring water.

Service lines for most homes are 3/4- or 1-inch, and may be made of galvanized steel, copper or polyethylene pipe.

Another method of obtaining the available water for your irrigation system design is to take a five-gallon bucket and place it under a silcock and time how long the bucket takes to fill.

For example, if the bucket fills in 30 seconds, you can zone your system for 10 gallons per minute — gpm. Do this at the hose bib nearest to where the service line enters the home.



Two valve manifold with a PVC mainline and polyethylene laterals.

Pressure can be determined using a pressure gauge. Use an adapter to attach it to a silcock. A 0 to 160 psi gauge is recommended. Take both the static and dynamic pressure of the property — the static pressure being the pressure when no water in the house is flowing and the dynamic pressure being the pressure with water moving, i.e., being used.

Flushing a toilet or opening another silcock easily causes the water to flow. The difference between the static and dynamic pressure in most homes will usually be 5 to 10 pounds per square inch — psi. Since a sprinkler system operates with water flowing, the dynamic pressure is the pressure you are most interested in.

SPRINKLER LOCATION. Now that you have made your visit to the property and determined the water and pressure availability, you are ready to select and locate the sprinklers to properly cover the landscape.

Select the sprinklers based on the size of the area to be covered, the amount of water used by the sprinkler and the operating pressure required by the sprinkler. For the normal residential system, small pop-up type sprinklers are usually spaced 10 to 15 feet apart while the larger rotor type sprinklers are placed 30 to 35 feet apart.

Almost all sprinkler manufacturers offer both sizes

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Ditch Witch® *Finding New Ways.*

The Charles Machine Works, Inc., P.O. Box 66,
Perry, OK 73077-0066.



Irrigation Design

(continued from page 40)

of sprinklers.

Spacing of sprinklers is one of the most important aspects of an irrigation system design. It is essential that the sprinkler radii overlap each other. The sprinklers should be spaced for "head-to-head" coverage. This means that the sprinklers should almost hit each other with water.

For example, if you have a sprinkler that has a radius throw of 30 feet, you should place the sprinklers on a 30-foot spacing in all directions. An arc of 60 feet by 90 feet with sprinklers spaced 30 feet apart, would need 12 sprinklers.

The easiest way to determine sprinkler spacing is to walk around the property and place flags wherever you determine a sprinkler is required. Then review your spacing and locations and adjust the layout if necessary.

You may have to adjust the sprinkler spacing if there is a wind condition on site. Shorten sprinkler spacing in the direction perpendicular to the prevailing wind.

When determining the sprinklers to be used, base your decision on how much pressure and flow is available, the amount of water you want to apply, whether



Pick a sprinkler appropriate for the material being watered.

the sprinklers should be stationary or pop out of the ground, how high the sprinklers need to pop up and the way in which they distribute water.

Once you have decided how many and which type of sprinklers you are going to use, you need to zone or section the irrigation system. Determine how much water each sprinkler uses and calculate the total gpm the system uses. Divide this total by the amount of available water, previously determined.

UNLESS YOU CAN AFFORD THIS RAIN SENSOR, YOU NEED MINI-CLIK.



For example, if you have eight sprinklers that use 3 gpm and 15 sprinklers that use 2 gpm, the total water use would be 54 gpm. If you previously determined that the amount of water available was 10 gpm, the sprinkler system would have to be broken up into six zones — 54 gpm/10 gpm per zone = 5.4 zones.

It would be very odd to find a house that can operate all the sprinklers at one time. It's also more economical to break the system into zones.

The zone valves can be remote or manifold. Using a valve manifold places three to six valves together at one location on the property. Remote valving distributes the individual valves along the mainline.

Water availability isn't the only parameter to be considered in zoning sprinkler systems. Areas with like plant material should be zoned together, as should areas with the same type sprinklers. Sprinklers with different water use rates and radius of throw — precipitation rates — shouldn't be zoned together.

Install all your zone valves in valve boxes set at grade with the landscape.

FRICTION LOSS. Having zoned the sprinkler system, you need to determine the size of the pipe and valves and the friction loss through the system. Friction losses are the energy losses incurred by water moving through pipes, fittings, etc., and can be determined by the use of friction loss charts specific to the pipe that you are using whether it's polyethylene or PVC.

The friction loss for the average residential system should be between 5 and 15 psi, but will depend on

Industry Offerings

(continued from page 40)

tube on and off.

The EFB-CP valves easily accept Rain Bird's PRS-B pressure regulating modules for maintaining a constant outlet pressure regardless of inlet pressure fluctuations.

Simple to install and adjust, the PRS-B modules regulate pressure to a user-preset level of 15 to 100 psi and make the valves ideal for applications where mainline pressure frequently varies.

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Circle 142 on reader service card

the type of backflow preventer, length of pipe runs and elevation changes.

Zone valves should be sized so that the maximum friction loss through the valve is less than 5 psi. Lower friction losses may be necessary in a low pressure situation. A table for the valve friction loss can be found in the valve manufacturers' catalog. You may use PVC or polyethylene piping in your system depending on where you're located and the type of equipment you install. Your system may be a combination of PVC and polyethylene pipe.

INSTALLATION. In installing the system, you may



One way to keep your sprinklers from watering in the rain is to stay out there with them.

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Other rain sensors rely on collection cups. But cups collect leaves and debris. The cost of servicing them will more than pay for Mini-Click.

What's more, the patented design is so reliable, Mini-Click is guaranteed to work. Because it's simple, from the way it's installed to the way you click in the precise settings.

For more information and the name of the distributor nearest you, just call Glen-Hilton Products at 1-800-476-0260. To find a better rain sensor, you'd have to take the job yourself.

MINI-CLICK^{II}
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Circle 55 on reader service card

trench or "pull-in" the pipe. Depending on the type of installation technique used, your design should be effected to minimize your labor costs. Make sure you install a locally approved backflow preventer.

Next you need to size the wire and locate the controller. The controller should be located in an area convenient for use. You will want to discuss its location with the owner. Mount the controller so that the display is at eye level.

Another factor in determining the location of the controller is the location of a 110-volt outlet. Try to avoid involving an electrician in the project by locating

the controller where a new 110-volt outlet will need to be run. Avoid the use of extension cords. The controller may be mounted inside or outside the house.

If the controller is to be mounted outdoors, make sure it has a weatherproof cabinet and an internal transformer. In this case, all above-ground wiring should be in conduit. Choose a controller that has the greatest amount of flexibility.

Water budgeting, dual programmability and self-diagnostic capabilities are value-added features in choosing a controller. Remember that wire sizing is most affected by length of run, system pressure and the current going through the wire.

Lastly, you need to make a materials list for the project so you can actually price the job and provide the customer with a system that is both practical from a cost standpoint and one which allows you a good profit.

There are many different ways to estimate residential irrigation — per square foot, per head, per zone, materials times a multiplier and other estimating procedures. Make sure you use an estimating procedure that you are comfortable with, and check your procedure regularly to determine that you are making enough money or not charging too much.

Installing and servicing irrigation systems will add to the bottom line of your landscape business and is an excellent way to build your maintenance and service accounts. — *Brian Vinchesi and Brendan Lynch* ■

The authors are consultants with Eastern Irrigation Consultants, with offices in Maryland and Massachusetts.

The American Society of Irrigation Consultants has completed the "minimum standards for landscape irrigation." The standards were first published in 1986. The second printing in 1987 sold out.

The three-part document — design, installation and management — is intended as a model ordinance and reference source with particular value to irrigation system designers, landscape architects, suppliers, installers, project owners and agency plan reviewers. The three-ring binder format permits updates and revisions as required.

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Alter-Rain irrigation pipe by **Irrinamic** ensures an even and uniform water dispersement under low pressure

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(continued on page 50)

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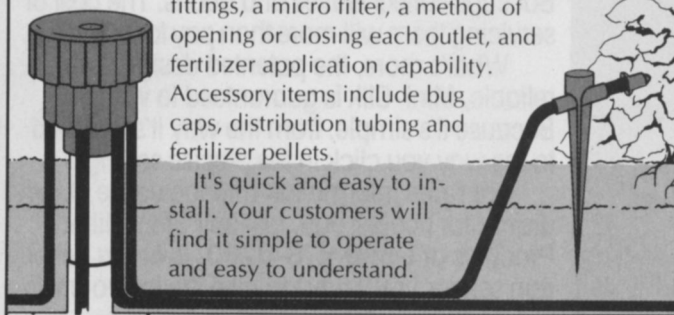
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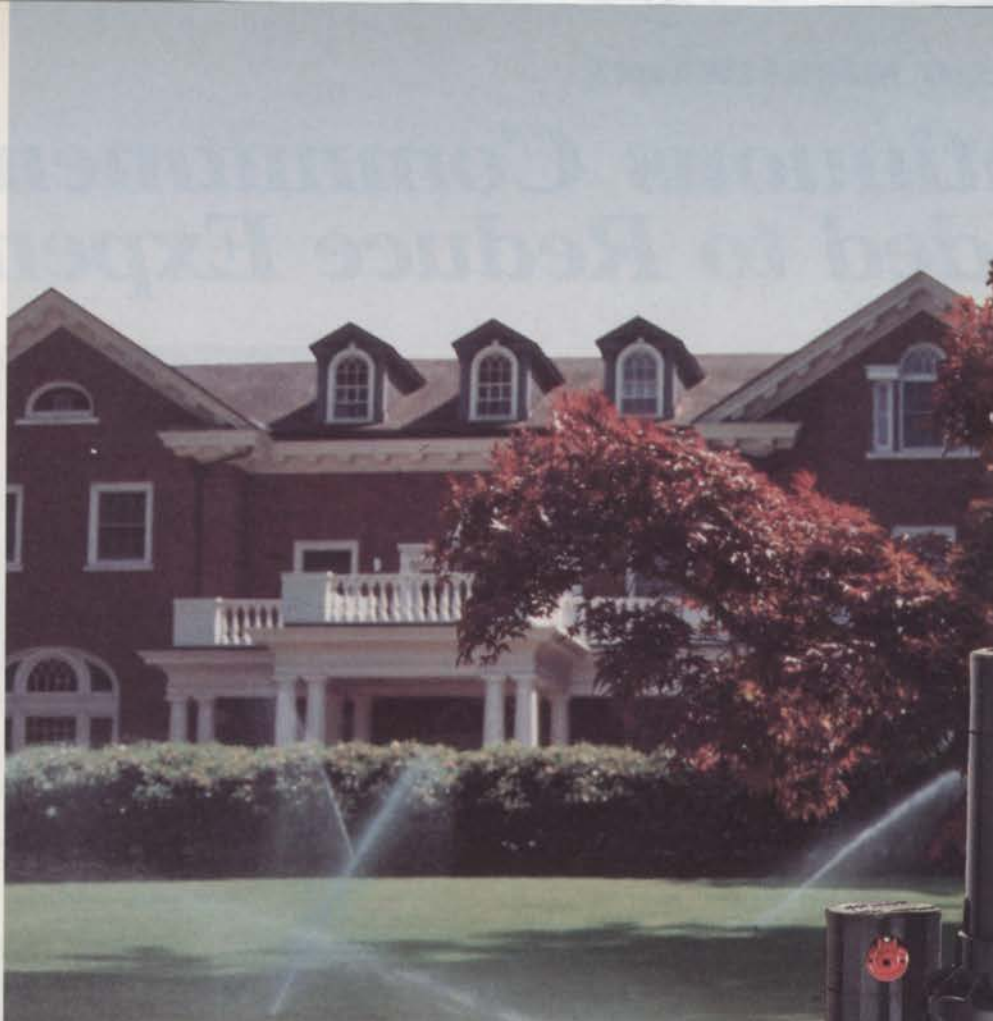
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Continuous Commitment Needed to Reduce Expenses

MANY LONG-TIME PRACTITIONERS will recognize an old, out-of-date phrase that pertained to early automated irrigation systems: Set-it and forget-it.

This phrase pertained as much to actual behavior as to an attitude. While this thinking was never realistic, it unfortunately still seems to be the attitude of many concerning the maintenance and management of irrigation systems.

The landscape irrigation system is a unique landscape maintenance tool because it's capable of paying for itself in the form of reduced landscape maintenance costs. Like all tools, however, an irrigation system requires operator commitment to maintenance, monitoring and management — the three M's.

The costs associated with system maintenance are greatly influenced at two stages: The design stage and the installation stage.

The professional irrigation system designer is essentially a problem solver. To do this successfully requires a thorough understanding of the problem — actually a challenge/opportunity.

Additionally, irrigation system design is essentially an exercise in product application. This requires a thorough knowledge of the many products available to solve the problem(s) in the most cost effective and efficient manner.

The professionally prepared irrigation system design is often a compromise between several competing and conflicting interests: The understandable desire of the owner to spend no more than is necessary, the pressure from other professionals to stay within budgeted amounts and making irrigation system design changes in cooperation with those responsible for developing the plan.

DESIGN TIPS. Areas where the designer can significantly affect future system maintenance costs include:

- Use Sch. 40 PVC pipe for sizes 2 inches and smaller. The thicker wall, while possibly not hydraulically necessary, is much more resilient to normal "digging around" in the landscape than is the much thinner wall class PVC pipe.

If struck by a shovel, the thicker wall pipe will withstand the blow much better than the thinner wall pipe.

- Use products designed and constructed for the specific application. This is a particular problem when residential grade products are used on commercial projects — areas where heavier maintenance equipment is used.

For example, the use of lightweight impact rotor pop-ups in areas where riding mowers will be used will virtually guarantee an on-going, costly maintenance problem.

- Devise, and show on design plans, a letter/numerical system for identifying remote control valves to a



This cabinet contains a solar-powered irrigation controller. Note the identifying laminated plastic tag attached to the cabinet.

particular controller. This is particularly important on projects where there is more than one controller.

- Do not rely upon remote control valves to perform the function of a pressure reducing valve when the hydraulic conditions of the system clearly call for the use of either pressure reducing valves or pressure regulating valves.

- On larger systems, use a gate valve to isolate portions of the mainline pipe system as well as to isolate each remote control valve from the mainline.

- Avoid using bucket type (open case) sprinklers in non-turf areas, such as hydroseed or expansive ground cover areas. The bucket tends to fill up with washed-in soil, rendering the sprinkler inoperable.

A closed-case type sprinkler, installed 2 inches above grade, is better suited here.

Of course there are many other considerations for the system designer, but the most important factor is to have a thorough understanding of the design problems and a complete knowledge of the products available to solve the problems.

LONG-TERM COSTS. The professional irrigation contractor is in a position to make the most impact upon long-term irrigation system maintenance costs. Several items to consider:



A poorly maintained irrigation field controller is unsightly and can be a dangerous hazard.

(continued on page 50)

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The 2100 Series remote control valve from **Weather-Matic** features a dual ported diaphragm to greatly minimize clogging and malfunctions.

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The design also permits equal pressure on both sides of the diaphragm wall, regardless of line pressure, when the valve is not operating and nearly equal pressure across the wall when operating. This feature prevents diaphragm "stretching," a common cause of valve failure in valves which are ported through the seat.

Circle 145 on reader service card

The **Rain Master** Direct Dial offers full micro-processor capability as

Irrigation Maintenance

(continued from page 48)

- Take the time to do it right the first time.
- Possess a thorough understanding of the proper procedures necessary to correctly install the equipment. This particularly applies to the installation of both solvent weld and 'O' ring types of PVC pipe and fittings.
- Install a quick coupling valve near the patio area and adjacent to the driveway as a convenience to the owner. On larger systems install a quick coupling valve at the end(s) of the mainline pipe.
- Regardless of the type of pipe and fittings of the sprinkler system, always install every sprinkler head and quick coupling valve on some type of swing riser assembly. This will make the final adjustment to grade much easier.
- In addition, it will eliminate possible damage to the pipe and fittings from compressive loading on the sprinkler heads.
- Install low voltage wire within electric conduit where this wire does not occur within the mainline pipe trench.
- Properly ground irrigation controllers following local codes and manufacturers' recommendations. This particularly applies to solid state type units.
- Use magnetic detector tape in the mainline trench if there is no wire within that particular stretch of mainline trench.

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• To avoid damage, properly support all valve access boxes with bricks or boards so that they will not tilt or settle.

• Make no wire splice between the controller and the remote control valve. Make wire splices only within a remote control valve access box.

• Install no more than one remote control valve per access box, regardless of the size of the box.

• Provide a minimum of six inches clearance between the interior walls of the valve access box and the items contained therein.

• Install backflow prevention equipment in as protected a location as possible, but not within turf areas if possible.

• Place sprinkler heads at least six inches from the edge of walks, walls and drives. This will help reduce damage to the units by maintenance equipment.

Of course there are many more items for the contractor to consider that will contribute to lower system maintenance costs. There must be a continuous commitment to routine system maintenance, if for no other reason than to protect and enhance the initial investment.

This is particularly true if any of the more sophisticated sensing and monitoring equipment is used — such as flow sensing devices, moisture sensing equipment, rain catchment devices, fertigation equipment and weather stations.

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for lighting and shorts and all station outputs.

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Hydromaster and Hydromanager moisture sensors from **Systematic Irrigation Controls Inc.** provide irrigation only when turf and plants actually need it.

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Constructed of non-corrosive, non-metallic material and polyurethane, the probe contains no active circuitry. It doesn't require special housing or coatings, even though it is buried in the soil at the root-zone level.

Available in models to serve varying needs, the Hydromaster lines feature sensors that attach to either a solenoid or remote control valve. The Hydromanager is similar in design and function to the Hydromaster except its module is wired to a time clock.

Circle 148 on reader service card

Stop It,[®] water activated repair tape from **InduMar Products** is a special tape composed of water activated polyurethane resins coated on a strong, knitted fiberglass substrate.

Once activated by immersion in water, Stop It will transform from a "wet" tape to a hard machinable "plastic."

Stop It is designed for the repair and maintenance of pipe, plastic or metal. Applied by hand, it's routinely used for stopping leaks and reinforcement of pipe connectors.

The tape comes in two sizes: 2-inches wide by 12-feet long and 4-inches wide by 12-feet long. Sold by the case, each contains 10 rolls. Each roll is individually packaged with directions, illustrations and gloves.

Circle 149 on reader service card

The Pelt 900 from **The Pelt Co.** is a portable, electric, lightweight trencher for the contractor. Available with various blade combinations, it provides a neat, narrow trench suitable for residential irrigation.

It is an economical, fast, maintenance-free machine offering digging widths from $\frac{3}{4}$ to 2 inches and a digging depth up to 9 inches. It operates from any household outlet with a 12-gauge, 100-foot extension cord.

Circle 150 on reader service card

increase the quality of the system by offering the owner various options to make the system more functional, efficient and easier to operate. I call this "selling up," i.e. offering the owner more choices and more of a voice in determining the overall quality of the system.

Remember: The initial quality of the system will greatly influence long term system maintenance costs. Where initial quality is sacrificed, it is not reasonable to expect the system to perform in the most satisfactory manner.

The true cost of an irrigation system is not the initial cost, but the cost to maintain, monitor and manage the system throughout its anticipated life.

There is another old phrase — you get what you pay for. It always has and always will apply to sprinkler irrigation systems. — *Jack Donis*

The author is a certified irrigation designer based in Tucson, Ariz. Donis is a graduate of the University of Oregon School of Landscape Architecture, president of the American Society of Irrigation Consultants and is on the Irrigation Association's certification board of governors.



This electric remote control valve access box, with attached identifying laminated plastic tag, identifies the RCV to a particular controller and control station.

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Are Green Industry Operators in Compliance?

WHILE THE HAZARD communication standard issued by the Occupational Safety and Health Administration became effective two years ago this month, there is no way to determine how much of the green industry is complying to the regulation.

Central to the reasoning behind the directive is the belief that all employees have the right to be aware of potentially hazardous substances present in the work place, and that they also have the right to be properly trained about these products.

The regulation has five basic steps: Determining the hazardous wastes on site, collecting manufacturer safety data sheets for all chemicals on site, properly labeling all chemicals used, devising a written program for the handling of chemicals and training employees about the proper use of chemicals and procedures to follow in case of a spill.

Another requirement involves

assigning someone in the company compliance manager or training instructor to oversee the program.

According to the OSHA standard, a hazardous chemical is one that there is "statistically significant evidence based on at least one study conducted in accordance with scientific principles that acute or chronic health effects may occur."

While the first three steps are fairly easy to accomplish, many companies often have problems with the written program. This portion must explain the methods you will use to add new materials to the system, detect spills and leaks, label service containers, provide additional information to employees, train new workers, notify contractors who may work temporarily in your facility and document the required training.

COMMON SENSE. While some have claimed the rules are a burden for small operators, Mary

Malotke, president, Tencon Associates, Milford, Ohio, disagreed saying the rules are common sense and do not have to cost a lot of money to initiate.

"When it was first passed, I think a lot of people saw it as a 'consultant employment act' when it really isn't," she said. "People made it sound much more ominous than it really was."

Malotke cited a couple of incidents that demonstrate the worthiness of the rules:

•The first involved a small car dealer who had an employee come in every weekend to clean. He used a chemical solvent to clean the concrete in the service garage. He spread the solvent on the floor and then hosed it down the sewer. He also kept all the doors closed because he was the only person there at the time.

Because the doors were closed and there was no ventilation, the man eventually got sick from the regular exposure.

•Another occurred at a golf course that had a 16-year-old walk the course watering in fertilizers and chemicals after they were sprayed. Because he lacked the proper training, he performed his job barefooted and without gloves. He, too, eventually got sick from the exposure.

"In both of these cases, there was no intention to hurt these people. It's unfortunate incidents like these that the hazard communication plans can eliminate," she said. "It may sound silly saying these people weren't aware of the risks they were exposed to. But if their bosses didn't warn them up front and tell them exactly how to use the materials, how could they have known?"

From her work with many industries, Malotke said, her impression is that the turf industry is slower than most in complying

with the standards.

"I've been speaking at green industry trade shows and conferences for three years now and am still fairly surprised at some of the reactions from operators," she said. "Some of them really do not know that this has been mandated, and that they could be in real trouble if they were ever inspected by an OSHA agent."

Because the written requirement calls for a list of all chemicals stored or used on site, Malotke said, many people found implementing the program was a good "housecleaning."

"Because you are required to know and list every chemical that you have on your property, it's just a natural way of cleaning," she said. "I've heard stories about people finding a lot of things they'd forgotten about and had no intention of keeping. It actually lowers your liability because you're getting rid of stuff you don't need to have laying around."

Implementing the program need not be costly, according to Malotke. In fact, it's actually just a lot of common sense.

"What it's saying is gather all the manufacturer safety data sheets in front of you," she said. "Then set to one side the ones that are hazardous, need special handling and then tell your employees about it."

OSHA INSPECTIONS. While OSHA representatives are now authorized to check for hazard communication compliance when they are on a property for another reason, Malotke said, her impression has been they don't immediately throw the book at someone who is not completely up to par with the program.

"From what I understand, if they see some sign that the owner has made some attempts to com-

10 COMMONLY CITED OSHA HAZARD COMMUNICATIONS REGULATIONS



No written program.



Safety data sheets not accessible to employees.



No employee training program.



Inventory of hazardous chemicals left out of written program.



No material safety data sheets.



No exposure limit information on data sheets for chemical mixtures.



No or incorrect labeling of in-plant containers.



Health hazards not contained on data sheets.



No label identification of in-plant containers.



No written chemical hazard determination.

ply and just didn't understand completely or somehow didn't do it exactly right, they're not issuing fines," she said. "They sort of point out what is wrong, what isn't up to snuff and say they'll be back in three months or six months to check on it again. Then if you're not in compliance, I think they get a little more strict and issue fines and what not."

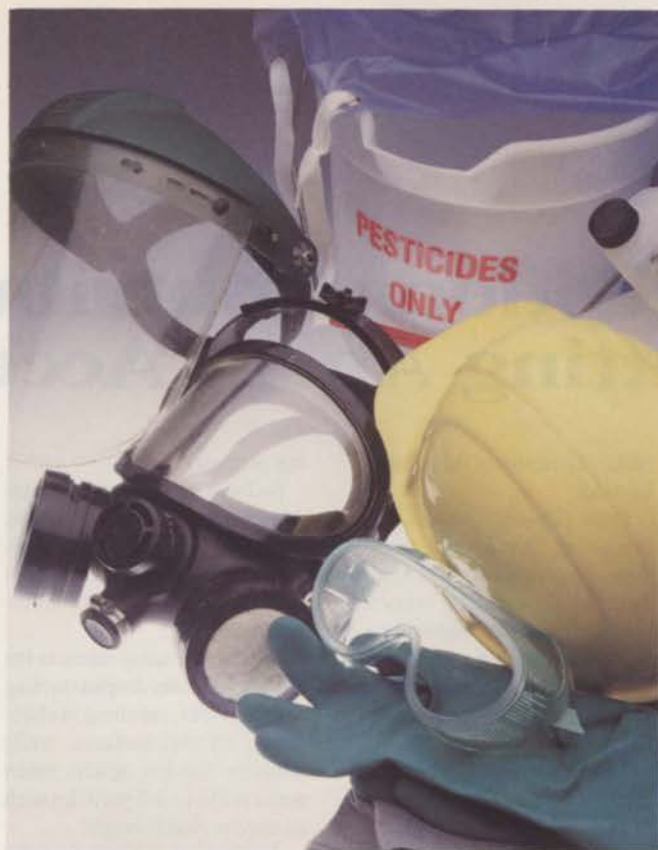
Tom Guilmartin from OSHA's Boston, Mass., office said that is basically how a hazard communication inspection is conducted. While the organization has been active in its quest to enforce hazard communication, Guilmartin said, the policy and the lawn maintenance industry do not rank as high on its list of major concerns. Probably the most watched industry by OSHA is construction.

"Of course the proper labeling and use of chemicals is important, I'm not discounting that," he said. "But we do watch construction much more because having workers up on beams is more of a life threatening situation than ones on the ground spraying."

ENACTING A POLICY. Using the binder, an operator should be able to implement a program in about four days, according to Barry Troutman, PLCAA's director of education and author of the binder. Without these guidelines and ready-made forms it could easily take months.

"We tried to include everything a lawn care operator would need to start a hazard communication program," he said. "It's all there."

Troutman acknowledged that there undoubtedly are some operators who are ignoring the compliance issue, but said his gut feeling is that most operators have at least attempted to conform to the regulation.



Communicate safety to your employees. Photo: Barney Taxel.

The written program is the portion that most people fumble over and which has the highest number of violations, Troutman said.

The PLCAA binder includes self-explanatory forms for the written program. All an operator needs to do is complete the forms.

After having spent the time to initiate the program, you need to maintain safety data sheets on new chemicals brought on site and keep records of employee training.

An effective method in keeping updated safety data sheets, according to Malotke, is writing a notice to manufacturers on your invoices that you will not pay for shipments unless the data sheets are included.

For those who don't want to be that drastic, the PLCAA guide contains a sample letter that can be sent to suppliers requesting data sheets. Keeping copies of these letters is another step that shows you acted responsibly.

Compliance for large lawn maintenance companies was obviously easier than for small operations, said Joe Winland, a vice president with TruGreen, Alpharetta, Ga.

"It was easier for us because we already had a lot of the necessary resources in house like a safety manager," he said. "One

person didn't have to put the whole program together."

Overall the standard is beneficial and not an example of over-regulation, he said.

"This isn't something that was just targeted at our industry; anybody using chemical substances has to comply," Winland said. "There is a need to do a good job of communicating with employees to ensure they do things right. So this law makes really good business sense."

Cliff Richey, Lush Lawns of Avon, Ohio, said he is in complete compliance and does not consider the standard unwarranted.

"Laws and regulations are the rule of the land," he said. "Sooner or later they're going to catch up with you. Someone has to set the guidelines, and these weren't all that hard to follow. It's basically common sense and safety."

"I've heard some people complaining about it. But after doing it myself and seeing that it wasn't much of a problem, I wonder how serious they are about the rest of their business."

Malotke also voiced some suspicions about those who may be ignoring the standard.

"Those who know about it and aren't doing anything are the ones who really don't care about their

MAJORITY OF COMPLAINTS CONSIDERED 'LESS THAN SERIOUS'

THE HAZARD COMMUNICATION standard first went into effect in 1985 for chemical manufacturers, distributors and importers. The standard was expanded to cover all industries in 1988.

In the first three years — through 1988 — the Occupational Safety and Health Administration found slightly more than 49,000 violations. The majority of the violations, about 42,000, were determined to be "other than serious."

Most of the infringements were found during regular general schedule inspections — OSHA inspectors are permitted to check for hazard communications compliance whenever they're on a site.

Slightly more than 5,400 were cited during inspections prompted by an employee complaint, and about 100 resulted from an accident reported to OSHA.

employees," she said. "They're the type that doesn't believe in employee benefits or health insurance. They may think they're saving money or skirting the law, but in the end they're losing."

For anyone who was unaware of the standard, the PLCAA binders are still available. The cost of the binder is \$195 and can be obtained by calling the PLCAA office at 404/977-5222 between 9 a.m. and 5 p.m. EST. — David Westrick

The author is Assistant Editor of Lawn and Landscape Maintenance magazine.

Misconceptions Contribute to Slow Wetting Agent Acceptance

SOIL WETTING AGENTS represent an idea whose time has not yet come — but is in the offing.

Just what are soil wetting agents and what benefits do they hold for the lawn maintenance industry? Simply put, wetting agents are water soluble chemicals that allow not only water, but pesticides, herbicides, fertilizers and nutrients to better and more evenly permeate the soil, with longer residual.

Groundwater and water conservation issues will make soil wetting agents increasingly popular through the 1990s, said Greg Richards, chemical product manager, LESCO, Rocky River, Ohio.

Chuck Champion, sales manager, Kalo Inc., Overland Park, Kan., agreed adding turf managers will find more of a challenge in the management of water than in any other phase of their operations.

Wetting agents respond to new and more comprehensive interests in lawn maintenance, said Hal Dickey, director of advertising, PBI/Gordon Corp., Kansas City, Mo.

"We've seen people becoming more concerned with anything that interferes with nutrients, fertilizer and other chemicals which

add to the health of their lawns," he said.

Drew Effrom, vice president, marketing, Aquatrols Corp. of America, Pennsauken, N.J., said special application service operators as well as mowing contractors are experiencing needs to expand their services and see soil wetting agents as a possible addition.

"The volume of companies marketing these products has been growing," he said. "The increased popularity of soil wetting agents has been due to an increased awareness of their general benefits. Professional managers are becoming more sophisticated in terms of labor and time sav-

ing products."

Soil wetting agents are designed to change the behavior of water, and do so by introducing a molecular action which lowers cohesive and adhesive tensions inherent in water.

Cohesive tension refers to the tendency of water droplets to cling to themselves, resulting in channeling off turf surfaces, while adhesive tension results when water sticks to soil particles such as clay or water ridges.

Another set of terms describe the electronic action of the water's ions. Anionic is a negatively charged ion most frequently used to reduce surface tension or for rapid wetting. Cationic are

positively charged and tend to exhibit the highest degree of toxicity to plants. The least phytotoxic, the non-ionic types of surfactants do not form charged particles at all. They are, therefore, much less chemically active and have wider use applications in the turf and horticulture industries.

Though soil wetting agents have been used for about 20 years on golf courses and athletic fields, they are said to be lagging behind in lawn and landscape maintenance.

Martin Schaefer, general superintendent, Environmental Care Inc., San Fernando, Calif., said, "We haven't used them very often that I'm aware of. We haven't done the research and don't know when, where and how to use them."

Little research to determine the extent of the product's use in the lawn maintenance industry has been done, however, two years ago Aquatrols conducted a study of 100 phone respondents to see what they could find.

In response to the question, "Have you ever used soil wetting agents?" 43 said yes and 57 no. To the question "Are you offering soil wetting agents now?" only 31 answered — six said yes and 25 no.

"This seems to indicate a fairly good awareness, but not too much usage," Effrom said.

Another Aquatrol survey suggested that this awareness was only general, and did not zero in on the primary benefits of these products.

When asked what they considered to be the primary benefits of wetting agents, 40 percent said they help increase the absorption of chemicals, 32 percent said they help chemicals adhere to weeds, 29 percent said they weren't fa-

(continued on page 58)



Soil wetting agents can enhance the growth and beauty of your lawn. These products also allow water and pesticides to more evenly permeate the soil (inset). Inset illustration: Aquatrols.



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Mower deck flips up vertically for easy access. (Do not attempt maintenance while mower is engaged.)



Wetting Agents

(continued from page 56)

miliar with the products, 10 percent said they improved drainage, 8 percent said they made the chemicals easier to handle, 5 percent said they soften the ground, 4 percent said they enhance the growth and beauty of the lawn and 1 percent said they fight fungus.

Of these, only responses in the 4 percent and 5 percent range relate to a soil wetting agent's primary purpose. Effron said if he asked the same question of golf course superintendents he thought he would get a different response because they had a more holistic approach to turf.

Lawn operators, on the other hand, tend to specialize in either special applications or general maintenance, he said. Yet as these two markets continue to offer each other's services and become more like another, their approach may also grow more holistic.

Another reason for the general high awareness but actual low use of wetting agents, Effron said, is

that "it's been very difficult over the years to quantify the efficacy of these products. The nature of the tests necessary to prove the benefits of increased water penetration can be extremely ex-

.....
"We don't use them very much. They work well, but, basically, there is a financial drawback."

pensive and very technical to conduct."

Still another major drawback, Champion said, is the price competitiveness of lawn maintenance which makes it difficult for operators to charge the proper price for wetting agents.

"We don't use them very much. They work well, but, basically,

there is a financial drawback," said Willard Erickson, owner, Erickson Landscaping, Salt Lake City, Utah. "Most of our work is done on bids, and the people drawing up the specs don't put them in. They are expensive for maintenance too. There's basically a lack of knowledge on both the customer's and applicator's part, which is another reason they have not made much impact."

Operators also have a problem in conveying the benefits of these products to homeowners.

"Fertilizers bring up the grass, herbicides kill the weeds and insecticides kill the bugs," Effron said. "But wetting agents work very subtly beneath the soil, with results harder to measure and explain."

Dickey recalled a condominium grounds manager whose attitude about wetting agents changed after he used them.

"Because of the hardness of the soil and the compaction, he could not get the grass to grow," he said.

"After starting on a wetting agent, he got growth. He started using

our organic fertilizer with his wetting agent, and the grass improved so much that the condo owners started coming to him and asking what he was using."

Several misconceptions remain about soil wetting agents and contribute to their slow acceptance.

One is the confusion between localized dry spots and various patch diseases, Champion said. In many soils, particularly sandy ones, there is a microscopic algaelike material which grows on the granules and literally repels water.

These soils are impossible to wet, and are often diagnosed as victims of patch diseases. But when these organic coatings are treated with a wetting agent, the chemical composition is altered and these soils can become wet.

Other misconceptions involve the nature of different types of surfactants, or surface acting agents. For instance, soil wetting agents should be distinguished from spray adjuvants. Whereas the former are compounds de-

EASY COME.



Top row: Leaf-feeding caterpillar, Mealy bug, Japanese beetle, Bagworm, Gypsy moth. Bottom row: Cankerworm, Leaf skeletonizer, Tent caterpillar, Webworm.

signed to improve water penetration into soils, they are not that appropriate for use on the leaf surfaces of trees, shrubs and foliage, according to Effron.

Spray adjuvants, which reduce the surface tension of water, may be needed particularly when leaves have a waxy finish, making them impervious to water and certain chemicals. Spray adjuvants help spread water soluble products over the surface of the leaf. Some of these materials enhance tackiness or

stickiness.

Another area of surfactant confusion surrounds wetting agents and detergents. Both change surface tension and affect water behavior.

While wetting agents cause water to spread and penetrate, a detergent — such as Ivory soap — exerts an emulsifying effect on the surfaces around it. Detergents are designed to wash off quickly with little residue activity.

Wetting agents are designed to have a long lasting effect and to

do minimum damage to the turf in terms of toxicity. Like any other chemical composition, they have to be mixed correctly and applied in the proper amounts. Some wetting agents have been known to actually "burn" turf. Too high a concentrate will blanch white the cuticle or waxy outer portion of a grass blade.

Usage, the number of applications and costs vary from product to product.

Aquatrol's Effron said his products include a liquid concentrate which has 100 percent active ingredients and a spreadable corn cob carrier for rotary or drop spreaders, with a 15 percent active ingredient. He estimated the range of costs for operators to be about \$8 to \$10 per 1,000 square feet and recommended two applications per season; perhaps more in high stress areas.

Kalo's product, Hydro-Wet in liquid and Hydro-Wet TG (for Terra Green) in granular, is comprised of an inert mineral with an absorbency rate that allows the company to claim 22.5 percent active in this form, according to

Champion.

He recommended at least three applications — in the late spring, summer and fall — at the rate of two fluid ounces per 1,000 square feet or 1.4 pounds for each granular application.

"Most lawn care professionals like the granular so they can use it selectively," he said. "They pay more for the inactive ingredients of the granular, but if he is doing 30 homes and only three need wetting agents, granular is cheaper than filling a tank with the liquid."

For those who want to use liquids selectively, LESCO is working on a hose end spray that can be screwed onto a quart-sized liquid container for spot spraying, Richards said. This will be marketed later this summer.

Pellets have been on the market for about two years for these localized dry spots, but can pose a control problem, he added.

"We found that with pellets you don't know how much you are putting on," Richards said. "Every 10 seconds the surface of a pellet changes at the end of the



Operators need to relay the benefits of soil wetting agents.

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hose, but you can't tell just how it is breaking down. There may not be a critical difference, but it's not very scientific, which is why we're developing the hose end for liquids.

"The product will already be in diluted form to save the applicator from making up a tank of the liquid, and since the mix-

.....
**"We've had
 more interest in
 these products,
 but the need
 hasn't trans-
 lated into many
 sales."**

ture is preset there is no way the turf will be burned."

Richards said the LESCO liquid form was about 88 percent active and the granular almost 22 percent. He estimated costs for the granular to be \$50 to \$60 for a 50-pound bag, using 2.5

to 5 pounds for 1,000 square feet in a curative application or about 1.4 pounds under normal conditions every two to four weeks. The scenario for the liquid was similar.

PBI/Gordon has just entered the wetting agent field with Turfex, a product developed and tested in the United Kingdom.

For problem areas, Dickey said, applications should be made once a week for four weeks using three ounces per 1,000 square feet. A follow up application is recommended three weeks later at half the rate. The product's effectiveness builds up with repeated applications.

External factors such as soil type and rainfall, as well as the variety of products on the market might make it difficult for an operator to choose what's best for his needs.

James Beard, professor of turfgrass science, Texas A&M University, College Station, Texas, said soil wetting agents have found a niche as a useful application, but there have not been any significant changes occurring in the technological knowledge

base.

According to Beard, effectiveness varies among soil wetting agents. He recommended that operators check with their local university or county extension agronomist for advice on the effectiveness of any particular product.

In a general sense, Effron said,

.....
**Wetting agents
 are designed
 to have
 long lasting ef-
 fects with
 minimal turf
 damage.**

operators should look for a brand which is non-ionic, has a high residual activity in the soil and has a high composite of active ingredients.

Despite mixed emotions, environmental issues may force previously uninterested operators

to take another look at soil wetting agents.

"We've had more interest in these products than we've ever had," Champion said. "People obviously see a need, though the need has not yet translated into many sales."

Since the average homeowner doesn't understand the benefits of soil wetting agents, the operator has some formidable but not insurmountable marketing difficulties.

"It becomes the responsibility of the lawn care professional to learn all he can about wetting agents so he can express their benefits to the homeowner, so he will be inclined to pay for this additional service," Effron said. "It's not a program for the price sensitive customer who is going to push the operator into the lowest possible cost. Rather it's for the customer who has confidence in the lawn operator's advice, whose goal is to have a really quality lawn without cutting corners." —
 Michael Major ■

The author is a free-lance writer based in Port Townsend, Wash.

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Retaining Natural Tree Shape Critical To Pruning

TREE CARE MAY, AT first glance, seem like a logical extension of the services you are currently offering. Establishing a tree care service could be a profitable next step, as well as making your company truly a full service lawn and landscape maintenance organization.

Adding tree care to your current list of services, however, is not without its pitfalls. Basic tree needs, what you need to get into the tree care business and some alternatives for profitably pro-

viding this service while keeping your customers happy will be discussed in this article.

PRUNING STANDARDS. Proper pruning is performed according to standards published by the National Arborist Association. The "Standards" book is a library item for all NAA members and other professional arborists and should be your first investment when getting into the tree care business.

Besides pruning, the book contains standards for guying, cabl-

ing and bracing, fertilizing, calibrating hydraulic sprayers and installing lightning protection.

Standards are detailed for four classes of pruning — fine, medium, coarse and drop crotch pruning or cutting back. The first three classes differ by the size of branch to be removed. Fine pruning includes branches as small as 1/2 inch, medium 1 inch and coarse pruning 2 inches.

General standards apply to all classes of pruning and differentiate proper pruning from the tree butchery that appalls arborists every day. These general standards include making cuts as close to the trunk or parent limb as possible without removing the branch collar, precutting large branches to prevent splitting or peeling of bark and disinfecting tools after working on diseased trees.

Besides the pruning standards book, another volume that should be in every library before starting tree care is "A New Tree Biology" by Alex Shigo. In this book, Shigo explains why it is unhealthy to leave branch stubs or to flush cut.

He also details how trees accomplish the process lay people refer to as "healing," noting that trees never heal from a wound. They compartmentalize, generating callus growth to protect the healthy, living tissue from that exposed to disease or insect infestation. Compartmentalization is hastened when the branch collar is left.

Precutting is necessary to manage heavy tree limbs. An undercut is made several inches out from the branch collar. A top cut is then made about 1/2 inch out from the undercut. The branch or limb is then lowered by rope to protect the tree, people, structures and other plant material below. Finally the stub is removed at the branch collar.

DROP CROTCH PRUNING. Many who claim to be tree pruners use the term drop crotch pruning and topping or some of its more acceptable euphemisms synonymously. Nothing could be further from fact. Topping is a form of butchery that is practiced to some extent everywhere. It is prevalent, however, in areas of the country where property owners are less knowledgeable about tree needs and in tropical areas where trees regrow quickly.

The public, however, is gaining more and more knowledge about tree care needs, and topping is on the wane. Government has entered the picture in some areas, prohibiting topping by levying big fines against tree cutters who practice it and property owners who allow it to be done.

The two main points to remember when drop crotch pruning is to make all cuts at laterals and symmetrically shape the tree as you prune. It should retain its natural shape, not look like a hat rack or lollipop.

Laterals are points where branching takes place, including where major limbs leave the trunk or smaller branches leave parent limbs. There is a rule of one-third when deep crotch pruning. Cut back to laterals one-third the diameter of the cut being made, and do not reduce the overall size of the tree more than one-third of the total canopy area in a single operation.

Toppers do not follow any of these rules. They just hack away, leaving big limb stubs with gaping wounds that act as open doors to insects and disease organisms. Seldom is regrowth more than weak sucker growth.

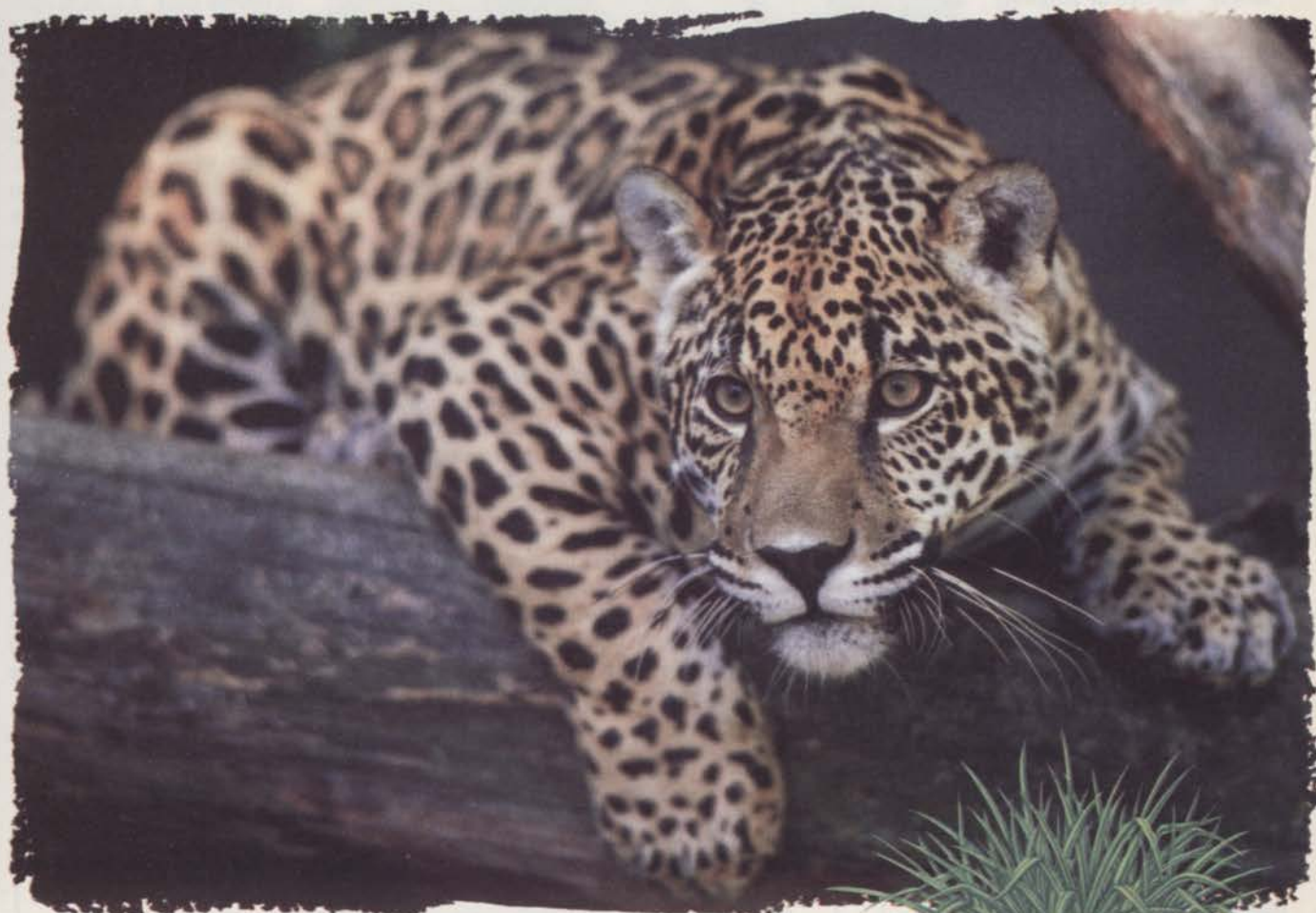
As you cut back a tree, remember its shape. The symmetrical appearance should be an impor-

(continued on page 64)

Pruning from the ground acts more like shearing and results in tree butchery.



Some Things in Nature Were Meant to Have Spots.
Your Turf Just Wasn't One of Them.

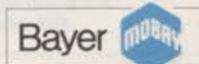


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Tree Pruning

(continued from page 62)

tant consideration throughout this procedure, including when "raising" the tree by removing lower bottom branches for underclearance. However, it is also important to realize that you do not shear trees like you do shrubs.

Trees are pruned from the inside out by removing branches from the trunk or parent limb, not from the ends of branches. This is why many arborists differentiate between trimming and pruning, stating that trimming is for shrubs, pruning is for trees. They are entirely different techniques requiring special equipment, skills and training.

Drop crotch pruning should not be standard operating procedure. The NAA recommends the procedure only in cases of utility line interference, when certain portions of the roots have been severed or severely damaged, when there is unusually rapid tree growth or for specific topiary training or dwarfing.



If the tree can be pruned from the ground using pole pruners, special training is still necessary.

However, the standards note that, "this practice of cutting back silver maples, poplars and other trees with brittle and soft wood is an established practice and has proven beneficial in maintaining the safety of these trees over long periods of growth. An alternative method of maintaining the safety of these trees may be cabling and bracing."

CABLING AND BRACING. Weak limbs that are otherwise healthy may be preserved through a procedure known as cabling and

bracing. Cabling is seen most often in trees where branches form a tight V-shaped crotch. Because there is little room for growth in the crotch area, the two branches begin fighting with each other for space until a good wind storm settles the fight by breaking the weaker limb.

Cabling and bracing involves drilling through the affected branches, inserting eyebolts and stretching a cable between the bolts. Sometimes, cables are installed in combination with rods — threaded galvanized rods that

hold the branches even more rigid than the cable.

There are some areas of the country where this practice is widespread and others where it is seldom used. It is most often prescribed for beautiful, mature trees whose owners will go to great lengths to preserve the shape and rich, full canopy.

It is practiced less in tropical regions where trees grow fast. There, it is more common to remove the affected branches or the whole tree. Even in warm climates, however, owners now want their trees preserved and will seek out the tree health professional who can assure them of sound arboricultural practices.

Cable bracing may not have been learned in some regions because there was no call for it, or the practice was downplayed because the practitioners did not know how to do it. Regardless of the reason, things are changing and those who want to practice tree care had better learn how to cable and brace. The best way to begin learning is to purchase the NAA standards book.

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FERTILIZER AND PEST CONTROL. If you are caring for woody shrubs, you probably use many of the same fertilizer and pest control techniques and products as you would on trees. Like pruning, however, you will need heavier equipment. Most tree fertilizer is applied by the deep root liquid method, requiring high pressure to inject the fertilizer into the soil at the proper depth. Spray equipment must have the skill to minimize drift.

If you have passed your state pesticide certification examination, you should know of the full range of pest problems and treatments in your area. Most state exams cover everything from lawn pests to those that attack trees.

To provide complete health care to trees, as well as shrubs and lawns, you should also be aware of the various systemic systems and techniques such as microinjection which places pest control material directly into the tree trunk where it can be taken up through the tree's vascular system without reaching the atmosphere.

EQUIPMENT. The equipment required for tree care is upsized from that used for shrub care because you are dealing with much larger organisms. The typical scissors-type pruner you use for shrubs does not have the pressure to cut through larger tree branches. On marginal branches, they make very ragged cuts. Instead, arborists use anvil-type loppers.

Heavy-duty saws, both manual and power, will be needed for tree care. Pole pruners and pole saws will also be part of your basic equipment, as will ear muffs if you use power saws and hard hats. You will also need bigger brush chippers, and if you choose to get into high tree work, you will need ropes, saddles and eventually aerial lifts.

PITFALLS OF TREE CARE. It is fine to have an understanding of tree care, but before venturing into this specialized area of landscape maintenance known as arboriculture, you should know some of the business pitfalls that await you.

As soon as one of your workers leaves the ground to climb a tree, your worker's compensation bill climbs just as far as he does. Tree care is in a totally dif-

ferent comp class from landscape maintenance. In fact, insurance is one of the arborist's greatest expense items. Landscape maintenance companies that do tree climbing are in the same rating class.

In addition, tree care requires different skills and training. You will be working with a whole new set of safety rules and issues. There will be unfamiliar regulations that you will have to face such as those governing working near energized lines.

Tree care workers have a different personality, attitude and mindset from landscape maintenance workers. They also know that they are in short supply. It's an employee's market for climbers.

If you think you can mix together and shift people between tree and landscape crews, be forewarned that it will not work. If a company has "tree and landscape" in its name, both functions operate as separate divisions. Be assured that most, if not all, have tried mixing the two before realizing that the only way to offer both services is to operate the two divisions as virtually independent companies.

With these warnings in mind, how can a landscape maintenance company expand into tree care? The best way is to be practical. Do some studying. Attend arboricultural seminars. Realize the differences. Know the limitations of your present organization. Decide on the resources you are willing to commit to getting into the tree care business.

Unless you are willing to go the whole route, we recommend that you train your crews to properly prune from the ground using the NAA standards. For larger trees in which climbing or an aerial bucket is needed, subcontract the work to an arborist.

The NAA standards book can be ordered from the NAA, P.O. Box 1094, The Meeting Place Mall, Route 101, Amherst, N.H. 03031-1094. It's \$5 for members and \$12 for non-members. —*Dick Proudfoot*

The author is manager of Pruett Tree Service, Portland, Ore. He is also chairman of the National Arborist Association Foundation, the research and education arm of the commercial arborists' trade association.

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Strong Root Systems Often Encouraged With Staking

THERE ARE TWO SCHOOLS OF THOUGHT CONCERNING the use of tree staking and guying.

Some horticulturists believe that staking weakens the wood of a tree, delaying the process of proper/normal trunk hardening which allows the tree to stand unassisted.

At the same time, others believe there are occasions where staking is beneficial. Some instances include:

.....

Some believe staking weakens a tree, delaying the process of normal trunk hardening while others see it as beneficial.

- Trees that have been toppled by storms. These trees should be quickly righted and held in place by staking and guying.

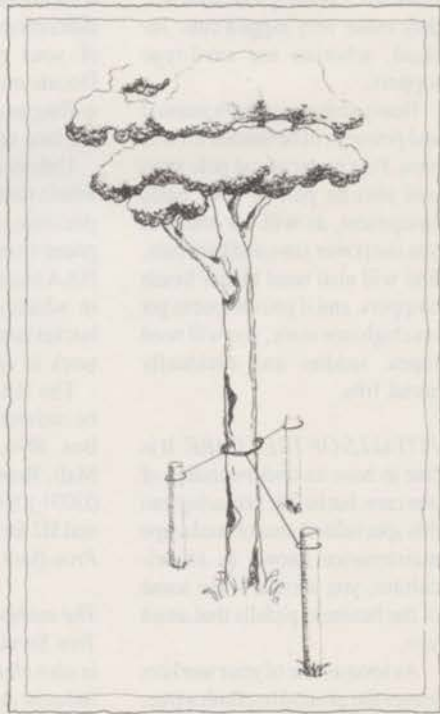
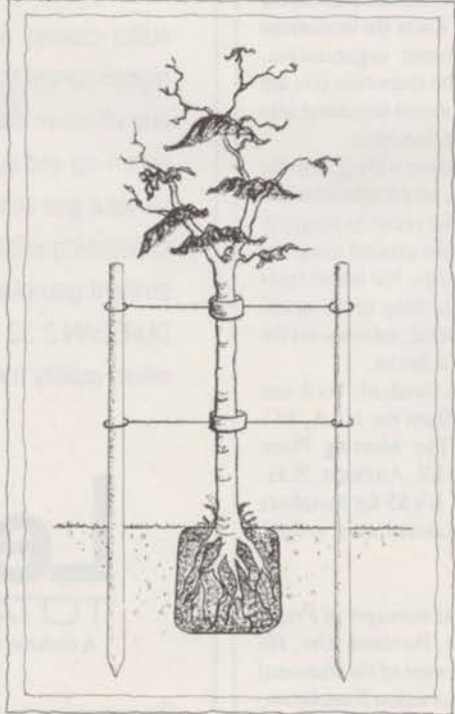
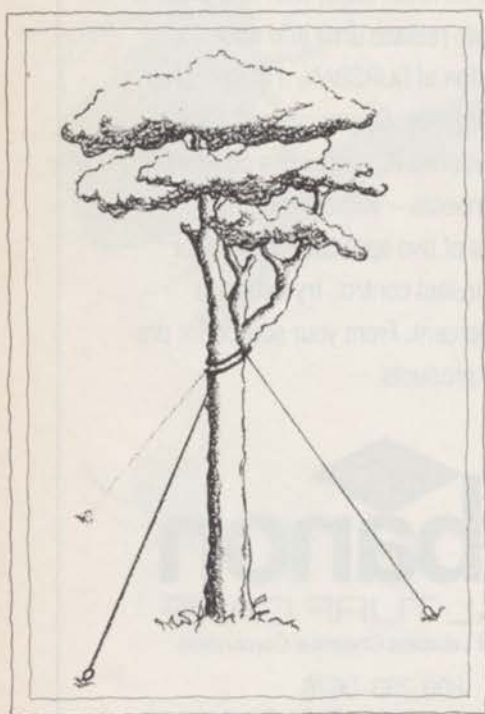
- Young or transplanted trees. These should be staked to help them establish a strong root system and to avoid root damage as trees move during windy conditions. Any tree with a heavy canopy and a tendency to resist the wind is well suited for guying and staking to avoid toppling.

- Trees that are transplanted from containers may benefit from staking to keep them in a vertical position.

- Trees that are leaning from the vertical can be helped significantly by staking and guying.

- Older trees, which have developed trunk or limb problems, can

(continued on page 68)



Staking to anchor using the guy wire method on a fast tapering trunk tree. Attach guy wire to tree with hose or tree tie system. The anchor could be a pipe/metal stake or manufactured tree anchor (left). Double pole staking method for support using 6 to 8 feet stakes. Leave room for some trunk movement (center). Three stake low anchoring to maintain tree top movement (right).

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also be aided by staking and guying.

OBJECTIVES. For whatever reason you decide to stake a tree, following are some basic objectives for proper tree staking.

The first objective is to consider what you are trying to accomplish — keeping the tree in a vertical position no matter how strong the wind, how steep the grade or how much or little water the tree receives.

Secondly, operators want to keep tree trunks from being damaged or injured. This is particularly true for smaller plant material in which excessive bending of the trunk may cause trunk damage.

Staking will ensure the healthy integrity of the trunk and prevent unnecessary tissue damage or breakage of the trunk or branches. The process allows roots to develop properly as they emerge from the root ball, and will prevent movement of the root ball within the planting site.

Root ball movement must be minimized to avoid damage to small feeder roots. Staking can satisfactorily accomplish this need.

For the purposes of this article, we'll consider four different kinds of plant material origins. Each of these origins will have various needs pertaining to tree staking.

- As a rule of thumb, trees in containers with a height of more than four times the diameter of the root ball should be staked. Staking trees of this size will eliminate or reduce the amount of shifting and movement of the roots within the root ball.

- Balled and burlap trees will have a higher survival rate if they are staked after installation. Since the ball and burlap technique is stressful to the plant, staking will better enable them to acclimate to their new planting site.

- Bare root trees should always be staked to ensure good root establishment. Although bare root trees can often survive well without being staked, it's still recommended to prevent unnecessary movement of the root system within the soil.

- The last reason for plant origin related staking concerns the

Tree showing the results of guy wire girdling. The wire loop wasn't large enough and the wire was left on too long.



spade dug tree. In general, these trees don't need staking because the weight and size of the soil ball in relation to the size of the tree canopy is conducive to growing without staking. There are some exceptions, however.

When extremely large trees are moved and have a relatively small soil ball, they should be staked to prevent unnecessary movement of the soil ball. Large trees that are moved with a smaller spade

prevailing wind. This will help prevent wind damage and possible stake breakage.

The long three-stake staking method is often preferred, but should be reserved for trees up to 20 feet tall. The stakes should again be a foot higher than the lowest crotch.

Place the stakes far enough from the tree and the root ball to prevent the tree from hitting the stakes during windy conditions.

The short three-stake staking method involves running guy wires from the tree to a wooden stake driven into the ground perpendicular to the guy wire. This stake should be several feet outside the soil ball. This method provides stronger support for a larger diameter tree or taller tree.

The last type of staking method uses three soil anchors. As in the short three-stake method, the same guy wires run from the tree down to the soil level, but are attached to a soil anchor. This can be screwed into the soil at an angle perpendicular to the direction of the guy wire.

A duck-bill anchor can also be used at the same angle so it's firmly planted in the soil. These anchors are extremely strong and capable of holding trees in vertical positions during extreme winds.

Soil anchors are recommend-

ed for large diameter trees or trees that are extremely tall. The larger the tree, the larger diameter of guy wire/cable must be used.

TECHNIQUES. The method used to connect the guy wire to the tree is also critical. Always properly connect the guy wires to prevent physical contact of the wire and the tree trunk. This is avoided by inserting the wire into a piece of garden hose or other hose material.

This allows the hose to make contact with the tree and not the wire. As the tree grows in diameter during the first growing season, there must be enough slack in the loop surrounding the trunk to allow for adequate growth and prevent girdling by the guy wire.

The loop of the guy wire should always be placed in the crotch of the tree where a couple of main branches come together. This will help hold the wire in place, preventing it from slipping on the trunk and causing bark damage or lost contact with the tree.

The other end of the guy wire should be attached to the stake or anchor in a similar fashion to prevent it from pulling free. Often, a toggle mechanism is inserted halfway up the guy wire to allow tightening or loosening of the wire without having to disassemble the points of attachments at either end.

In addition, there should always be a 6-inch deflection in the cable.

Using the short, three-stake staking technique, deflect the cable six inches at the midway point as the cable is pulled taut. Then secure the cable to the stake. This will give the tree trunk an opportunity to become hardened more quickly, and better prepared for the inevitable removal of the guy wire.

Recent research at Oklahoma State University has revealed that trees staked in too rigid a fashion are subject to breakage at some point below guy wire attachment once the guy wires are removed. When guy wires are attached with at least a 6-inch deflection, the entire trunk becomes sturdier and more capable of handling high wind. As a result, trees are less likely to break at any point along the trunk.

The length of time the guy wire remains in place depends entire-

.....
Bare root trees should be staked to ensure good root establishment and prevent unnecessary movement.

than is required should always be pruned back to reduce wind resistance. This will help prevent the tree from toppling or being tipped within the root ball.

METHODS. The long two-stake staking method is reserved only for extremely small trees — under 10 to 12 feet tall. The stakes should be long enough to reach about a foot above the lowest crotch. Special care should be taken to ensure that the stakes are located along the same plane as the

ly upon the tree's soil stability. This desirable, stabilizing effect will generally occur within the first year. New plant staking is usually done for a 12-month period.

The best way to tell whether or not guying and staking continues to be needed is to remove all guy wires and try to move the tree in the soil. Any sideways movement leaving more than a 1/2-inch gap between the trunk and soil at the ground level is reason for concern.

These trees should remain staked because they probably haven't established themselves sufficiently to survive during windy conditions. It's important to leave enough slack in the guy wire loop to accommodate the time the tree will remain staked.

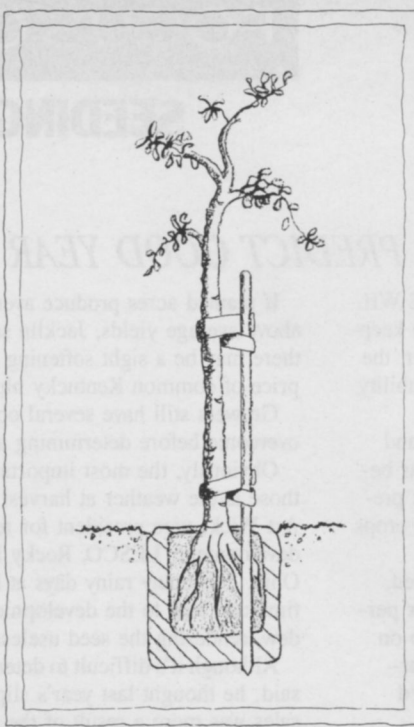
When rocking a tree back and forth produces no gap between soil and trunk, the guying and staking has served its purpose and should be removed.

Leaning trees often result in the need for staking and guying. The following technique has been successful in righting crooked

trees: By flooding the root system of the tree through water injections to the soil, the tree root system is saturated to the point that when moving the tree, the roots will not be significantly damaged.

Once the tree has been pulled into a vertical position, the guy wires are used to anchor the tree. Use an anchoring technique with opposing guy wires, pulling the tree in the opposite direction from which it was leaning. The two-stake technique will be necessary to be sure the tree doesn't revert to its original leaning position.

The guy wires should be kept in place for a minimum of two years. This will give the tree enough time to reorient itself and redistribute its root system to overcome the ori-



Staking to support detail using single pole method.

ginal leaning orientation.

Other special considerations should be given to storm-topped trees. Any storm-topped tree should be righted as soon as possi-

ble, keeping the root system moist to prevent the roots from drying out. These trees should then be staked and guyed as described above.

This article has presented an overview of circumstances in which staking and guying should be used to encourage rapid tree establishment, resulting in the development of healthier trees.

There may be other occasions, however, in which tree staking and guying are required. If so, the same staking techniques or variations may be necessary and should be implemented quickly to prevent unnecessary stress to the root system or trunk of the tree. — William Eubank

The author is a registered professional entomologist and president of GrowScape Consultants Inc., a Houston-based company providing landscape consultation and training for lawn and landscape maintenance companies. Eubank also handles loss appraisal claims on trees for insurance purposes or for reports to the Internal Revenue Service.

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INITIAL REPORTS PREDICT GOOD YEAR FOR TURF SEED AVAILABILITY

GRASS SEED GROWERS IN THE WILLAMETTE Valley region of Oregon are keeping their fingers crossed. And so far, the market outlook for grass seed availability this summer is good.

The winter of 1989-90 was mild and considerably less harsh than the year before, reported several growers. That prevented the problem of winterkill on crops that were planted in the fall.

But while one problem was avoided, another did appear. The mild winter permitted pests and diseases to develop on grass stands, said Gayle Jacklin, marketing representative for Jacklin Seed Co., Post Falls, Idaho.

"On our common Kentucky bluegrass we had a problem with the winter wheat mite, and the proprietary varieties saw some damage from cutworms," she said. But those have been treated and it looks like we're on schedule for a pretty good crop."

If planted acres produce average to above average yields, Jacklin said, there may be a sight softening in the price of common Kentucky bluegrasses.

Growers still have several obstacles to overcome before determining availability.

Obviously, the most important among those is the weather at harvest time, said Art Wick, vice president for research and development, LESCO, Rocky River, Ohio. Too many rainy days at harvest time can lead to the development of mildew, rendering the seed useless.

Although it's difficult to determine, Wick said, he thought last year's slip in seed sales was more a result of the strange weather patterns — too much rain in the summer — than a downturn in the economy.

Many operators bought seed last spring which remained unplanted in storage because it was impossible to plant in the rain.

"One thing we heard last year was,

'Hold up on that shipment. We haven't used the first one yet,'" Wick said.

In general, there's a good carry over of perennial ryegrasses for the coming buying season while the supply of turf-type tall fescues is sliding, Wick said. The price the seed companies are paying the growers is up, and that's a sure sign of increased prices for operators.

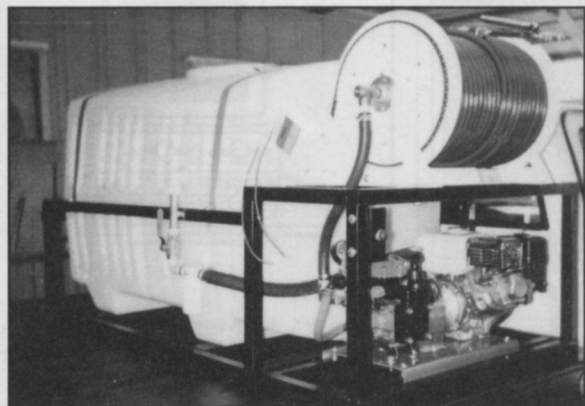
At Jonathan Green, Farmingdale, N.J., Barry Green Jr., vice president, sales, said he's confident this year's business will not be as shaky.

"It was almost 100 years since there was rainfall like that in one year," he said.

Provided the weather cooperates, Green said, this should be a good year for turf seed sales.

"Obviously there are guys out there wanting to plant," he said. "Since so many couldn't last year, I think it'll take a lot to make them not plant this year." ■

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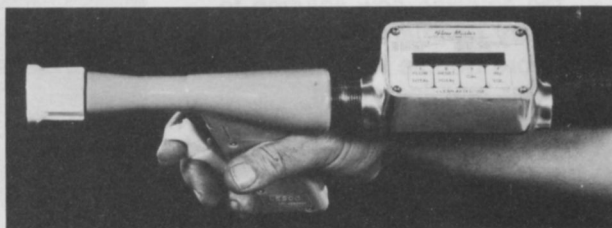


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GRASS ROOTS CAMPAIGN NEEDED TO KNOCK OUT MEDICAL LEAVE BILL

IN AN ATTEMPT to derail a potentially precedent setting family and medical leave bill, the American Association of Nurserymen is urging green industry operators to get involved in a grass roots mail campaign.



After four years of discussion, the bill — regulating time off allowances — may soon be up for vote before the U.S House of Representatives.

H.R. 770 would, in part, do the following: mandate employers to provide 10 weeks of employee unpaid leave every two years for newborn or adopted children or seriously ill children or parents; mandate employers to provide 15 weeks

of unpaid leave for serious personal illness or injury every year; mandate that employers maintain health benefits for any employee on leave under its provisions; and mandate that employers guarantee all covered employees equivalent or similar jobs once leave is completed.

Mandated leave would apply to any employer with 50 or more employees working 20 or more hours a week. Those with fewer employees would not be required to comply, however, the employee threshold may drop to 35 within three years, according to Ben Bolusky, AAN director of government affairs.

The employee threshold gives the industry a false sense of security because it's a politically arbitrary number, he said. "They'll keep shrinking the exemption and it will be rendered meaningless."

A Senate version of the bill, S 345, would require that employees working

17½ or more hours per week fall under mandated leave provisions.

AAN is encouraging green industry operators to fight the bill because it destroys the valuable flexibility which now exists between employers and employees to tailor benefits to individual and company needs.

In addition, it creates dangerous trade-off conditions in which employers may be forced to sacrifice valuable worker-preferred benefits in order to pay or compensate for Congressionally imposed costs of mandated leave.

"Leave benefits are a great incentive to attract and keep employees, but the question is: Do we want the government to determine our benefit packages?" Bolusky said.

Write your Senators at: U.S. Senate, Washington, D.C., 20510 and your Congressman at: U.S. House of Representatives, Washington, D.C. 20515. ■

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Who do we need to get involved? Support from organizations, institutions and associations is essential, but individual efforts from parents, teachers and coaches is mandatory. We need input...emotional, testimonial, technical, statistical and physical. Then we need funds to fuel the mechanism. We need *you*.

We need community liaison, people who will grab the ball on a local level and run with it. We need people in the right places who can implement a plan to tackle a problem, devise game plans in the community and make them work. We need people of conscience who realize that falling is a part of physical activity and that getting up and shaking it off is a *right*, and pain and injury are not acceptable. We need *you*.

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Olmr joins Kohler after serving as vice president of engineering for Homelite Di-

vision of Textron Inc., where he was responsible for introducing 70 new products.

At Toro, **Richard Pollick** has been promoted to vice president and general manager of International Equipment and **Ram Kumar** has been appointed president of Toro Ventures, the company's newest business venture.

Pollick's duties include supervising international sales, marketing, manufactur-

ing and distribution operations and the continued strengthening of the company's global market.

Pollick started at Toro in 1982 and most recently was managing director for the walk-behind products group where he oversaw engineering and marketing activities.

Kumar will be responsible for developing businesses with combined efforts from the company's commercial and irrigation product groups that achieve economic balance, and establish Toro as an environmental management resource company.

The first projects for the new business will be water aeration, lawn refuse handling and utility vehicles.

Kumar joined Toro in 1978 as a financial analyst. Most recently he was vice president and general manager for international equipment.

HERBERT F. BUNTON, CHAIRMAN EMERITUS, BUNTON CO., Louisville, Ky., died in late March.

Until retirement, Bunton was chairman of the company. He was also president of Bunton Seed Co. He was a past president of the Downtown Optimist Club of Louisville and a former director for the Louisville Chamber of Commerce and the Salvation Army.

He was a former member of the Sales & Marketing Executives of Louisville and the Kentuckiana World Commerce Council and the Louisville Nurserymen's Association.

He is survived by his wife, the former Charles Anna Ritchey; three daughters, Sherry Warwick, Donna Yenowine and Vicki Byers; and a brother, Winfrey Bunton Jr., all of Louisville.



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PRODUCTS

A NEW SPECIFICATION BROCHURE for Duckbill professional tree supports has been completed by **Foresight Products**. It contains detailed drawings and specifications of components for all Duckbill models, which are used to support trees with calipers of up to 10 inches and larger.

Landscape architects can transfer drawings and specs directly from the brochure to their own planting details.

Tree guying kits are also available and include three preassembled guy lines. These consist of a Duckbill anchor, galvanized steel cable, turn buckle, tree collar and all necessary hardware. The Duckbill models have holding capacities from 300 to 5,000 pounds each.

Circle 127 on reader service card

A NEW SIDE ENTRY STRAW OR HAY mulch spreader has been introduced by **Finn Corp.**

The B-70 model is designed to require a minimum amount of truck space, allowing for greater mulch storage. Its skid has an over center clutch as standard equipment, and an overall rugged design for trouble-free performance.

It can handle as much as 6 to 7 tons of material per hour with a discharge distance of up to 60 feet. It's available with either an air-cooled gasoline engine or a



water-cooled diesel engine.

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THE **LAND PRIDE** 48-INCH SOLID stand seeder is designed for accurate interseeding and new seeding of grasses.

The three-way soil-to-seed contact system provides greater germination and



emergence with the solid advantages of a full-width seeding pattern. Its PTO driven knives slice into the ground creating slots to receive the seed.

The fluted seed cups precisely meter the desired amount of seed in a broadcast pattern. Easily adjustable double torsion tickler tines agitate the seeding surface to help promote soil contact.

Finally the solid cast iron packer wheels finish the job by pressing and firmly packing the seed, eliminating air pockets for proper germination.

An incorporated aeration procedure eliminates the need for a second pass, while promoting a more accurate renovation of established turf.

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FROM A YOUNG DEVELOPING TREE to a mature one, **Twist-Brace** from **V.I.T. Products Inc.** provides the best support system to resist the rigors of climate and environmental stress.

The system's steel construction provides stability while its loop configuration allows for tree movement. It provides strong support from high winds so the tree will never fall over.

Because it involves no guy wires, liability is reduced and lawn mowers can cut closer to trees, leading to less time consuming maintenance.

The system is available with two mounting methods. The nail bracket style is designed to be nailed directly to lodge poles or square stakes while the bolt style is designed for through pole installation using either galvanized pipe or lodge pole lines. Threaded ends are inserted through drilled holes and bolted securely.

130 on reader service card

THE **TROY-BILT** **TRAIL Blazer**® sickle bar mower has a pivoted sickle bar blade that enables the mower to follow ground contours independent of wheels and chassis, eliminating scalping or hang ups on uneven terrain.

The unit also has an exclusive tangle-free blade that can mow 1,500

PRODUCT SPOTLIGHT

CENTURY RAIN AID NOW Offers preassembled Vista landscape lighting for residential and commercial applications.

The lighting line includes 15 types of garden and wall mount lighting fixtures and lamps for

uplighting, downlighting, spotlighting and illuminating walkways, art, architectural elements, gardens and walls.

Contractors can choose from 35 wedge base, 2-pin base, sealed beam, halogen quartz and

single- and double-contact bayonet base lamps. Optional fixtures include the MR-16 lamp, which has a bulb life rating of 6,000 hours.

The lighting units come pre-assembled from the factory, so less time is spent assembling fixtures, pulling electrical cords or adding spikes.

Support literature is available and includes recommended uses, optional lamps, photometric charts and mounting techniques.

Also available are a remote control system and software that interface with Apple IIe and IIc, Commodore 64 and 128, Macintosh- and IBM-compatible computers for automatic timing.

126 on reader service card





square feet of overgrown brush in just minutes.

Also included are 19 induction-hardened steel knives that stay sharp through many hours of use, and are replaceable; large 34- and 38-inch cutting widths; and special grass diverter that moves at 840 rpm and prevents buildup, tangling and clogging by knocking weeds, grass and brush to the side after cutting.

Circle 131 on reader service card

LITTLE WONDER OFFERS FIVE models of electric hedge trimmers to meet every demand. Available are 16- and 24-inch double sided or 16-, 24- and 30-inch single sided blade lengths that cut growth up to 1/2-inch thick.



The double reciprocating steel blades are activated by double switching — one in each handle — to increase user safety.

All moving parts are sealed in a metal gear housing to provide dependable performance.

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A NEW LINE OF MULTI-PURPOSE vehicles called Sabre is now available from **Engineering Products Co.**

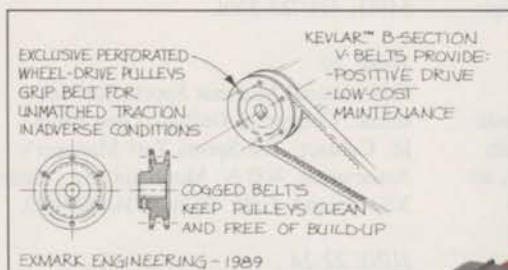
The modern looking vehicle is built on a steel-channel frame that has a lifetime warranty and features 4-wheel independent suspension and 4 shocks for a smooth, comfortable ride over a variety of terrain.

Other features include a Honda GX240 4-cycle-engine and a 10-cubic-foot cargo box with hydraulic lift system that can handle 500 pounds.

Racy, turbine-styled hub caps, swept back front cowl, rear view mirrors, custom bucket seats with arm rests, AM/FM cassette stereo and trailer create an upscale image for the new line of maintenance vehicles.

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CALENDAR

MAY 16

North Carolina Turf and Landscape Field Day, North Carolina State University Turf Field Center, Raleigh, N.C. Contact: Joe DiPaolo, P.O. Box 7620, NCSU, Raleigh, N.C. 27695-7620; 919/737-2657.

JUNE 7-9

Florida Nurserymen & Growers Association Annual Meeting, Boca Raton Club, Boca Raton, Fla. Contact: Earl Wells, executive vice president, 5401 Kirkman Rd., Suite 650, Orlando, Fla. 32819; 407/345-8137.

JUNE 7-15

Association of Official Seed Analysts/Society of Commercial Seed Technologists Annual Meeting, Holiday Inn, Annapolis, Md. Contact: Maryland Department of Agriculture Turf and Seed Section, 50 Harry S. Truman Parkway, Annapolis, Md. 21401; 301/841-5960.

JUNE 8-9

The Playground Design and Safety Symposium, Chicago, Ill. Contact: National Institute, P.O. Box 1936, Appleton, Wis. 54913; 414/733-2301.

JUNE 20

Fifth Annual Midwest Sports Turf Institute, College of DuPage, Glen Ellyn, Ill. Contact: The Sports Turf Manager's Association, 400 N. Mountain Ave., Suite 301, Upland, Calif. 91786; 714/981-9199.

JUNE 22-24

A workshop for urban forest personnel sponsored by the American Society of Consulting Arborists, Sheraton Imperial Hotel and Towers, Research Triangle, N.C. Contact: ASCA, 700 Canterbury Rd., Clearwater, Fla. 34624; 813/446-3356.

JUNE 26

The Lawn Institute Annual Meeting, Hyatt Regency Grand Cypress, Orlando,

Fla. Contact: Eliot Roberts, executive director, P.O. Box 108, Pleasant Hill, Tenn. 38578-0108; 615/277-3722.

JULY 29-31

International Lawn, Garden and Power Equipment Expo, Kentucky Fair & Exposition Center, Louisville, Ky. Contact: Andry Montgomery & Assoc., 6100 Dutchmans Lane, 6th Floor, Louisville, Ky. 40205; 800/558-8767 or 502/473-1992 in Kentucky or outside the U.S.

AUG. 1

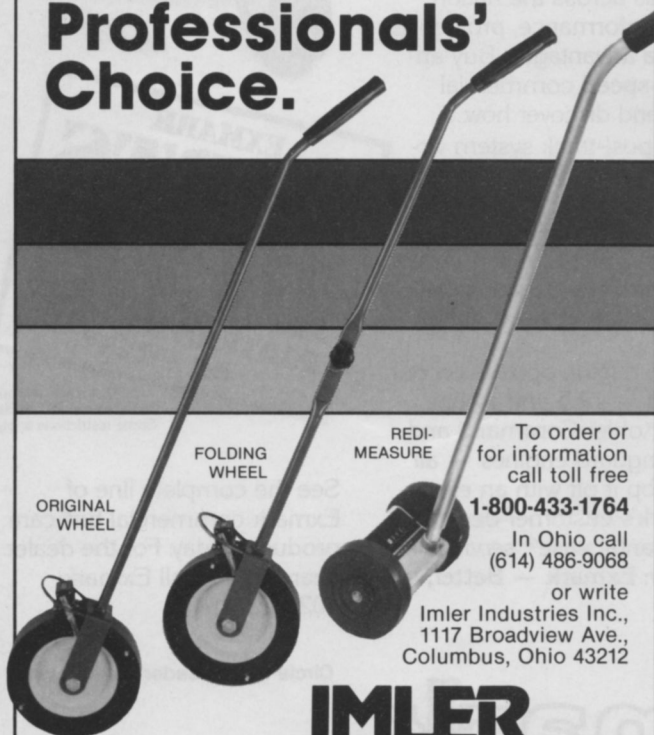
University of Georgia, Athens Turfgrass Field Day, Griffin Experiment Station, Griffin, Ga. Contact: Georgia Turfgrass Association, 4565-A S. Berkley Lake Rd., Norcross, Ga. 30071; 404/447-4985.

SEPT. 14-16

The 2nd Annual Bonsai & Orchid Expo, Orlando, Fla. Contact: BOE, 26 Pine St., Dover, Del. 19901; 302/736-6781. ■

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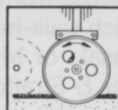
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CLASSIFIEDS

RATES

All classified advertising is 55 cents per word. For box numbers, add \$1 plus six words. All classified ads must be received by the publisher before the 10th of the month preceding publication and be accompanied by cash or money order covering full payment. Submit ads to: Lawn and Landscape Maintenance magazine, 4012 Bridge Avenue, Cleveland, Ohio 44113. Fax: 216/961-0364.

ACQUISITIONS

WANTED TO ACQUIRE

Lawn care companies of all sizes in U.S. and Canada being sought by national corporation. Complete buy out or stay and grow with us. If interested please call me directly: Don Karnes, Senior Vice President, TruGreen Corp., 404/442-8700. Strict confidentiality maintained.

WANTED TO BUY

Lawn care companies of all sizes anywhere in U.S. wanted to purchase by national corporation. If interested please respond to: *Lawn and Landscape Maintenance*, Box 329, 4012 Bridge Ave., Cleveland, Ohio 44113. Strict confidentiality maintained.

CONSTRUCTION/MAINTENANCE

Want to purchase landscape construction or landscape maintenance company in California. Serious inquiries, confidential. Cadiz Landscape, 4472 Stern Ave., Sherman Oaks, Calif. 91423. 818/981-0452.

FOR SALE

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Hannay reels new in-the-box, E1526s, E1530s, \$349; lawn spray hose, 275 psi and 600 psi, all sizes; original Imler measuring wheels, \$48; glycerin-filled gauges, 0-60 psi to 0-1,000 psi, \$19.95; ChemLawn guns, \$75.95; lawn spray

boots, \$16.95; lawn spray gloves, \$1.75/pair. Call Hersch's Chemical Inc. 800/843-LAWN — outside of Michigan 313/543-2200

LANDSCAPE TRAINING VIDEOS

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Let the government finance your small business. Grants/loans to \$500,000. Free recorded message: 707/448-0270. (NK8)

DEALERS

All new product line of multi-purpose vehicles consisting of lawn tractors, garden tractors, utility vehicles and trailers — all targeted at the "upscale" consumer and "upscale" places of business has openings in various areas for dealers. If you have a market for these types of products and want to work with an aggressive manufacturer that will make things happen on your showrooms — call 800/262-1191 and ask for Rick Welch — National Sales Manager — Sabre Products.

SALES OPPORTUNITY

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REPUTATION. Standing behind its motto — change is the rule rather than the exception — Reinhold & Vidosh bases its reputation on the ability to conform to the needs of its customer.

"We sometimes run into new projects with a unique scope, or something that hasn't been tried before," Hearn said. "We're flexible and adaptable to almost any situation."

The Drought of 1988, for example, required innovative thinking to save a boundary of trees at a General Motors testing facility in Milford, Mich. GM officials were worried about the trees dying, leaving the plant highly visible.

The on-site crew, ranging from 12 to 28 employees, went to work trucking water to the trees. They watered the trees for eight to 10 hours a day for a month, Hearn said.

"Melanie has a vision of what she wants to accomplish and she never wavers from her goals," Hearn said. "She brought integrity and sophistication to the business such as a cost tracking system. Once you generate large dollars, you can't do it by the seat of your pants."

Reinhold & Vidosh is extremely conscious of its public image, considering employees its first line of advertisement.

Company logos appear on vehicles, shirts and hats. Vehicles are washed on a regular basis and all employees are required to wear uniforms — shirts, hats, boots and pants of their own choice, generally jeans.

"We bring a degree of professionalism that isn't often found," Sawka said. "We have more experienced landscape architects on staff than most and we're also much more versed on the types of plant materials available."

The number of maintenance employees has grown from 35 peak season in 1985

to 165 in 1989. Hearn expects 250 in 1990, 60 of whom are full-time employees.

TIPS. For those just starting out in the lawn and landscape maintenance industry, Sawka recommends working with someone technically astute — someone who knows horticulture and landscaping as well as someone with a business background.

"If I had to do it all over again, I would have majored in business and minored in horticulture," she said.

In addition, it's important to attend seminars, be active in state and national trade associations, network with people across the country and join business organizations.

"Approach growth responsibly. It's tough doubling your volume; instead try to limit it to manageable growth," Sawka said. "The field tells you when to grow and buy. If your need is permanent then buy, if temporary, then lease."

IN THE FUTURE. In the years ahead, Reinhold & Vidosh will focus on sports complex development, large commercial developments on a regional basis, an increased maintenance presence in Michigan and, of course, further expansion in the South.

To keep the maintenance market thriving, further education of developers is needed.

"It's futile to do installation if the budget isn't there. If we make a commitment to do maintenance then we're going to do it the best we can," Sawka said. "It's a tragedy to make a commitment to build and then let the project deteriorate. Landscape maintenance is just as important as janitorial services."

The company will take on some design work, although the majority of its projects will continue to be designed by large architectural firms since the company is not "looking to compete with them."

As Reinhold & Vidosh continues to grow, Sawka's biggest fear is that it might one day become a bureaucracy. It's not likely to happen if Sawka continues to stress employee involvement and growth.

Individuals working for Reinhold &

Vidosh are encouraged to meet personal as well as professional goals. "They should be challenging as well as rewarding," Sawka said. "If we can provide viable career paths, then we want them to meet their goals. It's the only way to overcome labor shortages."

Pricing will continue to be a problem because low ballers will always affect the lawn and landscape maintenance industry. "They're not going to go away. We have to educate them regionally and nationally," she said.

Reinhold's prices aren't the cheapest in the business, but the company feels you get what you pay for.

"All customers are concerned with price, but we're not the type of contractor, for instance, that does a lot of government work which is subject to low bid. Those are projects looking for the cheapest price, and we can't be competitive," Sawka said. "I'm not saying it's a bad market, it's just not ours. I think all customers are concerned with price. Everyone wants a value."

Reinhold has won awards for a number of projects including Federal Express Corporate Technology Center, Memphis, Tenn.; Ralston Purina Checkerboard Square 2000 Park, St. Louis, Mo.; Washington Boulevard Streetscape, Detroit, Mich.; and Applicon Inc., Ann Arbor, Mich.

When details of the merger are complete, Sawka will concentrate on doing what she does best — working with people and plant materials.

"I never thought of doing anything else," Sawka said. "It's (Reinhold) bigger than I ever thought it would be. I was fortunate to have a lot of opportunities — I just seized them as they presented themselves."

"My dad would have been overwhelmed, but very proud. I admired what he achieved, unfortunately I never had an opportunity to work with him as an adult."

— *Cindy Code*

The author is Editor of Lawn and Landscape Maintenance magazine.

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